Simple Moving Average

Abbreviation: Avg
Category: Averages

Input Parameters:

Name	Range	Default
Time Series		Close
Avg Periods	Int >= 1	5

Calculation:

(Sum of the current Time Series value and the past n-1 Time Series values) / n

where
n = Avg Periods

Discussion:

Provides a smoothing of a time series by calculating the average time series value over the last n periods.

Exponential Moving Average

Abbreviation: ExpAvg
Category: Averages

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg Periods	Int >= 1	5

Calculation:

f * X + (1.0 - f) * Y

where
X = Time Series
Y = Exponential Moving Average one period ago (1st period Y is set to 1st period X)
f = 2 / (ExpAvg Periods + 1)

Discussion:

Provides a smoothing of a time series with an emphasis given to values during the most recent time periods. Most users are more comfortable working with time periods rather than percentages, therefore as a general guideline, the ExpAvg Factor roughly translates to the number of days that the function takes into consideration. However, in reality it takes all previous days into consideration, while giving the first day an exponentially smaller input to the most recent value.

Adaptive Moving Average (AMA)

Abbreviation: AMA
Category: Averages

Input Parameters:

Name	Range	Default
Time Series		Close
AMA Periods	Int >= 1	10

Calculation:

Y + (Smootiing Factor* (X - Y))

w here
X = Time Series
Y = AMA one period ago (1st period Y is set to 1st period X)
Smoothing Factor = (Efficiency(Time Series, AMA Periods) * (2/(2+1) - 2/(30 + 1)) + 2/(30 + 1))^2
= (Efficiency(Time Series, AMA Periods) * (0.6667 – 0.0645) + 0.0645)^2
= (Efficiency(Time Series, AMA Periods) * (0.6021667) + 0.0645)^2

Efficiency represents Efficiency

Discussion:

Provides a smoothing of a time series w ith an emphasis given to values during the most recent time periods, based on the volatility of the time series in the last "AMA Periods". An extremely volitile issue w ill have less w eight givin to the most recent values, w here as a less volitile issue w ill have more w eight assigned to the most recent values.

Linearly Weighted Moving Average

Abbreviation: LinWgtAvg
Category: Averages

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg Periods	Int >= 1	5

Calculation:

(n*T + (n-1)*T[-1] + ... + 2*T[-n+2] + T[-n+1]) / (n + (n-1) + ... + 2 + 1)

where
T = Time Series
T[-j] = Time Series value j periods ago
n = LinWgtAvg Periods

Discussion:

Provides a smoothing of a time series with an emphasis given to values during the most recent time periods.

Volume Weighted Moving Average

Abbreviation: VolWgtAvg
Category: Averages

Input Parameters:

Name	Range	Default
Time Series		Close
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

$$\frac{\text{Sum over n days of (Time Series * Volume)}}{\text{Sum over n days of Volume}}$$

where
n = VolWgtAvg Periods

Discussion:

Provides a smoothing of the closing price with an emphasis on relatively high volume periods. The average gives the most weight to the closes of periods with higher volume relative to the other periods in the moving average's time frame.

Simple: Avg1(Avg2 - Avg3)

Abbreviation: Avg1(Avg2-Avg3)
Category: Advanced Simple Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	5
Avg3 Periods	Int >= 1	10

Calculation:

Avg((Avg(X, n2) - Avg(X, n3)), n1)

where
X = Time Series
n1 = Avg1 Periods
n2 = Avg2 Periods
n3 = Avg3 Periods

Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by calculating the moving average of the difference between two different sized moving averages.

Simple: Avg1(Avg2 - Lag(Avg2))

Abbreviation: Avg1(Avg2-Lag(Avg2))
Category: Advanced Simple Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10
Lag Amount	Int >= 1	5

Calculation:

Avg((Avg(X, n2) - Lag(Avg(X, n2), L)), n1)

where
X = Time Series
n1 = Avg1 Periods
n2 = Avg2 Periods
L = Lag Amount

Avg represents Simple Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the moving average of the difference between a moving average and the same sized lagged moving average.

Simple: Avg1(Avg2 / Avg3 Ratio)

Abbreviation: Avg1(Avg2/Avg3 Ratio)
Category: Advanced Simple Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	5
Avg3 Periods	Int >= 1	10

Calculation:

Avg((Avg(X, n2) / Avg(X, n3)), n1)

where
X = Time Series
n1 = Avg1 Periods
n2 = Avg2 Periods
n3 = Avg3 Periods

Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by calculating the moving average of the ratio of two different sized moving averages.

Simple: Avg1(Avg2 / Lag(Avg2) Ratio)

Abbreviation: Avg1(Avg2/Lag(Avg2) Ratio)
Category: Advanced Simple Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10
Lag Amount	Int >= 1	5

Calculation:

Avg((Avg(X, n2) / Lag(Avg(X, n2), L)), n1)

where
X = Time Series
n1 = Avg1 Periods
n2 = Avg2 Periods
L = Lag Amount

Avg represents Simple Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the moving average of the ratio of a moving average to the same sized lagged moving average.

Simple: Avg1 - Lag(Avg2)

Abbreviation: Avg1-Lag(Avg2)
Category: Advanced Simple Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Avg1 Periods	Int >= 1	5
Lag Amount	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, n1) - Lag(Avg(X, n2), L)

where
X = Time Series
n1 = Avg1 Periods
L = Lag Amount
n2 = Avg2 Periods

Avg represents Simple Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the difference between a moving average and a different sized lagged moving average.

Simple: Avg - Lag(Avg)

Abbreviation: Avg-Lag(Avg)

Category: Advanced Simple Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Avg Periods	Int >= 1	5
Lag Amount	Int >= 1	5

Calculation:

Avg(X, n) - Lag(Avg(X, n), L)

where
X = Time Series
n = Avg Periods
L = Lag Amount

Avg represents Simple Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the difference between a moving average and the same sized lagged moving average.

Simple: Avg1 - Avg2

Abbreviation: Avg1-Avg2
Category: Advanced Simple Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, n1) - Avg(X, n2)

where
X = Time Series
n1 = Avg1 Periods
n2 = Avg2 Periods

Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by calculating the difference between a moving average and a different sized moving average.

Simple: Avg Offset

Abbreviation: Avg Offset
Category: Advanced Simple Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Avg Periods	Int >= 1	5

Calculation:

X - Avg(X, n)

where
X = Time Series
n = Avg Periods

Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by calculating the difference between the current time series value and the moving average of the time series.

Simple: Avg Ratio

Abbreviation: Avg Ratio
Category: Advanced Simple Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Avg Periods	Int >= 1	5

Calculation:

X / Avg(X, n)

where
X = Time Series
n = Avg Periods

Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by dividing the current time series value by the moving average of the time series.

Simple: Avg Envelope High

Abbreviation: Avg Envelope High
Category: Advanced Simple Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Avg Periods	Int >= 1	5
Envelope Fraction	Real > 0.0	0.25

Calculation:

Avg(X, n) * (1 + Envelope Fraction)

where
X = Time Series
n = Avg Periods

Avg represents Simple Moving Average

Discussion:

Provides a band a certain fraction above the moving average of a time series.

Simple Avg Envelope Low

Abbreviation: Avg Envelope Low
Category: Advanced Simple Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Avg Periods	Int >= 1	5
Envelope Fraction	Real > 0.0	0.25

Calculation:

Avg(X, n) * (1 - Envelope Fraction)

where
X = Time Series
n = Avg Periods

Avg represents Simple Moving Average

Discussion:

Provides a band a certain fraction below the moving average of a time series.

Simple: Lag(Avg)

Abbreviation: Lag(Avg)
Category: Advanced Simple Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Lag Amount	Int >= 1	5
Avg Periods	Int >= 1	5

Calculation:

Lag(Avg(X, n), L)

where
X = Time Series
L = Lag Amount
n = Avg Periods

Avg represents Simple Moving Average
Lag represents Lag

Discussion:

This indicator provides a lagged smoothing of a time series by calculating the lag of the moving average of a time series.

Simple: Avg1 / Avg2 Ratio

Abbreviation: Avg1/Avg2 Ratio
Category: Advanced Simple Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, n1) / Avg(X, n2)

where
T = Time Series
n1 = Avg1 Periods
n2 = Avg2 Periods

Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by calculating the ratio of a moving average to a different sized moving average.

Simple: Avg1 / Lag(Avg2) Ratio

Abbreviation: Avg1/Lag(Avg2) Ratio
Category: Advanced Simple Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Avg1 Periods	Int >= 1	5
Lag Amount	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, n1) / Lag(Avg(X, n2), L)

where
T = Time Series
n1 = Avg1 Periods
L = Lag Amount
n2 = Avg2 Periods

Avg represents Simple Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the ratio of a moving average to a different sized lagged moving average.

Simple: Avg / Lag(Avg) Ratio

Abbreviation: Avg/Lag(Avg) Ratio
Category: Advanced Simple Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Avg Periods	Int >= 1	5
Lag Amount	Int >= 1	5

Calculation:

Avg(X, n) / Lag(Avg(X, n), L)

where
X = Time Series
n = Avg Periods
L = Lag Amount

Avg represents Simple Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the ratio of a moving average to the same sized lagged moving average.

Exponential: ExpAvg1(ExpAvg2 - ExpAvg3)

Abbreviation: ExpAvg1(ExpAvg2-ExpAvg3)
Category: Advanced Exponential Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	5
ExpAvg3 Periods	Int >= 1	10

Calculation:

ExpAvg((ExpAvg(X, n2) - ExpAvg(X, n3)), n1)

where
X = Time Series
n1 = ExpAvg1 Periods
n2 = ExpAvg2 Periods
n3 = ExpAvg3 Periods

ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by calculating the moving average of the difference between two different sized moving averages. This indicator is also known as MACD Signal.

Exponential: ExpAvg1(ExpAvg2 - Lag(ExpAvg2))

Abbreviation: ExpAvg1(ExpAvg2-Lag(ExpAvg2))
Category: Advanced Exponential Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10
Lag Amount	Int >= 1	5

Calculation:

ExpAvg(ExpAvg(X, n2) - Lag(ExpAvg(X, n2), L), n1)

where
X = Time Series
n1 = ExpAvg1 Periods
n2 = ExpAvg2 Periods
L = Lag Amount

ExpAvg represents Exponential Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the moving average of the difference between a moving average and the same sized lagged moving average.

Exponential: ExpAvg1(ExpAvg2 / ExpAvg3 Ratio)

Abbreviation: ExpAvg1(ExpAvg2/ExpAvg3 Ratio)
Category: Advanced Exponential Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	5
ExpAvg3 Periods	Int >= 1	10

Calculation:

ExpAvg((ExpAvg(X, n2) / ExpAvg(X, n3)), n1)

where
X = Time Series
n1 = ExpAvg1 Periods
n2 = ExpAvg2 Periods
n3 = ExpAvg3 Periods

ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by calculating the moving average of the ratio of two different sized moving averages.

Exponential: ExpAvg1(ExpAvg2 / Lag(ExpAvg2) Ratio)

Abbreviation: ExpAvg1(ExpAvg2/Lag(ExpAvg2) Ratio)
Category: Advanced Exponential Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10
Lag Amount	Int >= 1	5

Calculation:

ExpAvg((ExpAvg(X, n2) / Lag((ExpAvg(X, n2)), L)), n1)

where
X = Time Series
n1 = ExpAvg1 Periods
n2 = ExpAvg2 Periods
L = Lag Amount

ExpAvg represents Exponential Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the moving average of the ratio of a moving average to the same sized lagged moving average.

Exponential: ExpAvg1 - Lag(ExpAvg2)

Abbreviation: ExpAvg1-Lag(ExpAvg2)
Category: Advanced Exponential Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg1 Periods	Int >= 1	5
Lag Amount	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, n1) - Lag((ExpAvg(X, n2)), L)

where
X = Time Series
n1 = ExpAvg1 Periods
L = Lag Amount
n2 = ExpAvg2 Periods

ExpAvg represents Exponential Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the difference between a moving average and a different sized lagged moving average.

Exponential: ExpAvg - Lag(ExpAvg)

Abbreviation: ExpAvg-Lag(ExpAvg)
Category: Advanced Exponential Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg Periods	Int >= 1	5
Lag Amount	Int >= 1	5

Calculation:

ExpAvg(X, n) - Lag((ExpAvg(X, n)), L)

where
X = Time Series
n = ExpAvg Periods
L = Lag Amount

ExpAvg represents Exponential Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the difference between a moving average and the same sized lagged moving average.

Exponential: ExpAvg1 - ExpAvg2

Abbreviation: ExpAvg1-ExpAvg2
Category: Advanced Exponential Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, n1) - ExpAvg(X, n2)

where
X = Time Series
n1 = ExpAvg1 Periods
n2 = ExpAvg2 Periods

ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by calculating the difference between a moving average and a different sized moving average. This indicator is also know as MACD.

Exponential: ExpAvg Offset

Abbreviation: ExpAvg Offset
Category: Advanced Exponential Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg Periods	Int >= 1	5

Calculation:

X - ExpAvg(X, n)

where
X = Time Series
n = ExpAvg Periods

ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by calculating the difference between the current time series value and the moving average of the time series.

Exponential: ExpAvg Ratio

Abbreviation: ExpAvg Ratio
Category: Advanced Exponential Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg Periods	Int >= 1	5

Calculation:

X / ExpAvg(X, n)

where
X = Time Series
n = ExpAvg Periods

ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by dividing the current time series value by the exponentrial moving average of the time series.

Exponential: ExpAvg Envelope High

Abbreviation: ExpAvg Envelope High
Category: Advanced Exponential Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg Periods	Int >= 1	5
Envelope Fraction	Real > 0.0	0.25

Calculation:

ExpAvg(X, n) * (1 + Envelope Fraction)

where
X = Time Series
n = ExpAvg Periods

ExpAvg represents Exponential Moving Average

Discussion:

Provides a band a certain fraction above the moving average of a time series.

Exponential: ExpAvg Envelope Low

Abbreviation: ExpAvg Envelope Low
Category: Advanced Exponential Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg Periods	Int >= 1	5
Envelope Fraction	Real > 0.0	0.25

Calculation:

ExpAvg(X, n) * (1 - Envelope Fraction)

where
X = Time Series
n = ExpAvg Periods

ExpAvg represents Exponential Moving Average

Discussion:

Provides a band a certain fraction below the moving average of a time series.

Exponential: Lag(ExpAvg)

Abbreviation: Lag(ExpAvg)
Category: Advanced Exponential Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Lag Amount	Int >= 1	5
ExpAvg Periods	Int >= 1	5

Calculation:

Lag(ExpAvg(X, n), L)

where
X = Time Series
L = Lag Amount
n = ExpAvg Periods

ExpAvg represents Exponential Moving Average
Lag represents Lag

Discussion:

This indicator provides a lagged smoothing of a time series by calculating the lag of the moving average of a time series.

Exponential: ExpAvg1 / ExpAvg2 Ratio

Abbreviation: ExpAvg1/ExpAvg2 Ratio
Category: Advanced Exponential Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, n1) / ExpAvg(X, n2)

where
X = Time Series
n1 = ExpAvg1 Periods
n2 = ExpAvg2 Periods

ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by calculating the ratio of a moving average to a different sized moving average.

Exponential: ExpAvg1 / Lag(ExpAvg2) Ratio

Abbreviation: ExpAvg1/Lag(ExpAvg2) Ratio
Category: Advanced Exponential Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg1 Periods	Int >= 1	5
Lag Amount	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, n1) / Lag(ExpAvg(X, n2), L)

where
X = Time Series
n1 = ExpAvg1 Periods
L = Lag Amount
n2 = ExpAvg2 Periods

ExpAvg represents Exponential Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the ratio of a moving average to a different sized lagged moving average.

Exponential: ExpAvg / Lag(ExpAvg) Ratio

Abbreviation: ExpAvg1/Lag(ExpAvg) Ratio
Category: Advanced Exponential Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg Periods	Int >= 1	5
Lag Amount	Int >= 1	5

Calculation:

ExpAvg(X, n) / Lag(ExpAvg(X, n), L)

where
X = Time Series
n = ExpAvg Factor
L = Lag Amount

ExpAvg represents Exponential Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the ratio of a moving average to the same sized lagged moving average.

Adaptive: AMA1(AMA2 - AMA3)

Abbreviation: AMA1(AMA2-AMA3)
Category: Advanced Kaufman Adaptive Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
AMA1 Periods	Int >= 1	5
AMA2 Periods	Int >= 1	5
AMA3 Periods	Int >= 1	10

Calculation:

AMA((AMA(X, n2) - AMA(X, n3)), n1)

where
X = Time Series
n1 = AMA1 Periods
n2 = AMA2 Periods
n3 = AMA3 Periods

AMA represents Adaptive Moving Average (AMA)

Discussion:

This indicator attempts to quantify movements in a time series by calculating the adaptive moving average of the difference between two different sized adaptive moving averages.

Adaptive: AMA1(AMA2 - Lag(AMA2))

Abbreviation: AMA1(AMA2-Lag(AMA2))
Category: Advanced Kaufman Adaptive Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
AMA1 Periods	Int >= 1	5
AMA2 Periods	Int >= 1	10
Lag Amount	Int >= 1	5

Calculation:

AMA((AMA(X, n2) - Lag(AMA(X, n2), L)), n1)

where
X = Time Series
n1 = AMA1 Periods
n2 = AMA2 Periods
L = Lag Amount

AMA represents Adaptive Moving Average (AMA)
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the adaptive moving average of the difference between an adaptive moving average and the same sized lagged adaptive moving average.

Adaptive: AMA1(AMA2 / AMA3 Ratio)

Abbreviation: AMA1(AMA2/AMA3 Ratio)
Category: Advanced Kaufman Adaptive Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
AMA1 Periods	Int >= 1	5
AMA2 Periods	Int >= 1	5
AMA3 Periods	Int >= 1	10

Calculation:

AMA((AMA(X, n2) / AMA(X, n3)), n1)

where
X = Time Series
n1 = AMA1 Periods
n2 = AMA2 Periods
n3 = AMA3 Periods

AMA represents Adaptive Moving Average (AMA)

Discussion:

This indicator attempts to quantify movements in a time series by calculating the adaptive moving average of the ratio of two different sized adaptvie moving averages.

Adaptive: AMA1(AMA2 / Lag(AMA2) Ratio)

Abbreviation: AMA1(AMA2/Lag(AMA2) Ratio)
Category: Advanced Kaufman Adaptive Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
AMA1 Periods	Int >= 1	5
AMA2 Periods	Int >= 1	10
Lag Amount	Int >= 1	5

Calculation:

AMA((AMA(X, n2) / Lag(AMA(X, n2), L)), n1)

where
X = Time Series
n1 = AMA1 Periods
n2 = AMA2 Periods
L = Lag Amount

AMA represents Adaptive Moving Average (AMA)
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the adaptive moving average of the ratio of an adaptive moving average to the same sized lagged adaptive moving average.

Adaptive: AMA1 - Lag(AMA2)

Abbreviation: AMA1-Lag(AMA2)
Category: Advanced Kaufman Adaptive Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
AMA1 Periods	Int >= 1	5
Lag Amount	Int >= 1	5
AMA2 Periods	Int >= 1	10

Calculation:

AMA(X, n1) - Lag(AMA(X, n2), L)

w here
X = Time Series
n1 = AMA1 Periods
L = Lag Amount
n2 = AMA2 Periods

AMA represents Adaptive Moving Average (AMA)
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the difference betw een an adaptive moving average and a different sized lagged adaptive moving average.

Adaptive: AMA - Lag(AMA)

Abbreviation: AMA-Lag(AMA)
Category: Advanced Kaufman Adaptive Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
AMA Periods	Int >= 1	5
Lag Amount	Int >= 1	5

Calculation:

AMA(X, n) - Lag(AMA(X, n), L)

where
X = Time Series
n = AMA Periods
L = Lag Amount

AMA represents Adaptive Moving Average (AMA)
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the difference between an adaptive moving average and the same sized lagged adaptive moving average.

Adaptive: AMA1 - AMA2

Abbreviation: AMA1-AMA2

Category: Advanced Kaufman Adaptive Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
AMA1 Periods	Int >= 1	5
AMA2 Periods	Int >= 1	10

Calculation:

AMA(X, n1) - AMA(X, n2)

where
X = Time Series
n1 = AMA1 Periods
n2 = AMA2 Periods

AMA represents Adaptive Moving Average (AMA)

Discussion:

This indicator attempts to quantify movements in a time series by calculating the difference between an adaptive moving average and a different sized adaptive moving average.

Adaptive: AMA Offset

Abbreviation: AMA Offset
Category: Advanced Kaufman Adaptive Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
AMA Periods	Int >= 1	5

Calculation:

X - AMA(X, n)

w here
X = Time Series
n = AMA Periods

AMA represents Adaptive Moving Average (AMA)

Discussion:

This indicator attempts to quantify movements in a time series by calculating the difference betw een the current time series value and the adaptive moving average of the time series.

Adaptive: AMA Ratio

Abbreviation: AMA Ratio
Category: Advanced Kaufman Adaptive Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
AMA Periods	Int >= 1	5

Calculation:

X / AMA(X, n)

where
X = Time Series
n = AMA Periods

AMA represents Adaptive Moving Average (AMA)

Discussion:

This indicator attempts to quantify movements in a time series by dividing the current time series value by the adaptive moving average of the time series.

Adaptive: AMA Envelope High

Abbreviation: AMA Envelope High
Category: Advanced Kaufman Adaptive Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
AMA Periods	Int >= 1	5
Envelope Fraction	Real > 0.0	0.25

Calculation:

AMA(X, n) * (1 + Envelope Fraction)

where
X = Time Series
n = AMA Periods

AMA represents Adaptive Moving Average (AMA)

Discussion:

Provides a band a certain fraction above the adaptive moving average of a time series.

Adaptive: AMA Envelope Low

Abbreviation: AMA Envelope Low
Category: Advanced Kaufman Adaptive Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
AMA Periods	Int >= 1	5
Envelope Fraction	Real > 0.0	0.25

Calculation:

AMA(X, n) * (1 - Envelope Fraction)

where
X = Time Series
n = AMA Periods

AMA represents Adaptive Moving Average (AMA)

Discussion:

Provides a band a certain fraction below the adaptive moving average of a time series.

Adaptive: Lag(AMA)

Abbreviation: Lag(AMA)
Category: Advanced Kaufman Adaptive Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Lag Amount	Int >= 1	5
AMA Periods	Int >= 1	5

Calculation:

Lag(AMA(X, n), L)

where
X = Time Series
L = Lag Amount
n = AMA Periods

AMA represents Adaptive Moving Average (AMA)
Lag represents Lag

Discussion:

This indicator provides a lagged smoothing of a time series by calculating the lag of the adaptive moving average of a time series.

Adaptive: AMA1 / AMA2 Ratio

Abbreviation: AMA1/AMA2 Ratio

Category: Advanced Kaufman Adaptive Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
AMA1 Periods	Int >= 1	5
AMA2 Periods	Int >= 1	10

Calculation:

AMA(X, n1) / AMA(X, n2)

where

T = Time Series

n1 = AMA1 Periods

n2 = AMA2 Periods

AMA represents Adaptive Moving Average (AMA)

Discussion:

This indicator attempts to quantify movements in a time series by calculating the ratio of an adaptive moving average to a different sized adaptive moving average.

Adaptive: AMA1 / Lag(AMA2) Ratio

Abbreviation: AMA1/Lag(AMA2) Ratio
Category: Advanced Kaufman Adaptive Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
AMA1 Periods	Int >= 1	5
Lag Amount	Int >= 1	5
AMA2 Periods	Int >= 1	10

Calculation:

AMA(X, n1) / Lag(AMA(X, n2), L)

where
T = Time Series
n1 = AMA1 Periods
L = Lag Amount
n2 = AMA2 Periods

AMA represents Adaptive Moving Average (AMA)
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the ratio of an adaptive moving average to a different sized lagged adaptive moving average.

Adaptive: AMA / Lag(AMA) Ratio

Abbreviation: AMA/Lag(AMA) Ratio
Category: Advanced Kaufman Adaptive Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
AMA Periods	Int >= 1	5
Lag Amount	Int >= 1	5

Calculation:

AMA(X, n) / Lag(AMA(X, n), L)

where
X = Time Series
n = AMA Periods
L = Lag Amount

AMA represents Adaptive Moving Average (AMA)
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the ratio of an adaptive moving average to the same sized lagged adaptive moving average.

Linearly Weighted: LinWgtAvg1(LinWgtAvg2 - LinWgtAvg3)

Abbreviation: LinWgtAvg1(LinWgtAvg2-LinWgtAvg3)
Category: Advanced Linearly Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg1 Periods	Int >= 1	5
LinWgtAvg2 Periods	Int >= 1	5
LinWgtAvg3 Periods	Int >= 1	10

Calculation:

LinWgtAvg((LinWgtAvg(X, n2) - LinWgtAvg(X, n3)), n1)

where
X = Time Series
n1 = LinWgtAvg1 Periods
n2 = LinWgtAvg2 Periods
n3 = LinWgtAvg3 Periods

LinWgtAvg represents Linearly Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by calculating the moving average of the difference between two different sized moving averages.

Linearly Weighted: LinWgtAvg1(LinWgtAvg2 - Lag(LinWgtAvg2))

Abbreviation: LinWgtAvg1(LinWgtAvg2-Lag(LinWgtAvg2))
Category: Advanced Linearly Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg1 Periods	Int >= 1	5
LinWgtAvg2 Periods	Int >= 1	10
Lag Amount	Int >= 1	5

Calculation:

LinWgtAvg((LinWgtAvg(X, n2) - Lag(LinWgtAvg(X, n2), L)), n1)

where
X = Time Series
n1 = LinWgtAvg1 Periods
n2 = LinWgtAvg2 Periods
L = Lag Amount

LinWgtAvg represents Linearly Weighted Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the moving average of the difference between a moving average and the same sized lagged moving average.

Linearly Weighted: LinWgtAvg1(LinWgtAvg2 / LinWgtAvg3 Ratio)

Abbreviation: LinWgtAvg1(LinWgtAvg2/LinWgtAvg3 Ratio)
Category: Advanced Linearly Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg1 Periods	Int >= 1	5
LinWgtAvg2 Periods	Int >= 1	5
LinWgtAvg3 Periods	Int >= 1	10

Calculation:

LinWgtAvg((LinWgtAvg(X, n2) / LinWgtAvg(X, n3)), n1)

where
X = Time Series
n1 = LinWgtAvg1 Periods
n2 = LinWgtAvg2 Periods
n3 = LinWgtAvg3 Periods

LinWgtAvg represents Linearly Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by calculating the moving average of the ratio of two different sized moving averages.

Linearly Weighted: LinWgtAvg1(LinWgtAvg2 / Lag(LinWgtAvg2) Ratio)

Abbreviation: LinWgtAvg1(LinWgtAvg2/Lag(LinWgtAvg2) Ratio)
Category: Advanced Linearly Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg1 Periods	Int >= 1	5
LinWgtAvg2 Periods	Int >= 1	10
Lag Amount	Int >= 1	5

Calculation:

LinWgtAvg((LinWgtAvg(X, n2) / Lag(LinWgtAvg(X, n2), L)), n1)

where
X = Time Series
n1 = LinWgtAvg1 Periods
n2 = LinWgtAvg2 Periods
L = Lag Amount

LinWgtAvg represents Linearly Weighted Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the moving average of the ratio of a moving average to the same sized lagged moving average.

Linearly Weighted: LinWgtAvg1 - Lag(LinWgtAvg2)

Abbreviation: LinWgtAvg1-Lag(LinWgtAvg2)
Category: Advanced Linearly Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg1 Periods	Int >= 1	5
Lag Amount	Int >= 1	5
LinWgtAvg2 Periods	Int >= 1	10

Calculation:

LinWgtAvg(X, n1) - Lag(LinWgtAvg(X, n2), L)

where
X = Time Series
n1 = LinWgtAvg1 Periods
L = Lag Amount
n2 = LinWgtAvg2 Periods

LinWgtAvg represents Linearly Weighted Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the difference between a moving average and a different sized lagged moving average.

Linearly Weighted: LinWgtAvg - Lag(LinWgtAvg)

Abbreviation: LinWgtAvg-Lag(LinWgtAvg)
Category: Advanced Linearly Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg Periods	Int >= 1	5
Lag Amount	Int >= 1	5

Calculation:

LinWgtAvg(X, n) - Lag(LinWgtAvg(X, n), L)

where
X = Time Series
n = LinWgtAvg Periods
L = Lag Amount

LinWgtAvg represents Linearly Weighted Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the difference between a moving average and the same sized lagged moving average.

Linearly Weighted: LinWgtAvg1 - LinWgtAvg2

Abbreviation: LinWgtAvg1-LinWgtAvg2
Category: Advanced Linearly Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg1 Periods	Int >= 1	5
LinWgtAvg2 Periods	Int >= 1	10

Calculation:

LinWgtAvg(X, n1) - LinWgtAvg(X, n2)

where
X = Time Series
n1 = LinWgtAvg1 Periods
n2 = LinWgtAvg2 Periods

LinWgtAvg represents Linearly Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by calculating the difference between a moving average and a different sized moving average.

Linearly Weighted: LinWgtAvg Offset

Abbreviation: LinWgtAvg Offset
Category: Advanced Linearly Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg Periods	Int >= 1	5

Calculation:

X - LinWgtAvg(X, n)

w here
X = Time Series
n = LinWgtAvg Periods

LinWgtAvg represents Linearly Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by calculating the difference betw een the current time series value and the moving average of the time series.

Linearly Weighted: LinWgtAvg Ratio

Abbreviation: LinWgtAvg Ratio
Category: Advanced Linearly Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg Periods	Int >= 1	5

Calculation:

X / LinWgtAvg(X, n)

where
X = Time Series
n = LinWgtAvg Periods

LinWgtAvg represents Linearly Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by dividing the current time series value by the linearly weighted moving average of the time series.

Linearly Weighted: LinWgtAvg Envelope High

Abbreviation: LinWgtAvg Envelope High
Category: Advanced Linearly Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg Periods	Int >= 1	5
Envelope Fraction	Real > 0.0	0.25

Calculation:

LinWgtAvg(X, n) * (1 + Envelope Fraction)

w here
X = Time Series
n = LinWgtAvg Periods

LinWgtAvg represents Linearly Weighted Moving Average

Discussion:

Provides a band a certain fraction above the moving average of a time series.

Linearly Weighted: LinWgtAvg Envelope Low

Abbreviation: LinWgtAvg Envelope Low
Category: Advanced Linearly Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg Periods	Int >= 1	5
Envelope Fraction	Real > 0.0	0.25

Calculation:

LinWgtAvg(X, n) * (1 - Envelope Fraction)

where
X = Time Series
n = LinWgtAvg Periods

LinWgtAvg represents Linearly Weighted Moving Average

Discussion:

Provides a band a certain fraction below the moving average of a time series.

Linearly Weighted: Lag(LinWgtAvg)

Abbreviation: Lag(LinWgtAvg)
Category: Advanced Linearly Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Lag Amount	Int >= 1	5
LinWgtAvg Periods	Int>= 1	5

Calculation:

Lag(LinWgtAvg(X, n), L)

w here
X = Time Series
L = Lag Amont
n = LinWgtAvg Periods

LinWgtAvg represents Linearly Weighted Moving Average
Lag represents Lag

Discussion:

This indicator provides a lagged smoothing of a time series by calculating the lag of the moving average of a time series.

Linearly Weighted: LinWgtAvg1 / LinWgtAvg2 Ratio

Abbreviation: LinWgtAvg1/LinWgtAvg2 Ratio
Category: Advanced Linearly Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg1 Periods	Int >= 1	5
LinWgtAvg2 Periods	Int >= 1	10

Calculation:

LinWgtAvg(X, n1) / LinWgtAvg(X, n2)

where
X = Time Series
n1 = LinWgtAvg1 Periods
n2 = LinWgtAvg2 Periods

LinWgtAvg represents Linearly Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by calculating the ratio of a moving average to a different sized moving average.

Linearly Weighted: LinWgtAvg1 / Lag(LinWgtAvg2) Ratio

Abbreviation: LinWgtAvg1/Lag(LinWgtAvg2) Ratio
Category: Advanced Linearly Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg1 Periods	Int >= 1	5
Lag Amount	Int >= 1	5
LinWgtAvg2 Periods	Int >= 1	10

Calculation:

LinWgtAvg(X, n1) / Lag(LinWgtAvg(X, n2), L)

where
X = Time Series
n1 = LinWgtAvg1 Periods
L = Lag Amount
n2 = LinWgtAvg2 Periods

LinWgtAvg represents Linearly Weighted Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the ratio of a moving average to a different sized lagged moving average.

Linearly Weighted: LinWgtAvg / Lag(LinWgtAvg) Ratio

Abbreviation: LinWgtAvg/Lag(LinWgtAvg) Ratio
Category: Advanced Linearly Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg Periods	Int >= 1	5
Lag Amount	Int >= 1	5

Calculation:

LinWgtAvg(X, n) / Lag(LinWgtAvg(X, n), L)

where
X = Time Series
n = LinWgtAvg1 Periods
L = Lag Amount

LinWgtAvg represents Linearly Weighted Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the ratio of a moving average to the same sized lagged moving average.

Volume Weighted: Avg(VolWgtAvg1 - VolWgtAvg2)

Abbreviation: Avg(VolWgtAvg1-VolWgtAvg2)
Category: Advanced Volume Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Volume		Volume
Avg Periods	Int >= 1	5
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

Avg((VolWgtAvg(Time Series, Volume, n2) - VolWgtAvg(Time Series, Volume, n3)), n1)

where
n1 = Avg Periods
n2 = VolWgtAvg1 Periods
n3 = VolWgtAvg2 Periods

Avg represents Simple Moving Average
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in price by calculating the simple moving average of the difference between two different sized volume weighted moving averages.

Volume Weighted: Avg(VolWgtAvg - Lag(VolWgtAvg))

Abbreviation: Avg(VolWgtAvg-Lag(VolWgtAvg))
Category: Advanced Volume Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Volume		Volume
Avg Periods	Int >= 1	5
VolWgtAvg Periods	Int >= 1	5
Lag Amount	Int >= 1	5

Calculation:

Avg((VolWgtAvg(X, V, n) - Lag(VolWgtAvg(X, V, n), L)), A)

where
X = Time Series
V = Volume
A = Avg Periods
n = VolWgtAvg Periods
L = Lag Amount

Avg represents Simple Moving Average
VolWgtAvg represents Volume Weighted Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the moving average of the difference between a volume weighted moving average and the same sized lagged volume weighted moving average.

Volume Weighted: Avg(VolWgtAvg1 / VolWgtAvg2 Ratio)

Abbreviation: Avg(VolWgtAvg1/VolWgtAvg2 Ratio)
Category: Advanced Volume Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Volume		Volume
Avg Periods	Int >= 1	5
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

Avg((VolWgtAvg(Time Series, Volume, n2) / VolWgtAvg(Time Series, Volume, n3)), n1)

w here
n1 = Avg Periods
n2 = VolWgtAvg1 Periods
n3 = VolWgtAvg2 Periods

Avg represents Simple Moving Average
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in price by calculating the simple moving average of the ratio of tw o different sized volume w eighted moving averages.

Volume Weighted: Avg(VolWgtAvg / Lag(VolWgtAvg) Ratio)

Abbreviation: Avg(VolWgtAvg/Lag(VolWgtAvg) Ratio)
Category: Advanced Volume Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Volume		Volume
Avg Periods	Int >= 1	5
VolWgtAvg Periods	Int >= 1	5
Lag Amount	Int >= 1	5

Calculation:

Avg((VolWgtAvg(X, V, n) / Lag(VolWgtAvg(X, V, n), L)), A)

where
X = Time Series
V = Volume
A = Avg Periods
n = VolWgtAvg Periods
L = Lag Amount

Avg represents Simple Moving Average
VolWgtAvg represents Volume Weighted Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the moving average of the ratio of a volume weighted moving average to the same sized lagged volume weighted moving average.

Volume Weighted: VolWgtAvg1 - Lag(VolWgtAvg2)

Abbreviation: VolWgtAvg1-Lag(VolWgtAvg2)
Category: Advanced Volume Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
Lag Amount	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(Time Series, Volume, n1) - Lag(VolWgtAvg(Time Series, Volume, n2), L)

where
n1 = VolWgtAvg1 Periods
L = Lag Amount
n2 = VolWgtAvg2 Periods

Lag represents Lag
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in price by calculating the difference between a volume weighted moving average and a different sized lagged volume weighted moving average.

Volume Weighted: VolWgtAvg - Lag(VolWgtAvg)

Abbreviation: VolWgtAvg-Lag(VolWgtAvg)
Category: Advanced Volume Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Volume		Volume
VolWgtAvg Periods	Int >= 1	5
Lag Amount	Int >= 1	5

Calculation:

VolWgtAvg(X, V, n) - Lag(VolWgtAvg(X, V, n), L)

where
X = Time Series
V = Volume
n = VolWgtAvg Periods
L = Lag Amount

VolWgtAvg represents Volume Weighted Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the difference between a volume weighted moving average and the same sized lagged volume weighted moving average.

Volume Weighted: VolWgtAvg1 - VolWgtAvg2

Abbreviation: VolWgtAvg1-VolWgtAvg2

Category: Advanced Volume Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(Time Series, Volume, n1) - VolWgtAvg(Time Series, Volume, n2)

where

n1 = VolWgtAvg1 Periods

n2 = VolWgtAvg2 Periods

VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in price by calculating the difference between a volume weighted moving average and a different sized volume weighted moving average.

Volume Weighted: VolWgtAvg Offset

Abbreviation: VolWgtAvg Offset
Category: Advanced Volume Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

X - VolWgtAvg(X, V, n)

where
X = Time Series
V = Volume
n = VolWgtAvg Periods

VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by calculating the difference between the current time series value and the volume weighted moving average of the time series.

Volume Weighted: VolWgtAvg Ratio

Abbreviation: VolWgtAvg Ratio

Category: Advanced Volume Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

X / VolWgtAvg(X, V, n)

where

X = Time Series

V = Volume

n = VolWgtAvg Periods

VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by dividing the current time series value by the volume weighted moving average of the time series.

Volume Weighted: Envelope High

Abbreviation: VolWgtAvg Envelope High
Category: Advanced Volume Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Volume		Volume
VolWgtAvg Periods	Int >= 1	5
Envelope Fraction	Real > 0.0	0.25

Calculation:

VolWgtAvg(Time Series, Volume, n) * (1 + Envelope Fraction)

where
n = VolWgtAvg Periods

VolWgtAvg represents Volume Weighted Moving Average

Discussion:

Provides a band a certain fraction above the volume weighted moving average of price.

Volume Weighted: Envelope Low

Abbreviation: VolWgtAvg Envelope Low
Category: Advanced Volume Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Volume		Volume
VolWgtAvg Periods	Int >= 1	5
Envelope Fraction	Real > 0.0	0.25

Calculation:

VolWgtAvg(Time Series, Volume, n) * (1 - Envelope Fraction)

where
n = VolWgtAvg Periods

VolWgtAvg represents Volume Weighted Moving Average

Discussion:

Provides a band a certain fraction below the volume weighted moving average of price.

Volume Weighted: Lag(VolWgtAvg)

Abbreviation: Lag(VolWgtAvg)
Category: Advanced Volume Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Volume		Volume
Lag Amount	Int >= 1	5
VolWgtAvg Periods	Int >= 1	5

Calculation:

Lag(VolWgtAvg(Time Series, Volume, n), L)

where
n = VolWgtAvg Periods
L = Lag Amount

Lag represents Lag
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator provides a lagged smoothing of price by calculating the lag of a volume weighted moving average of price.

Volume Weighted: VolWgtAvg1 / VolWgtAvg2 Ratio

Abbreviation: VolWgtAvg1/VolWgtAvg2 Ratio
Category: Advanced Volume Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(Time Series, Volume, n1) / VolWgtAvg(Time Series, Volume, n2)

where
n1 = VolWgtAvg1 Periods
n2 = VolWgtAvg2 Periods

VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in price by calculating the ratio of a volume weighted moving average to a different sized volume weighted moving average.

Volume Weighted: VolWgtAvg1 / Lag(VolWgtAvg2) Ratio

Abbreviation: VolWgtAvg1/Lag(VolWgtAvg2) Ratio
Category: Advanced Volume Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
Lag Amount	Int >= 1	5
VolWgtAvg3 Periods	Int >= 1	10

Calculation:

VolWgtAvg(Time Series, Volume, n1) / Lag(VolWgtAvg(Time Series, Volume, n2), L)

where
n1 = VolWgtAvg1 Periods
L = Lag Amount
n2 = VolWgtAvg2 Periods

Lag represents Lag
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in price by calculating the ratio of a volume weighted moving average to a different sized lagged volume weighted moving average.

Volume Weighted: VolWgtAvg / Lag(VolWgtAvg) Ratio

Abbreviation: VolWgtAvg/Lag(VolWgtAvg) Ratio
Category: Advanced Volume Weighted Moving Average

Input Parameters:

Name	Range	Default
Time Series		Close
Volume		Volume
VolWgtAvg Periods	Int >= 1	5
Lag Amount	Int >= 1	5

Calculation:

VolWgtAvg(X, V, n) / Lag(VolWgtAvg(X, V, n), L)

where
X = Time Series
V = Volume
n = VolWgtAvg Periods
L = Lag Amount

VolWgtAvg represents Volume Weighted Moving Average
Lag represents Lag

Discussion:

This indicator attempts to quantify movements in a time series by calculating the ratio of a volume weighted moving average to the same sized lagged volume weighted moving average.

Momentum

Abbreviation: Momentum
Category: Change

Input Parameters:

Name	Range	Default
Time Series		Close
Periods	Int >= 1	5

Calculation:

(current Time Series value) - (Time Series value n periods ago)

where
n = Periods Back

Discussion:

Computes the change between the current time series value and the time series value n periods ago.

Rate of Change

Abbreviation: ROC
Category: Change

Input Parameters:

Name	Range	Default
Time Series		Close
Periods	Int >= 1	10

Calculation:

Current X value / X value n periods ago

where
X = Time Series
n = Periods

Discussion:

Computes the rate of change between the current time series value and the time series value n periods ago. Note that this is the rate of change definition commonly used by technical analysts. The scientific rate of change is computed by the velocity indicator.

Rate of Change Percent

Abbreviation: ROC%
Category: Change

Input Parameters:

Name	Range	Default
Time Series		Close
Periods	Int >= 1	10

Calculation:

100 * Current X value / X value n periods ago

where
X = Time Series
n = Periods

Discussion:

Computes the percent rate of change between the current time series value and the time series value n periods ago. Note that this is the percent rate of change definition commonly used by technical analysts. The scientific percent rate of change can be computed by multiplying the velocity indicator by 100.

Percent Change

Abbreviation: %Change
Category: Change

Input Parameters:

Name	Range	Default
Time Series		Close
Periods	Int >= 1	10

Calculation:

100 * (Current X value - X value n periods ago) / X value n periods ago

where
X = Time Series
n = Periods

Discussion:

Computes the percent change between the current time series value and the time series value n periods ago.

Velocity

Abbreviation: Velocity
Category: Change

Input Parameters:

Name	Range	Default
Time Series		Close
Periods	Int >= 1	10

Calculation:

(Current X value - X value n periods ago) / n

where
X = Time Series
n = Periods

Discussion:

Computes the slope of the line fitted between the current time series value and the time series value n periods ago.

Acceleration

Abbreviation: Acceleration
Category: Change

Input Parameters:

Name	Range	Default
Time Series		Close
Periods	Int >= 1	10

Calculation:

(Current X value - X value n periods ago) / n

where
X = Velocity(Time Series, Periods)
n = Periods

Velocity represents Velocity

Discussion:

Computes the slope of the line between the current time series slope and the time series slope n periods ago.

Average Negative Momentum

Abbreviation: AvgNegMom
Category: Advanced Change

Input Parameters:

Name	Range	Default
Time Series		Close
Avg Periods	Int >= 1	10
Momentum Periods	Int >= 1	1

Calculation:

Average of Negative Momentum(X, M) over the last n periods

where
X = Time Series
n = Avg Periods
M = Momentum Periods

Momenturm represents Momentum

Discussion:

Provides the average magnitude of downward changes over the last n periods.

Average Positive Momentum

Abbreviation: AvgPosMom
Category: Advanced Change

Input Parameters:

Name	Range	Default
Time Series		Close
Avg Periods	Int >= 1	10
Momentum Periods	Int >= 1	1

Calculation:

Average of Positive Momentum(X, M) over the last n periods

w here
X = Time Series
n = Avg Periods
M = Momentum Periods

Momenturm represents Momentum

Discussion:

Provides the average magnitude of upw ard changes over the last n periods.

Minimum Momentum

Abbreviation: MinMom
Category: Advanced Change

Input Parameters:

Name	Range	Default
Time Series		Close
Min Periods	Int >= 1	10
Momentum Periods	Int >= 1	1

Calculation:

Minimum Momentum(X, M) over the last n periods

w here
X = Time Series
n = Min Periods
M = Momentum Periods

Momenturm represents Momentum

Discussion:

Provides the largest dow nw ard change over the last n periods.

Maximum Momentum

Abbreviation: MaxMom
Category: Advanced Change

Input Parameters:

Name	Range	Default
Time Series		Close
Max Periods	Int >= 1	10
Momentum Periods	Int >= 1	1

Calculation:

Maximum Momentum(X, M) over the last n periods

w here
X = Time Series
n = Min Periods
M = Momentum Periods

Momenturm represents Momentum

Discussion:

Provides the largest upw ard change over the last n periods.

Number Negative Momentum

Abbreviation: NumNegMom
Category: Advanced Change

Input Parameters:

Name	Range	Default
Time Series		Close
Count Periods	Int >= 1	10
Momentum Periods	Int >= 1	1

Calculation:

Number of Negative Momentum(X, M) over the last n periods

where
X = Time Series
n = Count Periods
M = Momentum Periods

Momenturm represents Momentum

Discussion:

Provides the number of downward changes over the last n periods.

Number Positive Momentum

Abbreviation: NumPosMom
Category: Advanced Change

Input Parameters:

Name	Range	Default
Time Series		Close
Count Periods	Int >= 1	10
Momentum Periods	Int >= 1	1

Calculation:

Number of Positive Momentum(X, M) over the last n periods

where
X = Time Series
n = Count Periods
M = Momentum Periods

Momenturm represents Momentum

Discussion:

Provides the number of upward changes over the last n periods.

Number Positive Momentum - Number Negatvie Momentum

Abbreviation: NumPosNegMomDiff
Category: Advanced Change

Input Parameters:

Name	Range	Default
Time Series		Close
Count Periods	Int >= 1	10
Momentum Periods	Int >= 1	1

Calculation:

NumPosMom(X, n, M) - NumNegMom (X, n, M)

where
X = Time Series
n = Count Periods
M = Momentum Periods

NumPosMom represents Number Positive Momentum
NumNegMom represents Number Negative Momentum

Discussion:

Provides a comparison between the number of upward changes to the number of downward changes over the last n periods.

Cumulative Negative Momentum

Abbreviation: CumNegMom
Category: Advanced Change

Input Parameters:

Name	Range	Default
Time Series		Close
Cumulative Periods	Int >= 1	10
Momentum Periods	Int >= 1	1

Calculation:

Cumulative of Negative Momentum(X, M) over the last n periods

w here
X = Time Series
n = Cumulative Periods
M = Momentum Periods

Momenturm represents Momentum

Discussion:

Provides the sum of the dow nw ard changes over the last n periods.

Cumulative Positive Momentum

Abbreviation: CumPosMom
Category: Advanced Change

Input Parameters:

Name	Range	Default
Time Series		Close
Cumulative Periods	Int >= 1	10
Momentum Periods	Int >= 1	1

Calculation:

Cumulative of Positive Momentum(X, M) over the last n periods

where
X = Time Series
n = Cumulative Periods
M = Momentum Periods

Momenturm represents Momentum

Discussion:

Provides the sum of the upward changes over the last n periods.

Cumulative Absolute Momentum

Abbreviation: CumAbsMom
Category: Advanced Change

Input Parameters:

Name	Range	Default
Time Series		Close
Cumulative Periods	Int >= 1	10
Momentum Periods	Int >= 1	1

Calculation:

Cumulative of Abs(Momentum(X, M)) over the last n periods

where
X = Time Series
n = Cumulative Periods
M = Momentum Periods

Momenturm represents Momentum
Abs represents Absolute Value

Discussion:

Provides a measure of the total magnitude of changes (both upward and downward) over the last n periods.

Bollinger Band: %B

Abbreviation: BB %B

Category: Time Series

Input Parameters:

Name	Range	Default
Time Series		Close
Periods	Int >= 2	20
StndDev Multiplier	Real > 0.0	2

Calculation:

$$\frac{X - \text{BB Low}(X, n, mult)}{\text{BB High}(X, n, mult) - \text{BB Low}(X, n, mult)} * 100$$

where

X = Time Series

n = Periods

mult = StndDev Multiplier

BB Low represents Bollinger Band: Low

BB High represents Bollinger Band: High

Discussion:

Provides a measure of the price relative to the Bollinger high and low bands. Values above 100 indicate a price that is above the high band. Values below 0 indicate a price that is below the low band. Values between 0 and 100 indicate a price that is between the high and low bands.

Bollinger Band: Band Width Percent

Abbreviation: BB %Width
Category: Time Series

Input Parameters:

Name	Range	Default
Time Series		Close
Periods	Int >= 2	20
StndDev Multiplier	Real > 0.0	2

Calculation:

$$\frac{\text{BB High}(X, n, mult) - \text{BB Low}(X, n, mult)}{\text{Avg}(X, n)} * 100$$

where
X = Time Series
n = Periods
mult = StndDev Multiplier

BB Low represents Bollinger Band: Low
BB High represents Bollinger Band: High
Avg represents Simple Moving Average

Discussion:

Provides a measure of the price volatility relative to the underlying price magnitude. The sensitivity of this indicator varies widely depending upon the user's choice of moving average and standard deviation multiplier.

Bollinger Band: High

Abbreviation: BB High
Category: Time Series

Input Parameters:

Name	Range	Default
Time Series		Close
Periods	Int >= 2	20
StndDev Multiplier	Real > 0.0	2

Calculation:

Avg(X, n) + (mult * StndDev(X, n))

where
X = Time Series
n = Periods
mult = StndDev Multiplier

Avg represents Simple Moving Average
StndDev represents Standard Deviation

Discussion:

Provides a price band whose width varies with price volatility. Movement of price above this band is a warning of a possible upward trend. The sensitivity of this indicator varies widely depending upon the user's choice of moving average and standard deviation multiplier.

Bollinger Band: Low

Abbreviation: BB Low
Category: Time Series

Input Parameters:

Name	Range	Default
Time Series		Close
Periods	Int >= 2	20
StndDev Multiplier	Real > 0.0	2

Calculation:

Avg(X, n) - (mult * StndDev(X, n))

where
X = Time Series
n = Periods
mult = StndDev Multiplier

Avg represents Simple Moving Average
StndDev represents Standard Deviation

Discussion:

Provides a price band whose width varies with price volatility. Movement of price below this band is a warning of a possible downward trend. The sensitivity of this indicator varies widely depending upon the user's choice of moving average and standard deviation multiplier.

Spread

Abbreviation: Spread
Category: Time Series

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close

Calculation:

Time Series #1 - Time Series #2

Discussion:

Provides a quantitative comparison betw een the tw o time series by computing the difference betw een the tw o time series. Since a difference is used, the time series should have roughly the same range and magnitude of values.

Spread Percent

Abbreviation: Spread%
Category: Time Series

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close

Calculation:

100 * (Time Series #1 - Time Series #2) / Time Series #1

Discussion:

Provides a quantitative comparison betw een the tw o time series by computing the percent difference betw een the tw o time series. Since a percent difference is used, the time series should have roughly the same range and magnitude of values.

Relative Strength

Abbreviation: Relative Strength
Category: Time Series

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close

Calculation:

Time Series #1 / Time Series #2

Discussion:

Provides a quantitative comparison betw een the tw o time series by computing the ratio of one time series to the other. Since a ratio is used, the time series need not have the same range or magnitude of values.

Simple Stochastic %D

Abbreviation: SimpleStoch%D
Category: Time Series

Input Parameters:

Name	Range	Default
Time Series		Close
Stochastic Periods	Int >= 2	5
Smoothing Periods	Int >= 1	5

Calculation:

Stoch %D(Time Series, Time Series, Time Series, Stochastic Periods, Smoothing Periods)

Stoch%D represents Stochastic %D

Discussion:

Provides a version of the Stochastic %D that operates on a single time series.

Simple Stochastic %K

Abbreviation: SimpleStoch%K
Category: Time Series

Input Parameters:

Name	Range	Default
Time Series		Close
Stochastic Periods	Int >= 2	5

Calculation:

Stoch %K(Time Series, Time Series, Time Series, Stochastic Periods)

Stoch%K represents Stochastic %K

Discussion:

Provides a version of the Stochastic %K that operates on a single time series.

Simple Stochastic Slow %D

Abbreviation: SimpleStochSlow %D
Category: Time Series

Input Parameters:

Name	Range	Default
Time Series		Close
Stochastic Periods	Int >= 2	5
Smoothing Periods #1	Int >= 1	5
Smoothing Periods #2	Int >= 1	10

Calculation:

StochSlow %D(X, X, X, Stoch Periods, Smooth #1, Smooth #2)

where
X = Time Series
Stoch Periods = Stochastic Periods
Smooth #1 = Smoothing Periods #1
Smooth #2 = Smoothing Periods #2

StochSlow %D represents Stochastic Slow %D

Discussion:

Provides a version of the Stochastic Slow %D that operates on a single time series.

Efficiency

Abbreviation: Efficiency
Category: Time Series

Input Parameters:

Name	Range	Default
Time Series		Close
Periods	Int >= 1	5

Calculation:

Efficiency Ratio = direction / volatility

where
direction = Momentum(Time Series, Periods)
volatility = $\sum$ Absolute Value(Momentum(Lag(Time Series, n), 1), where n = 0 to Periods – 1

$\sum$ represents the sum of values across a range of values (in this case n)
Absolute Value represents Absolute Value
Momentum represents Momentum
Lag represents Lag

Discussion:

Provides a ratio of direction to volatility, which shows how efficiently an issue moves from one price to another over a period of time.

Accumulation/Distribution: Sum

Abbreviation: AccumDist
Category: Price Momentum Indicators

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Summation Periods	Int >= 1	5

Calculation:

Sum X over the last n periods

where
X = AccumDist: Raw (High Price, Low Price, Closing Price)
n = Summation Periods

AccumDist: Raw represents Accumulation/Distribution: Raw

Discussion:

Provides a running total of Accumulation/Distribution over the last n periods.

Average Directional Movement (ADX)

Abbreviation: ADX
Category: Price Momentum Indicators

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
DMI Periods	Int >= 1	10
Avg Periods	Int >= 1	5

Calculation:

ExpAvg(X, Avg Periods)

w here
X = DMI(High Price, Low Price, Closing Price, DMI Periods)

DMI represents Directional Movement Index (DMI)
ExpAvg represents Exponential Moving Average

Discussion:

ADX measures the strength of a market trend. A high ADX value indicates a strong market trend, w hile a low ADX value indicates a w eak market trend.

In general, this indicator is simply smooths the Directional Movement Index indicator by calculating its moving average. Since it uses an exponential moving average (w hich gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Commodity Channel Index (CCI)

Abbreviation: CCI
Category: Price Momentum Indicators

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Periods	Int >= 2	5
Deviation Multiplier	Real > 0.0	0.015

Calculation:

$$\frac{\text{MP} - \text{Avg(MP, n)}}{\text{Deviation Multiplier} * \text{MP Deviation}}$$

where
MP Deviation = (Sum over n periods of Abs(MP[-n] - Avg(MP[0], n)) / n
MP = Mean Price = (High Price + Low Price + Close Price) / 3
n = Periods

MP[-n] represents the MP value n days ago. When calculating MP Deviation n goes from 0 to n - 1.

Avg represents Simple Moving Average
Abs represents Absolute Value

Discussion:

Provides a measurement of the deviation of the current mean price from the average mean price relative to the deviation of all the previous n mean prices from the same mean price average. Upward market movement is indicated by positive values, while downward movement is indicated by negative values. The larger the positive or negative value, the stronger the upward or downward movement. The actual magnitude of values will vary depending upon the user's choice of deviation multiplier.

Directional Movement Index (DMI)

Abbreviation: DMI
Category: Price Momentum Indicators

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
ExpAvg Periods	Int >= 1	10

Calculation:

DMI = DX * 100

w here
DX = Directional Movement = Abs(PDI - MDI) / (PDI + MDI)
PDI = Plus Directional Indicator = SPDM / STR
MDI = Minus Directional Indicator = SMDM / STR

SPDM = Smoothed PDM = ExpAvg(PDM, ExpAvg Periods)
SMDM = Smoothed MDM = ExpAvg(MDM, ExpAvg Periods)
STR = Smoothed TR = ExpAvg(TR, ExpAvg Periods)

TR = True Range = Max3(Abs(High-Low), Abs(High-Previous Close), Abs(Low - Previous Close))

PDM = Plus Directional Movement = High - Previous High
MDM = Minus Directional Movement = Previous Low - Low
If PDM > MDM then MDM = 0
If PDM < MDM then PDM = 0
If Inside Day then PDM = 0 and MDM = 0

Inside Day = if (High - Previous High < 0) and (Low - Previous Low > 0) then True else False

Max3 represents Max3
Abs represents Absolute Value
ExpAvg represents Exponential Moving Average

Discussion:

The Directional Movement Index provides a means of distinguishing betw een a market w ith significant trending and a market w ith only sidew ays movement. Mathematically, the Directional Movement Index ranges betw een values of 0 and 100; how ever, in practice it usually does not reach either extreme. The closer the index is to 100, the stronger the trending characteristics of the market. The closer the index is to 0, the stronger the sidew ays characteristics of the market.

MACD

Abbreviation: MACD
Category: Price Momentum Indicators

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg1 Periods	Int >= 1	12
ExpAvg2 Periods	Int >= 1	26

Calculation:

ExpAvg(X, n1) - ExpAvg(X, n2)

where
X = Time Series
n1 = ExpAvg1 Periods
n2 = ExpAvg2 Periods

ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by calculating the difference between a moving average and a different sized moving average.

MACD Signal

Abbreviation: MACD Signal
Category: Price Momentum Indicators

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg1 Periods	Int >= 1	9
ExpAvg2 Periods	Int >= 1	12
ExpAvg3 Periods	Int >= 1	26

Calculation:

ExpAvg((ExpAvg(X, n2) - ExpAvg(X, n3)), n1)

where
X = Time Series
n1 = ExpAvg1 Periods
n2 = ExpAvg2 Periods
n3 = ExpAvg3 Periods

ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in a time series by calculating the moving average of the difference between two different sized moving averages.

Relative Strength Index (RSI)

Abbreviation: RSI
Category: Price Momentum Indicators

Input Parameters:

Name	Range	Default
Closing Price		Close
Periods	Int >= 1	5

Calculation:

100 - 100 / (1 + RS)

w here
RS = Smoothed Increases / Smoothed Decreases

On nth period
    Smoothed Increases = Avg(Gain, n)
    Smoothed Decreases = Avg(Loss, n)
Every period thereafter
    Smoothed Increases = (Previous Smoothed Increases * (n-1) + Gain) / n
    Smoothed Decreases = (Previous Smoothed Decreases * (n-1) + Loss) / n

If (Close > Previous Close) then
    Gain = Close - Previous Close
    Loss = 0
else if (Close < Previous Close) then
    Gain = 0
    Loss = Previous Close - Close
else
    Gain = 0
    Loss = 0

n = Periods

Avg represents Simple Moving Average

Discussion:

The Relative Strength Index measures price momentum. Mathematically, the Relative Strength Index ranges betw een values of 0 and 100. The closer the index is to 100, the stronger the indication of an overbought market. The closer the index is to 0, the stronger the indication of an oversold market. In general, index values above 50 indicate a possible uptrend, w hile index values below 50 indicate a possible dow ntrend.

Stochastic %D

Abbreviation: Stoch%D
Category: Price Momentum Indicators

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic periods	Int >= 1	5
Smoothing Periods	Int >= 1	5

Calculation:

On nth period
    Stochastic %D = Avg(Stoch%K(H, L, C, S), n)
Every period thereafter
    Stochastic %D = (Previous Stochastic %D * (n-1) + Stoch%K(H, L, C, S)) / n

n = Smoothing periods

Stoch%K represents Stochastic %K
Avg represents Simple Moving Average

Discussion:

Provides a smoothed version of the Stochastic %K.

Stochastic %K

Abbreviation: Stoch%K
Category: Price Momentum Indicators

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic periods	Int >= 1	5

Calculation:

100 * (Closing Price - PriceLow (Low , n)) / (PriceHigh(High, n) - PriceLow (Low , n))

where
n = Stochastic periods

PriceHigh represents Price High
PriceLow represents Price Low

Discussion:

The Stochastic %K measures price momentum. Mathematically, %K ranges between values of 0 and 100. The closer %K is to 100, the stronger an indication of an uptrending market. The closer %K is to 0, the stronger an indication of a downtrending market.

Stochastic Slow %D

Abbreviation: StochSlow %D
Category: Price Momentum Indicators

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic periods	Int >= 1	5
Smoothing Periods #1	Int >= 1	5
Smoothing Periods #2	Int >= 1	10

Calculation:

On nth period:
Stochastic Slow %D = Avg(Stoch%D(H, L, C, S, n1), n2)
Every period thereafter:
Stochastic Slow %D = (Previous Stochastic Slow %D * (n2-1) + Stoch%D(H, L, C, S, n1)) / n2

H = High Price
L = Low Price
C = Closing Price
S = Stochastic Periods
n1 = Smoothing Periods #1
n2 = Smoothing periods #2

Stoch%D represents Stochastic %D

Discussion:

Provides a doubly smoothed version of the Stochastic %D.

Williams' %R

Abbreviation: %R

Category: Price Momentum Indicators

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic Periods	Int >= 1	5

Calculation:

100 * (H - Closing Price) / (H - L)

where

H = PriceHigh(High Price, n)

L = PriceLow (Low Price, n)

n = Stochastic periods

PriceHigh represents Price High

PriceLow represents Price Low

Discussion:

The Williams' %R measures price momentum. Mathematically, %R ranges between values of 0 and 100. The closer %R is to 0, the stronger an indication of an uptrending market. The closer %R is to 100, the stronger an indication of a downtrending market.

In some other software the Williams %R may range from 0 to -100. To make the conversion in NeuroShell Trader, simply apply the Negative indicator (in the arithmetic category) to your Williams %R.

Accumulation/Distribution: Simple MovAvg

Abbreviation: AccumDist Avg
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = AccumDist: Raw (High Price, Low Price, Closing Price)

AccumDist: Raw represents Accumulation/Distribution: Raw
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Accumulation/Distribution indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Accumulation/Distribution: Simple MovAvg Difference

Abbreviation: AccumDist Avg Diff
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = AccumDist: Raw (High Price, Low Price, Closing Price)

AccumDist: Raw represents Accumulation/Distribution: Raw
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Accumulation/Distribution indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Accumulation/Distribution: Exponential MovAvg

Abbreviation: AccumDist ExpAvg
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = AccumDist: Raw (High Price, Low Price, Closing Price)

AccumDist: Raw represents Accumulation/Distribution: Raw
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Accumulation/Distribution indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Accumulation/Distribution: Exponential MovAvg Difference

Abbreviation: AccumDist ExpAvg Diff
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = AccumDist: Raw (High Price, Low Price, Closing Price)

AccumDist: Raw represents Accumulation/Distribution: Raw
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Accumulation/Distribution indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Accumulation/Distribution: Volume Weighted MovAvg

Abbreviation: AccumDist VolWgtAvg
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where
X = AccumDist: Raw (High Price, Low Price, Closing Price)

AccumDist: Raw represents Accumulation/Distribution: Raw
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Accumulation/Distribution indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Accumulation/Distribution: Volume Weighted MovAvg Difference

Abbreviation: AccumDist VolWgtAvg Diff
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

where
X = AccumDist: Raw (High Price, Low Price, Closing Price)

AccumDist: Raw represents Accumulation/Distribution: Raw
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Accumulation/Distribution indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Commodity Channel Index: Simple MovAvg

Abbreviation: CCI Avg
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
CCI Periods	Int >= 2	5
Deviation Multiplier	Real > 0.0	0.015
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = CCI(High Price, Low Price, Closing Price, CCI Periods, Deviation Multiplier)

CCI represents Commodity Channel Index (CCI)
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Commodity Channel Index indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Commodity Channel Index: Simple MovAvg Difference

Abbreviation: CCI Avg Diff

Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
CCI Periods	Int >= 2	5
Deviation Multiplier	Real > 0.0	0.015
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where

X = CCI(High Price, Low Price, Closing Price, CCI Periods, Deviation Multiplier)

CCI represents Commodity Channel Index (CCI)

Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Commodity Channel Index indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Commodity Channel Index: Exponential MovAvg

Abbreviation: CCI ExpAvg
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
CCI Periods	Int >= 2	5
Deviation Multiplier	Real > 0.0	0.015
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = CCI(High Price, Low Price, Closing Price, CCI Periods, Deviation Multiplier)

CCI represents Commodity Channel Index (CCI)
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Commodity Channel Index indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Commodity Channel Index: Exponential MovAvg Difference

Abbreviation: CCI ExpAvg Diff
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
CCI Periods	Int >= 2	5
Deviation Multiplier	Real > 0.0	0.015
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = CCI(High Price, Low Price, Closing Price, CCI Periods, Deviation Multiplier)

CCI represents Commodity Channel Index (CCI)
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Commodity Channel Index indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Commodity Channel Index: Volume Weighted MovAvg

Abbreviation: CCI VolWgtAvg
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
CCI Periods	Int >= 2	5
Deviation Multiplier	Real > 0.0	0.015
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where
X = CCI(High Price, Low Price, Closing Price, CCI Periods, Deviation Multiplier)

CCI represents Commodity Channel Index (CCI)
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Commodity Channel Index indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Commodity Channel Index: Volume Weighted MovAvg Difference

Abbreviation: CCI VolWgtAvg Diff
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
CCI Periods	Int >= 2	5
Deviation Multiplier	Real > 0.0	0.015
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

w here
X = CCI(High Price, Low Price, Closing Price, CCI Periods, Deviation Multiplier)

CCI represents Commodity Channel Index (CCI)
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Commodity Channel Index indicator by calculating the difference betw een tw o moving averages. Since it uses volume w eighted moving averages (w hich give more importance to those periods w ith higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement betw een periods of relatively higher volume than betw een periods of relatively low er volume.

Directional Movement Index: Simple MovAvg

Abbreviation: DMI Avg
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
DMI Periods	Int >= 1	10
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = DMI(High Price, Low Price, Closing Price, DMI Periods)

DMI represents Directional Movement Index (DMI)
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Directional Movement Index indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Directional Movement Index: Simple MovAvg Difference

Abbreviation: DMI Avg Diff

Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
DMI Periods	Int >= 1	10
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

w here

X = DMI(High Price, Low Price, Closing Price, DMI Periods)

DMI represents Directional Movement Index (DMI)

Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Directional Movement Index indicator by calculating the difference betw een tw o moving averages. Since it uses simple moving averages (w hich give equal importance to all the periods w ithin the moving average’s time frame), the indicator treats all periods alike, and does not focus more upon movement betw een recent or relatively higher volume periods as do the exponential and volume w eighted variants.

Directional Movement Index: Exponential MovAvg Difference

Abbreviation: DMI ExpAvg Diff

Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
DMI Periods	Int >= 1	10
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where

X = DMI(High Price, Low Price, Closing Price, DMI Periods)

DMI represents Directional Movement Index (DMI)

ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Directional Movement Index indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Directional Movement Index: Volume Weighted MovAvg

Abbreviation: DMI VolWgtAvg

Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
DMI Periods	Int >= 1	10
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where

X = DMI(High Price, Low Price, Closing Price, DMI Periods)

DMI represents Directional Movement Index (DMI)

VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Directional Movement Index indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Directional Movement Index: Volume Weighted MovAvg Difference

Abbreviation: DMI VolWgtAvg Diff
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
DMI Periods	Int >= 1	10
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

where
X = DMI(High Price, Low Price, Closing Price, DMI Periods)

DMI represents Directional Movement Index (DMI)
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Directional Movement Index indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Relative Strength Index: Simple MovAvg

Abbreviation: RSI Avg

Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
RSI Periods	Int >= 1	5
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where

X = RSI(Closing Price, RSI Periods)

RSI represents Relative Strength Index (RSI)

Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Relative Strength Index indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Relative Strength Index: Simple MovAvg Difference

Abbreviation: RSI Avg Diff

Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
RSI Periods	Int >= 1	5
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where

X = RSI(Closing Price, RSI Periods)

RSI represents Relative Strength Index (RSI)

Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Relative Strength Index indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Relative Strength Index: Exponential MovAvg

Abbreviation: RSI ExpAvg

Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
RSI Periods	Int >= 1	5
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

w here

X = RSI(Closing Price, RSI Periods)

RSI represents Relative Strength Index (RSI)

ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Relative Strength Index indicator by calculating its moving average. Since it uses an exponential moving average (w hich gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Relative Strength Index: Exponential MovAvg Difference

Abbreviation: RSI ExpAvg Diff

Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
RSI Periods	Int >= 1	5
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where

X = RSI(Closing Price, RSI Periods)

RSI represents Relative Strength Index (RSI)

ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Relative Strength Index indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Relative Strength Index: Volume Weighted MovAvg

Abbreviation: RSI VolWgtAvg
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
RSI Periods	Int >= 1	5
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where
X = RSI(Closing Price, RSI Periods)

RSI represents Relative Strength Index (RSI)
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Relative Strength Index indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Relative Strength Index: Volume Weighted MovAvg Difference

Abbreviation: RSI VolWgtAvg Diff

Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
RSI Periods	Int >= 1	5
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

where

X = RSI(Closing Price, RSI Periods)

RSI represents Relative Strength Index (RSI)

VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Relative Strength Index indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Stochastic %K: Simple MovAvg

Abbreviation: %K Avg
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Low
Stochastic Periods	Int >= 1	5
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = Stoch%K(High Price, Low Price, Closing Price, Stochastic Periods)

Stoch%K represents Stochastic %K
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Stochastic %K indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Stochastic %K: Simple MovAvg Difference

Abbreviation: %K Avg Diff

Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic Periods	Int >= 1	5
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where

X = Stoch%K(High Price, Low Price, Closing Price, Stochastic Periods)

Stoch%K represents Stochastic %K

Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Stochastic %K indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Stochastic %K: Exponential MovAvg

Abbreviation: %K ExpAvg
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic Periods	Int >= 1	5
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = Stoch%K(High Price, Low Price, Closing Price, Stochastic Periods)

Stoch%K represents Stochastic %K
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Stochastic %K indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Stochastic %K: Exponential MovAvg Difference

Abbreviation: %K ExpAvg Diff

Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic Periods	Int >= 1	5
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where

X = Stoch%K(High Price, Low Price, Closing Price, Stochastic Periods)

Stoch%K represents Stochastic %K

ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Stochastic %K indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Stochastic %K: Volume Weighted MovAvg

Abbreviation: %K VolWgtAvg
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic Periods	Int >= 1	5
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where
X = Stoch%K(High Price, Low Price, Closing Price, Stochastic Periods)

Stoch%K represents Stochastic %K
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Stochastic %K indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Stochastic %K: Volume Weighted MovAvg Difference

Abbreviation: %K VolWgtAvg Diff

Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic Periods	Int >= 1	5
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

where

X = Stoch%K(High Price, Low Price, Closing Price, Stochastic Periods)

Stoch%K represents Stochastic %K

VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Stochastic %K indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Williams' %R: Simple MovAvg

Abbreviation: %R Avg

Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic Periods	Int >= 1	5
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where

X = %R(High Price, Low Price, Closing Price, Stochastic Periods)

%R represents Williams' %R

Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Williams' %R indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Williams' %R: Simple MovAvg Difference

Abbreviation: %R Avg Diff
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic Periods	Int >= 1	5
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = %R(High Price, Low Price, Closing Price, Stochastic Periods)

%R represents Williams' %R
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Williams' %R indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Williams' %R: Exponential MovAvg

Abbreviation: %R ExpAvg
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic Periods	Int >= 1	5
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = %R(High Price, Low Price, Closing Price, Stochastic Periods)

%R represents Williams' %R
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Williams' %R indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Williams' %R: Exponential MovAvg Difference

Abbreviation: %R ExpAvg Diff
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic Periods	Int >= 1	5
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = %R(High Price, Low Price, Closing Price, Stochastic Periods)

%R represents Williams' %R
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Williams' %R indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Williams' %R: Volume Weighted MovAvg

Abbreviation: %R VolWgtAvg

Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic Periods	Int >= 1	5
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where

X = %R(High Price, Low Price, Closing Price, Stochastic Periods)

%R represents Williams' %R

VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Williams' %R indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Williams' %R: Volume Weighted MovAvg Difference

Abbreviation: %R VolWgtAvg Diff
Category: Price Momentum Indicators: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic Periods	Int >= 1	5
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

where
X = %R(High Price, Low Price, Closing Price, Stochastic Periods)

%R represents Williams' %R
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Williams' %R indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Arms Ease of Movement

Abbreviation: ArmsEaseMovement
Category: Volume

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Volume		Volume
Summation Periods	Int >= 1	5

Calculation:

Sum X over the last n periods

w here
X = ArmsEaseMovement: Raw (High Price, Low Price, Volume)
n = Summation Periods

ArmsEaseMovement: Raw represents Arms Ease of Movement: Raw

Discussion:

Provides a running total of the Arms Ease of Movement over the last n periods.

Negative Volume Index

Abbreviation: NegVolIndex
Category: Volume

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
Summation Periods	Int >= 1	5

Calculation:

Sum X over the last n periods

where
X = NegVolIndex: Raw (Closing Price, Volume)
n = Summation Periods

NegVolIndex: Raw represents Negative Volume Index: Raw

Discussion:

Provides a running total of the Negative Volume Index over the last n periods.

On Balance Volume

Abbreviation: OBV
Category: Volume

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
Summation Periods	Int >= 1	5

Calculation:

Sum X over the last n periods

where
X = OBV: Raw (Closing Price, Volume)
n = Summation Periods

OBV: Raw represents On Balance Volume: Raw

Discussion:

Provides a running total of On Balance Volume over the last n periods.

Positive Volume Index

Abbreviation: PosVolIndex
Category: Volume

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
Summation Periods	Int >= 1	5

Calculation:

Sum X over the last n periods

where
X = PosVolIndex: Raw (Closing Price, Volume)
n = Summation Periods

PosVolIndex: Raw represents Positive Volume Index: Raw

Discussion:

Provides a running total of the Positive Volume Index over the last n periods.

Volume Accumulation #1

Abbreviation: VolAccum#1
Category: Volume

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
Summation Periods	Int >= 1	5

Calculation:

Sum X over the last n periods

where
X = VolAccum#1: Raw (High Price, Low Price, Closing Price, Volume)
n = Summation Periods

VolAccum#1: Raw represents Volume Accumulation #1: Raw

Discussion:

Provides a running total of the Volume Accumulation #1: Raw over the last n periods.

Volume Accumulation #2

Abbreviation: VolAccum#2
Category: Volume

Input Parameters:

Name	Range	Default
High Price		
Low Price		
Closing Price		
Volume		
Summation Periods	Int >= 1	5

Calculation:

Sum X over the last n periods

where
X = VolAccum#2: Raw (High Price, Low Price, Closing Price, Volume)
n = Summation Periods

VolAccum#2: Raw represents Volume Accumulation #2: Raw
Discussion:

Provides a running total of the Volume Accumulation #2: Raw over the last n periods.

Williams' Variable Accumulation Distribution

Abbreviation: Williams' Variable Accumulation Distribution
Category: Volume

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
Summation Periods	Int >= 1	5

Calculation:

Sum X over the last n periods

where
X = Williams' Variable Accumulation Distribution: Raw (Opening Price, High Price, Low Price, Closing Price, Volume)
n = Summation Periods

Williams' Variable Accumulation Distribution: Raw represents Williams' Variable Accumulation Distribution: Raw

Discussion:

Provides a running total of the Williams' Variable Accumulation Distribution:Raw over the last n periods.

Volume Life Force

Abbreviation: VolLifeForce
Category: Volume

Input Parameters:

Name	Range	Default
Closing Price		
Volume		
Summation Periods	Int >= 1	5

Calculation:

Sum X over the last n periods

where
X = VolLifeForce: Raw (Closing Price, Volume)
n = Summation Periods

VolLifeForce: Raw represents Volume Life Force: Raw

Discussion:

Provides a running total of the Volume Life Force over the last n periods.

Volume Price Trend

Abbreviation: VolPriceTrend
Category: Volume

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
Summation Periods	Int >= 1	5

Calculation:

Sum X over the last n periods

w here
X = VolPriceTrend: Raw (Closing Price, Volume)
n = Summation Periods

VolPriceTrend: Raw represents Volume Price Trend: Raw (Money Flow Indicator)

Discussion:

Provides a running total of the Volume Price Trend over the last n periods.

Money Flow Index

Abbreviation: MFI
Category: Volume

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
Summation Periods	Int >= 1	5

Calculation:

100 – (100 / (1 + (PositiveMF(O,H,L,C,V, Periods) / NegativeMF(O,H,L,C,V, Periods))))

PositiveMF represents Positive Money Flow
NegativeMf represents Negative Money Flow

Discussion:

Provides a volume w eighted form of the Relative Strength Index (RSI). How ever the MFI uses an average of the days Open, High, Low , and Close instead of just one price stream. The MFI ranges betw een values of 0 and 100. The closer the index is to 100, the more positive the money flow . The closer the index is to 0, the more negative the money flow .

Positive Money Flow

Abbreviation: PositiveMF
Category: Volume

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
Summation Periods	Int >= 1	5

Calculation:

∑ Positive Money(n), w here n = 0 to Summation Periods - 1

w here

Positive Money(n) =
If (Lag((O + H + L + C), n) / 4 > Lag((O + H + L + C), n + 1) / 4) then
Lag(V * (O + H + L + C) / 4 , n)
else 0

w here
O = Open
H = High
L = Low
C = Close
V = Volume

∑ represents the sum of values across a range of values (in this case n)
Lag represents Lag

Discussion:

Provides a measure of how much money has come into the market on up days in the last Summation Periods.

Negative Money Flow

Abbreviation: NegativeMF
Category: Volume

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
Summation Periods	Int >= 1	5

Calculation:

∑ Negative Money(n), w here n = 0 to Summation Periods - 1

w here

Negative Money(n) =
If (Lag((O + H + L + C), n) / 4 < Lag((O + H + L + C), n + 1) / 4) then
Lag(V * (O + H + L + C) / 4 , n)
else 0

w here
O = Open
H = High
L = Low
C = Close
V = Volume

∑ represents the sum of values across a range of values (in this case n)
Lag represents Lag

Discussion:

Provides a measure of how much money has left the market on dow n days in the last Summation Periods.

Resistance to Advances

Abbreviation: Resistance to Advances
Category: Volume

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
Summation Periods	Int >= 1	5

Calculation:

$$\frac{\sum \text{Positive Volume}(n), \text{ where } n = 0 \text{ to Summation Periods} - 1}{\sum \text{Positive Price Change}(n), \text{ where } n = 0 \text{ to Summation Periods} - 1}$$

where

Positive Volume(n) =
If (Lag(C, n) > Lag(C, n + 1) then Lag(V,n)
else 0
Positive Price Change(n) =
If (Lag(C, n) > Lag(C, n + 1) then Momentum(Lag(C,n),1)
else 0

where
C = Close
V = Volume

$\sum$ represents the sum of values across a range of values (in this case n)
Momentum represents Momentum
Lag represents Lag

Discussion:

Provides a measure of how much volume divided by price change there has been on positive days in the last Summation Periods.

Resistance to Declines

Abbreviation: Resistance to Declines
Category: Volume

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
Summation Periods	Int >= 1	5

Calculation:

$$\frac{\sum \text{Negative Volume(n), w here n = 0 to Summation Periods - 1}}{\sum \text{Negative Price Change(n), w here n = 0 to Summation Periods - 1}}$$

w here

Negative Volume(n) =
  If (Lag(C, n) < Lag(C, n + 1) then Lag(V,n)
  else 0
Negaive Price Change(n) =
  If (Lag(C, n) < Lag(C, n + 1) then Momentum(Lag(C,n),1)
  else 0

w here
C = Close
V = Volume

∑ represents the sum of values across a range of values (in this case n)
Momentum represents Momentum
Lag represents Lag

Discussion:

Provides a measure of how much volume divided by price change there has been on negative days in the last Summation Periods.

Arms Ease of Movement: Simple MovAvg

Abbreviation: ArmsEaseMovement Avg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Volume		Volume
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = ArmsEaseMovement: Raw (High Price, Low Price, Volume)

ArmsEaseMovement: Raw represents Arms Ease of Movement: Raw
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Arms Ease of Movement indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Arms Ease of Movement: Simple MovAvg Difference

Abbreviation: ArmsEaseMovement Avg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Volume		Volume
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = ArmsEaseMovement: Raw (High Price, Low Price, Volume)

ArmsEaseMovement: Raw represents Arms Ease of Movement: Raw
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Arms Ease of Movement indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Arms Ease of Movement: Exponential MovAvg

Abbreviation: ArmsEaseMovement ExpAvg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Volume		Volume
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = ArmsEaseMovement: Raw (High Price, Low Price, Volume)

ArmsEaseMovement: Raw represents Arms Ease of Movement: Raw
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Arms Ease of Movement indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Arms Ease of Movement: Exponential MovAvg Difference

Abbreviation: ArmsEaseMovement ExpAvg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Volume		Volume
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = ArmsEaseMovement: Raw (High Price, Low Price, Volume)

ArmsEaseMovement: Raw represents Arms Ease of Movement: Raw
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Arms Ease of Movement indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Arms Ease of Movement: Volume Weighted MovAvg

Abbreviation: ArmsEaseMovement VolWgtAvg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where
X = ArmsEaseMovement: Raw (High Price, Low Price, Volume)

ArmsEaseMovement: Raw represents Arms Ease of Movement: Raw
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Arms Ease of Movement indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Arms Ease of Movement: Volume Weighted MovAvg Difference

Abbreviation: ArmsEaseMovement VolWgtAvg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

where
X = ArmsEaseMovement: Raw (High Price, Low Price, Volume)

ArmsEaseMovement: Raw represents Arms Ease of Movement: Raw
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Arms Ease of Movement indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Negative Volume Index: Simple MovAvg

Abbreviation: NegVolIndex Avg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = NegVolIndex: Raw (Closing Price, Volume)

NegVolIndex: Raw represents Negative Volume Index: Raw
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Negative Volume Index indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Negative Volume Index: Simple MovAvg Difference

Abbreviation: NegVolIndex Avg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = NegVolIndex: Raw (Closing Price, Volume)

NegVolIndex: Raw represents Negative Volume Index: Raw
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Negative Volume Index indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Negative Volume Index: Exponential MovAvg

Abbreviation: NegVolIndex ExpAvg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
ExpAvg Periods	Int >=1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = NegVolIndex: Raw (Closing Price, Volume)

NegVolIndex: Raw represents Negative Volume Index: Raw
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Negative Volume Index indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Negative Volume Index: Exponential MovAvg Difference

Abbreviation: NegVolIndex ExpAvg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = NegVolIndex: Raw (Closing Price, Volume)

NegVolIndex: Raw represents Negative Volume Index: Raw
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Negative Volume Index indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Negative Volume Index: Volume Weighted MovAvg

Abbreviation: NegVolIndex VolWgtAvg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where
X = NegVolIndex: Raw (Closing Price, Volume)

NegVolIndex: Raw represents Negative Volume Index: Raw
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Negative Volume Index indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Negative Volume Index: Volume Weighted MovAvg Difference

Abbreviation: NegVolIndex VolWgtAvg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

where
X = NegVolIndex: Raw (Closing Price, Volume)

NegVolIndex: Raw represents Negative Volume Index: Raw
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Negative Volume Index indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

On Balance Volume: Simple MovAvg

Abbreviation: OBV Avg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = OBV: Raw (Closing Price, Volume)

OVB: Raw represents On Balance Volume: Raw
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the On Balance Volume indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

On Balance Volume: Simple MovAvg Difference

Abbreviation: OBV Avg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = OBV: Raw (Closing Price, Volume)

OVB: Raw represents On Balance Volume: Raw
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the On Balance Volume indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

On Balance Volume: Exponential MovAvg

Abbreviation: OBV ExpAvg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = OBV: Raw (Closing Price, Volume)

OVB: Raw represents On Balance Volume: Raw
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the On Balance Volume indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

On Balance Volume: Exponential MovAvg Difference

Abbreviation: OBV ExpAvg Diff

Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = OBV: Raw (Closing Price, Volume)

OVB: Raw represents On Balance Volume: Raw
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the On Balance Volume indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

On Balance Volume: Volume Weighted MovAvg

Abbreviation: OBV VolWgtAvg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where
X = OBV: Raw (Closing Price, Volume)

OVB: Raw represents On Balance Volume: Raw
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the On Balance Volume indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

On Balance Volume: Volume Weighted MovAvg Difference

Abbreviation: OBV VolWgtAvg Diff

Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

where

X = OBV: Raw (Closing Price, Volume)

OVB: Raw represents On Balance Volume: Raw

VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the On Balance Volume indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Positive Volume Index: Simple MovAvg

Abbreviation: PosVolIndex Avg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = PosVolIndex: Raw (Closing Price, Volume)

PosVolIndex: Raw represents Positive Volume Index: Raw
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Positive Volume Index indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Positive Volume Index: Simple MovAvg Difference

Abbreviation: PosVolIndex Avg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = PosVolIndex: Raw (Closing Price, Volume)

PosVolIndex: Raw represents Positive Volume Index: Raw
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Positive Volume Index indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Positive Volume Index: Exponential MovAvg

Abbreviation: PosVolIndex ExpAvg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = PosVolIndex: Raw (Closing Price, Volume)

PosVolIndex: Raw represents Positive Volume Index: Raw
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Positive Volume Index indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Positive Volume Index: Exponential MovAvg Difference

Abbreviation: PosVolIndex ExpAvg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = PosVolIndex: Raw (Closing Price, Volume)

PosVolIndex: Raw represents Positive Volume Index: Raw
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Positive Volume Index indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Positive Volume Index: Volume Weighted MovAvg

Abbreviation: PosVolIndex VolWgtAvg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where
X = PosVolIndex: Raw (Closing Price, Volume)

PosVolIndex: Raw represents Positive Volume Index: Raw
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Positive Volume Index indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Positive Volume Index: Volume Weighted MovAvg Difference

Abbreviation: PosVolIndex VolWgtAvg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg1 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

w here
X = PosVolIndex: Raw (Closing Price, Volume)

PosVolIndex: Raw represents Positive Volume Index: Raw
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Positive Volume Index indicator by calculating the difference betw een tw o moving averages. Since it uses volume w eighted moving averages (w hich give more importance to those periods w ith higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement betw een periods of relatively higher volume than betw een periods of relatively low er volume.

Volume Accumulation #1: Simple MovAvg

Abbreviation: VolAccum#1 Avg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = VolAccum#1: Raw (High Price, Low Price, Closing Price, Volume)

VolAccum#1: Raw represents Volume Accumulation #1: Raw
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Volume Accumulation #1 indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Volume Accumulation #1: Simple MovAvg Difference

Abbreviation: VolAccum#1 Avg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = VolAccum#1: Raw (High Price, Low Price, Closing Price, Volume)

VolAccum#1: Raw represents Volume Accumulation #1: Raw
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Volume Accumulation #1 indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Volume Accumulation #1: Exponential MovAvg

Abbreviation: VolAccum#1 ExpAvg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = VolAccum#1: Raw (High Price, Low Price, Closing Price, Volume)

VolAccum#1: Raw represents Volume Accumulation #1: Raw
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Volume Accumulation #1 indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Volume Accumulation #1: Exponential MovAvg Difference

Abbreviation: VolAccum#1 ExpAvg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = VolAccum#1: Raw (High Price, Low Price, Closing Price, Volume)

VolAccum#1: Raw represents Volume Accumulation #1: Raw
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Volume Accumulation #1 indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Volume Accumulation #1: Volume Weighted MovAvg

Abbreviation: VolAccum#1 VolWgtAvg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where
X = VolAccum#1: Raw (High Price, Low Price, Closing Price, Volume)

VolAccum#1: Raw represents Volume Accumulation #1: Raw
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Volume Accumulation #1 indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Volume Accumulation #1: Volume Weighted MovAvg Difference

Abbreviation: VolAccum#1 VolWgtAvg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

where
X = VolAccum#1: Raw (High Price, Low Price, Closing Price, Volume)

VolAccum#1: Raw represents Volume Accumulation #1: Raw
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Volume Accumulation #1 indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Volume Accumulation #2: Simple MovAvg

Abbreviation: VolAccum#2 Avg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = VolAccum#2: Raw (High Price, Low Price, Closing Price, Volume)

VolAccum#2: Raw represents Volume Accumulation #2: Raw
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Volume Accumulation #2 indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Volume Accumulation #2: Simple MovAvg Difference

Abbreviation: VolAccum#2 Avg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = VolAccum#2: Raw (High Price, Low Price, Closing Price, Volume)

VolAccum#2: Raw represents Volume Accumulation #2: Raw
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Volume Accumulation #2 indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Volume Accumulation #2: Exponential MovAvg

Abbreviation: VolAccum#2 ExpAvg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = VolAccum#2: Raw (High Price, Low Price, Closing Price, Volume)

VolAccum#2: Raw represents Volume Accumulation #2: Raw
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Volume Accumulation #2 indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Volume Accumulation #2: Exponential MovAvg Difference

Abbreviation: VolAccum#2 ExpAvg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = VolAccum#2: Raw (High Price, Low Price, Closing Price, Volume)

VolAccum#2: Raw represents Volume Accumulation #2: Raw
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Volume Accumulation #2 indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Volume Accumulation #2: Volume Weighted MovAvg

Abbreviation: VolAccum#2 VolWgtAvg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where
X = VolAccum#2: Raw (High Price, Low Price, Closing Price, Volume)

VolAccum#2: Raw represents Volume Accumulation #2: Raw
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Volume Accumulation #2 indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Volume Accumulation #2: Volume Weighted MovAvg Difference

Abbreviation: VolAccum#2 VolWgtAvg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

where
X = VolAccum#2: Raw (High Price, Low Price, Closing Price, Volume)

VolAccum#2: Raw represents Volume Accumulation #2: Raw
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Volume Accumulation #2 indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Williams' Variable Accumulation Distribution: Simple MovAvg

Abbreviation: Williams' Variable Accumulation Distribution Avg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = Williams' Variable Accumulation Distribution: Raw (Opening Price, High Price, Low Price, Closing Price, Volume)

Williams' Variable Accumulation Distribution: Raw represents Williams' Variable Accumulation Distribution: Raw
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Williams' Variable Accumulation Distribution indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Williams' Variable Accumulation Distribution: Simple MovAvg Difference

Abbreviation: Williams' Variable Accumulation Distribution Avg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = Williams' Variable Accumulation Distribution: Raw (Opening Price, High Price, Low Price, Closing Price, Volume)

Williams' Variable Accumulation Distribution: Raw represents Williams' Variable Accumulation Distribution: Raw
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Williams' Variable Accumulation Distribution indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Williams' Variable Accumulation Distribution: Exponential MovAvg

Abbreviation: Williams' Variable Accumulation Distribution ExpAvg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = Williams' Variable Accumulation Distribution: Raw (Opening Price, High Price, Low Price, Closing Price, Volume)

Williams' Variable Accumulation Distribution: Raw represents Williams' Variable Accumulation Distribution: Raw
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Williams' Variable Accumulation Distribution indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Williams' Variable Accumulation Distribution: Exponential MovAvg Difference

Abbreviation: Williams' Variable Accumulation Distribution ExpAvg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = Williams' Variable Accumulation Distribution: Raw (Opening Price, High Price, Low Price, Closing Price, Volume)

Williams' Variable Accumulation Distribution: Raw represents Williams' Variable Accumulation Distribution: Raw
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Williams' Variable Accumulation Distribution indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Williams' Variable Accumulation Distribution: Volume Weighted MovAvg

Abbreviation: Williams' Variable Accumulation Distribution VolWgtAvg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where
X = Williams' Variable Accumulation Distribution: Raw (Opening Price, High Price, Low Price, Closing Price, Volume)

Williams' Variable Accumulation Distribution: Raw represents Williams' Variable Accumulation Distribution: Raw
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Williams' Variable Accumulation Distribution indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Williams' Variable Accumulation Distribution: Volume Weighted MovAvg Difference

Abbreviation: Williams' Variable Accumulation Distribution VolWgtAvg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

where
X = Williams' Variable Accumulation Distribution: Raw (Opening Price, High Price, Low Price, Closing Price, Volume)

Williams' Variable Accumulation Distribution: Raw represents Williams' Variable Accumulation Distribution: Raw
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Williams' Variable Accumulation Distribution indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Volume Life Force: Simple MovAvg

Abbreviation: VolLifeForce Avg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = VolLifeForce: Raw (Closing Price, Volume)

VolLifeForce: Raw represents Volume Life Force: Raw
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Volume Life Force indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Volume Life Force: Simple MovAvg Difference

Abbreviation: VolLifeForce Avg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = VolLifeForce: Raw (Closing Price, Volume)

VolLifeForce: Raw represents Volume Life Force: Raw
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Volume Life Force indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Volume Life Force: Exponential MovAvg

Abbreviation: VolLifeForce ExpAvg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = VolLifeForce: Raw (Closing Price, Volume)

VolLifeForce: Raw represents Volume Life Force: Raw
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Volume Life Force indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Volume Life Force: Exponential MovAvg Difference

Abbreviation: VolLifeForce ExpAvg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = VolLifeForce: Raw (Closing Price, Volume)

VolLifeForce: Raw represents Volume Life Force: Raw
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Volume Life Force indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Volume Life Force: Volume Weighted MovAvg

Abbreviation: VolLifeForce VolWgtAvg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where
X = VolLifeForce: Raw (Closing Price, Volume)

VolLifeForce: Raw represents Volume Life Force: Raw
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Volume Life Force indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Volume Life Force: Volume Weighted MovAvg Difference

Abbreviation: VolLifeForce VolWgtAvg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

where
X = VolLifeForce: Raw (Closing Price, Volume)

VolLifeForce: Raw represents Volume Life Force: Raw
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Volume Life Force indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Volume Price Trend: Simple MovAvg

Abbreviation: VolPriceTrend Avg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = VolPriceTrend: Raw (Closing Price, Volume)

VolPriceTrend: Raw represents Volume Price Trend: Raw (Money Flow Indicator)
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Volume Price Trend indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Volume Price Trend: Simple MovAvg Difference

Abbreviation: VolPriceTrend Avg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = VolPriceTrend: Raw (Closing Price, Volume)

VolPriceTrend: Raw represents Volume Price Trend: Raw (Money Flow Indicator)
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Volume Price Trend indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Volume Price Trend: Exponential MovAvg

Abbreviation: VolPriceTrend ExpAvg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = VolPriceTrend: Raw (Closing Price, Volume)

VolPriceTrend: Raw represents Volume Price Trend: Raw (Money Flow Indicator)
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Volume Price Trend indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Volume Price Trend: Exponential MovAvg Difference

Abbreviation: VolPriceTrend ExpAvg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = VolPriceTrend: Raw (Closing Price, Volume)

VolPriceTrend: Raw represents Volume Price Trend: Raw (Money Flow Indicator)
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Volume Price Trend indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Volume Price Trend: Volume Weighted MovAvg

Abbreviation: VolPriceTrend VolWgtAvg
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where
X = VolPriceTrend: Raw (Closing Price, Volume)

VolPriceTrend: Raw represents Volume Price Trend: Raw (Money Flow Indicator)
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Volume Price Trend indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Volume Price Trend: Volume Weighted MovAvg Difference

Abbreviation: VolPriceTrend VolWgtAvg Diff
Category: Volume: Smoothed

Input Parameters:

Name	Range	Default
Closing Price		Close
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

where
X = VolPriceTrend: Raw (Closing Price, Volume)

VolPriceTrend: Raw represents Volume Price Trend: Raw (Money Flow Indicator)
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Volume Price Trend indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Lag

Abbreviation: Lag
Category: Basic

Input Parameters:

Name	Range	Default
Time Series		Close
Periods Back	Int >= 1	5

Calculation:

Time Series value n periods ago

where
n = Periods Back

Discussion:

Computes the time series value n periods ago.

Lead (Do not use for trading)

Abbreviation: Lead
Category: Basic

Input Parameters:

Name	Range	Default
Time Series		Close
Periods Ahead	Int >= 1	5

Calculation:

Time Series value n periods in the future

where
n = Periods Ahead

Discussion:

Computes the time series value n periods in the future.

Note that this indicator is labeled with '(Do not use for trading)' because it utilizes future values to calculate the current value. If you try to use this indicator as a basis for trading decisions, it will appear to work during backtesting (when you have future data available), but when you try to use it for real world trading, future values will be unavailable.

Maximum Value

Abbreviation: Max
Category: Basic

Input Parameters:

Name	Range	Default
Time Series		Close
Window Size	Int >= 1	5

Calculation:

The maximum of the set containing the current Time Series value and past n-1 Time Series values

where
n = Window Size

Discussion:

Computes the maximum time series value over the last n periods.

Minimum Value

Abbreviation: Min
Category: Basic

Input Parameters:

Name	Range	Default
Time Series		Close
Window Size	Int >= 1	5

Calculation:

The minimum of the set containing the current Time Series value and past n-1 Time Series values

where
n = Window Size

Discussion:

Computes the minimum time series value over the last n periods.

Range

Abbreviation: Range
Category: Basic

Input Parameters:

Name	Range	Default
Time Series		Close
Window Size	Int >= 1	5

Calculation:

Max(X, n) - Min(X, n)

where
X = Time Series
n = Window Size

Max represents Maximum Value
Min represents Minimum Value

Discussion:

Computes the range of time series values over the last n periods.

Sum

Abbreviation: Sum
Category: Basic

Input Parameters:

Name	Range	Default
Time Series		
Window Size	Int >= 1	5

Calculation:

Sum of the current Time Series value and the past n-1Time Series values

w here
n = Window Size

Discussion:

Provides a sum of a time series over the last n periods.

Multiply

Abbreviation: Multiply
Category: Basic

Input Parameters:

Name	Range	Default
Time Series		
Window Size	Int >= 1	2

Calculation:

Product of the current Time Series value and the past n-1Time Series values

where
n = Window Size

Discussion:

Provides a product of a time series over the last n periods.

Sum

Abbreviation: Sum
Category: Basic

Input Parameters:

Name	Range	Default
Time Series		
Window Size	Int >= 1	5

Calculation:

Sum of the current Time Series value and the past n-1Time Series values

where
n = Window Size

Discussion:

Provides a sum of a time series over the last n periods.

Multiply

Abbreviation: Multiply
Category: Basic

Input Parameters:

Name	Range	Default
Time Series		
Window Size	Int >= 1	2

Calculation:

Product of the current Time Series value and the past n-1Time Series values

where
n = Window Size

Discussion:

Provides a product of a time series over the last n periods.

Price High

Abbreviation: PriceHigh
Category: Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Price Periods	Int >= 1	5

Calculation:

Maximum High Price over the last n periods

where
n = Price Periods

Discussion:

Provides the highest market price reached over the last n periods.

Price Low

Abbreviation: PriceLow
Category: Price Basic

Input Parameters:

Name	Range	Default
Low Price		Low
Price Periods	Int >= 1	5

Calculation:

Minimum Low Price over the last n periods

where
n = Window Price Periods

Discussion:

Provides the lowest market price reached over the last n periods.

Price Range

Abbreviation: PriceRange
Category: Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Price Periods	Int >= 1	6

Calculation:

PriceHigh(High Price, n) - PriceLow (Low Price, n)

where
n = Price Periods

PriceHigh represents Price High
PriceLow represents Price Low

Discussion:

Provides the range of market price over the last n periods.

Price Range Midpoint

Abbreviation: PriceMidPoint
Category: Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Price Periods	Int >= 1	6

Calculation:

(PriceHigh(High Price, n) + PriceLow (Low Price, n)) / 2

where
n = Price Periods

PriceHigh represents Price High
PriceLow represents Price Low

Discussion:

Provides the midpoint of the total range of market prices over the last n periods.

Price High: Simple MovAvg

Abbreviation: PriceHigh Avg
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Price Periods	Int >= 1	5
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = PriceHigh(High Price, Price Periods)

PriceHigh represents Price High
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Price High indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Price High: Simple MovAvg Difference

Abbreviation: PriceHigh Avg Diff
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Price Periods	Int >= 1	5
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = PriceHigh(High Price, Price Periods)

PriceHigh represents Price High
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Price High indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Price High: Exponential MovAvg

Abbreviation: PriceHigh ExpAvg
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Price Periods	Int >= 1	5
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = PriceHigh(High Price, Price Periods)

PriceHigh represents Price High
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Price High indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Price High: Exponential MovAvg Difference

Abbreviation: PriceHigh ExpAvg Diff
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Price Periods	Int >= 1	5
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = PriceHigh(High Price, Price Periods)

PriceHigh represents Price High
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Price High indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Price High: Volume Weighted MovAvg

Abbreviation: PriceHigh VolWgtAvg
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Price Periods	Int >= 1	5
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where
X = PriceHigh(High Price, Price Periods)

PriceHigh represents Price High
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Price High indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Price High: Volume Weighted MovAvg Difference

Abbreviation: PriceHigh VolWgtAvg Diff
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Price Periods	Int >= 1	5
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

w here
X = PriceHigh(High Price, Price Periods)

PriceHigh represents Price High
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Price High indicator by calculating the difference betw een tw o moving averages. Since it uses volume w eighted moving averages (w hich give more importance to those periods w ith higher volume relative to the other periods in the moving average’s time frame), the indicator tends to focus more upon movement betw een periods of relatively higher volume than betw een periods of relatively low er volume.

Price Low: Simple MovAvg

Abbreviation: PriceLow Avg
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
Low Price		Low
Price Periods	Int >= 1	5
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = PriceLow (Low Price, Price Periods)

PriceLow represents Price Low
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Price Low indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Price Low: Simple MovAvg Difference

Abbreviation: PriceLow Avg Diff
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
Low Price		Low
Price Periods	Int >= 1	5
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = PriceLow (Low Price, Price Periods)

PriceLow represents Price Low
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Price Low indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Price Low: Exponential MovAvg

Abbreviation: PriceLow ExpAvg
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
Low Price		Low
Price Periods	Int >= 1	5
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = PriceLow (Low Price, Price Periods)

PriceLow represents Price Low
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Price Low indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Price Low: Exponential MovAvg Difference

Abbreviation: PriceLow ExpAvg Diff
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
Low Price		Low
Price Periods	Int >= 1	5
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = PriceLow (Low Price, Price Periods)

PriceLow represents Price Low
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Price Low indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Price Low: Volume Weighted MovAvg

Abbreviation: PriceLow VolWgtAvg
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
Low Price		Low
Price Periods	Int >= 1	5
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where
X = PriceLow (Low Price, Price Periods)

PriceLow represents Price Low
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Price Low indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Price Low: Volume Weighted MovAvg Difference

Abbreviation: PriceLow VolWgtAvg Diff
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
Low Price		Low
Price Periods	Int >= 1	5
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

where
X = PriceLow (Low Price, Price Periods)

PriceLow represents Price Low
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Price Low indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Price Range: Simple MovAvg

Abbreviation: PriceRange Avg
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Price Periods	Int >= 1	6
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = PriceRange(High Price, Low Price, Price Periods)

PriceRange represents Price Range
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Price Range indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Price Range: Simple MovAvg Difference

Abbreviation: PriceRange Avg Diff
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Price Periods	Int >= 1	6
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = PriceRange(High Price, Low Price, Price Periods)

PriceRange represents Price Range
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Price Range indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Price Range: Exponential MovAvg

Abbreviation: PriceRange ExpAvg
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Price Periods	Int >= 1	6
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = PriceRange(High Price, Low Price, Price Periods)

PriceRange represents Price Range
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Price Range indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Price Range: Exponential MovAvg Difference

Abbreviation: PriceRange ExpAvg Diff

Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Price Periods	Int >= 1	6
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = PriceRange(High Price, Low Price, Price Periods)

PriceRange represents Price Range
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Price Range indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Price Range: Volume Weighted MovAvg

Abbreviation: PriceRange VolWgtAvg
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Price Periods	Int >= 1	6
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where
X = PriceRange(High Price, Low Price, Price Periods)

PriceRange represents Price Range
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Price Range indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Price Range: Volume Weighted MovAvg Difference

Abbreviation: PriceRange VolWgtAvg Diff
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Price Periods	Int >= 1	6
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

where
X = PriceRange(High Price, Low Price, Price Periods)

PriceRange represents Price Range
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Price Range indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Price Range Midpoint: Simple MovAvg

Abbreviation: PriceMidpoint Avg
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Price Periods	Int >= 1	6
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = PriceMidpoint(High Price, Low Price, Price Periods)

PriceMidpoint represents Price Range Midpoint
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Price Range Midpoint indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Price Range Midpoint: Simple MovAvg Difference

Abbreviation: PriceMidpoint Avg Diff
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Price Periods	Int >= 1	6
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = PriceMidpoint(High Price, Low Price, Price Periods)

PriceMidpoint represents Price Range Midpoint
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Price Range Midpoint indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Price Range Midpoint: Exponential MovAvg

Abbreviation: PriceMidpoint ExpAvg
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Price Periods	Int >= 1	6
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = PriceMidpoint(High Price, Low Price, Price Periods)

PriceMidpoint represents Price Range Midpoint
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Price Range Midpoint indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Price Range Midpoint: Exponential MovAvg Difference

Abbreviation: PriceMidpoint ExpAvg Diff
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Price Periods	Int >= 1	6
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = PriceMidpoint(High Price, Low Price, Price Periods)

PriceMidpoint represents Price Range Midpoint
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Price Range Midpoint indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Price Range Midpoint: Volume Weighted MovAvg

Abbreviation: PriceMidpoint VolWgtAvg
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Price Periods	Int >= 1	6
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where
X = PriceMidpoint(High Price, Low Price, Price Periods)

PriceMidpoint represents Price Range Midpoint
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Price Range Midpoint indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Price Range Midpoint: Volume Weighted MovAvg Difference

Abbreviation: PriceMidpoint VolWgtAvg Diff
Category: Advanced Price Basic

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Price Periods	Int >= 1	6
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

where
X = PriceMidpoint(High Price, Low Price, Price Periods)

PriceMidpoint represents Price Range Midpoint
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Price Range Midpoint indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Day Open (DayTrader only)

Abbreviation: DayOpen
Category: Intraday Basic

Input Parameters:

Name	Range	Default
Date Variable		Date
Time Series		Open
Days Back	Int >= 0	10

Calculation:

If (Days Back = 0) then first X of the day
Otherwise first X from the day N days ago

Where
X = Time Series
N = Days Back

Discussion:

Use this indicator to get the first value of the current day (Days Back = 0) or the first value of any previous day (Days Back > 0). By default, the time series parameter defaults to Open, which will return the opening price for the day. By changing the time series, the opening value of any time series can be calculated. For example, you could very easily compute the days opening value of the Stochastic %K.

Day High (DayTrader only)

Abbreviation: DayOpen
Category: Intraday Basic

Input Parameters:

Name	Range	Default
Date Variable		Date
Time Series		High
Days Back	Int >= 0	10

Calculation:

If (Days Back = 0) then highest X since the start of the day
Otherw ise highest X from the day N days ago

Where
X = Time Series
N = Days Back

Discussion:

Use this indicator to get the highest value since the start of the current day (Days Back = 0) or the highest value of any previous day (Days Back > 0). By default, the time series parameter defaults to High, w hich w ill return the highest price for the day. By changing the time series, the highest value of any time series can be calculated. For example, you could very easily compute the days highest value of the Stochastic %K.

It should be noted that w hen using a Days Back value of 0, the indicator w ill continue to change throughout each day as new highs are reached. How ever, using a Days Back value greater than 0 w ill result in the same value across an entire day due to the previous days high having already occurred.

Day Low (DayTrader only)

Abbreviation: DayOpen
Category: Intraday Basic

Input Parameters:

Name	Range	Default
Date Variable		Date
Time Series		Low
Days Back	Int >= 0	10

Calculation:

If (Days Back = 0) then lowest X since the start of the day
Otherwise lowest X from the day N days ago

Where
X = Time Series
N = Days Back

Discussion:

Use this indicator to get the lowest value since the start of the current day (Days Back = 0) or the lowest value of any previous day (Days Back > 0). By default, the time series parameter defaults to Low , which will return the lowest price for the day. By changing the time series, the lowest value of any time series can be calculated. For example, you could very easily compute the days lowest value of the Stochastic %K.

It should be noted that when using a Days Back value of 0, the indicator will continue to change throughout each day as new lows are reached. However, using a Days Back value greater than 0 will result in the same value across an entire day due to the previous days low having already occurred.

Day Close (DayTrader only)

Abbreviation: DayOpen
Category: Intraday Basic

Input Parameters:

Name	Range	Default
Date Variable		Date
Time Series		Close
Days Back	Int >= 1	10

Calculation:

Last X from the day N days ago

Where
X = Time Series
N = Days Back

Discussion:

Use this indicator to get the last value of any previous day. By default, the time series parameter defaults to Close, which will return the closing price for the day. By changing the time series, the last value of any time series can be calculated. For example, you could very easily compute the yesterday's last value of the Stochastic %K.

Day Volume (DayTrader only)

Abbreviation: DayOpen
Category: Intraday Basic

Input Parameters:

Name	Range	Default
Date Variable		Date
Volume		Volume
Days Back	Int >= 0	10

Calculation:

If (Days Back = 0) then sum of X since the start of the day
Otherwise sum of X for the entire day N days ago

Where
X = Time Series
N = Days Back

Discussion:

Use this indicator to get the volume since the start of the current day (Days Back = 0) or volume of any previous day (Days Back > 0). By default, the time series parameter defaults to Volume, however by changing the time series, the sum of any time series could be calculated. For example, you could very easily compute the sum of the number of times the Stochastic %K is greater than 80.

It should be noted that when using a Days Back value of 0, the indicator will continue to change throughout each day as more volume occurs. However, using a Days Back value greater than 0 will result in the same value across an entire day due to the previous days volume having already occurred.

Day Range (DayTrader only)

Abbreviation: DayOpen
Category: Intraday Basic

Input Parameters:

Name	Range	Default
Date Variable		Date
High Time Series		High
Low Time Series		Low
Days Back	Int >= 0	10

Calculation:

If (Days Back = 0) then (highest X since the start of the day – lowest Y since the start of the day)
Otherwise (highest X from the day N days ago – lowest Y from the day N days ago)

Where
X = High Time Series
Y = Low Time Series
N = Days Back

Discussion:

Use this indicator to get the difference between the highest and lowest value since the start of the current day (Days Back = 0) or the difference between highest and lowest value of any previous day (Days Back > 0). By default, the time series parameters default to High and Low, which will return the price for the day. By changing the time series, the range of any time series can be calculated. For example, you could very easily compute the days range of the Stochastic %K by setting both the High Time Series and the Low Time Series to Stochastic %K.

It should be noted that when using a Days Back value of 0, the indicator will continue to change throughout each day as new highs and lows are reached. However, using a Days Back value greater than 0 will result in the same value across an entire day due to the previous days high and low having already occurred.

Days until Third Friday of Month

Abbreviation: Days until Third Friday
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

Returns the number of days that remain until the third Friday of the Month for the specified Date

Day of Week

Abbreviation: Day of Week
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

Returns the day of the w eek (1 - Sunday to 7 - Saturday) for the specified Date

Sunday Flag

Abbreviation: Sunday Flag
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

If Date is a Sunday then equals 1 otherwise equals 0

Monday Flag

Abbreviation: Monday Flag
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

If Date is a Monday then equals 1 otherwise equals 0

Tuesday Flag

Abbreviation: Tuesday Flag
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

If Date is a Tuesday then equals 1 otherwise equals 0

Wednesday Flag

Abbreviation: Wednesday Flag
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

If Date is a Wednesday then equals 1 otherwise equals 0

Thursday Flag

Abbreviation: Thursday Flag
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

If Date is a Thursday then equals 1 otherwise equals 0

Friday Flag

Abbreviation: Friday Flag
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

If Date is a Friday then equals 1 otherwise equals 0

Saturday Flag

Abbreviation: Saterday Flag
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

If Date is a Saturday then equals 1 otherwise equals 0

Day of Month

Abbreviation: Day of Month
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

Returns the day of the month (1 to 31) for the specified Date

Month of Year

Abbreviation: Month of Year
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

Returns the month of the year (1 - January to 12 - December) for the specified Date

January Flag

Abbreviation: January Flag
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

If Date is in the month of January then equals 1 otherwise equals 0

February Flag

Abbreviation: February Flag
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

If Date is in the month of February then equals 1 otherwise equals 0

March Flag

Abbreviation: March Flag
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

If Date is in the month of March then equals 1 otherwise equals 0

April Flag

Abbreviation: April Flag
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

If Date is in the month of April Flag then equals 1 otherwise equals 0

May Flag

Abbreviation: May Flag
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

If Date is in the month of May then equals 1 otherwise equals 0

June Flag

Abbreviation: June Flag
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

If Date is in the month of June then equals 1 otherwise equals 0

July Flag

Abbreviation: July Flag
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

If Date is in the month of July then equals 1 otherwise equals 0

August Flag

Abbreviation: August Flag
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

If Date is in the month of August Flag then equals 1 otherwise equals 0

September Flag

Abbreviation: September Flag
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

If Date is in the month of September then equals 1 otherwise equals 0

October Flag

Abbreviation: October Flag
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

If Date is in the month of October then equals 1 otherwise equals 0

November Flag

Abbreviation: November Flag
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

If Date is in the month of November then equals 1 otherwise equals 0

December Flag

Abbreviation: December Flag
Category: Day & Date Flags

Input Parameters:

Name	Range	Default
Date		

Calculation:

If Date is in the month of December then equals 1 otherwise equals 0

Time of Day

Abbreviation: Time of Day
Category: Time Flags

Input Parameters:

Name	Range	Default
Date Variable		Date

Calculation:

Fraction that represents the time of day (i.e Noon would be represented by 0.5).

Discussion:

Use this indicator to determine what fraction of the day has passed.

Hour of Day

Abbreviation: Hour of Day
Category: Time Flags

Input Parameters:

Name	Range	Default
Date Variable		Date

Calculation:

Number that represents the hour of day (i.e Noon would be represented by 12).

Discussion:

Use this indicator to determine the hour of the day.

Minute of Hour

Abbreviation: Minute of Hour
Category: Time Flags

Input Parameters:

Name	Range	Default
Date Variable		Date

Calculation:

Number that represents the minute of the hour (i.e 10:52 AM would return 52).

Discussion:

Use this indicator to determine the minute of the hour.

Add2

Abbreviation: Add2
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		

Calculation:

Operand #1 + Operand #2

Add3

Abbreviation: Add3
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		

Calculation:

Operand #1 + Operand #2 + Operand #3

Add4

Abbreviation: Add4
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		
Operand #4		

Calculation:

Operand #1 + Operand #2 + Operand #3 + Operand #4

Average2

Abbreviation: Avg2
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		

Calculation:

(Operand #1 + Operand #2) / 2

Average3

Abbreviation: Avg3
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		

Calculation:

(Operand #1 + Operand #2 + Operand #3) / 3

Average4

Abbreviation: Avg4
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		
Operand #4		

Calculation:

(Operand #1 + Operand #2 + Operand #3 + Operand #4) / 4

Subtract

Abbreviation: Sub
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		

Calculation:

Operand #1 - Operand #2

Multiply2

Abbreviation: Mul2
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		

Calculation:

Operand #1 * Operand #2

Multiply3

Abbreviation: Mul3
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		

Calculation:

Operand #1 * Operand #2 * Operand #3

Multiply4

Abbreviation: Mul4
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		
Operand #4		

Calculation:

Operand #1 * Operand #2 * Operand #3 * Operand #4

Divide

Abbreviation: Divide
Category: Arithmetic

Input Parameters:

Name	Range	Default
Numerator		
Denominator		

Calculation:

Numerator / Denominator

Quotient

Abbreviation: Quotient
Category: Arithmetic

Input Parameters:

Name	Range	Default
Numerator		
Denominator		

Calculation:

The quotient is the whole number part of the Numerator divided by Denominator.

Example: Quotient of 5/3 = 1 where 5/3 = 1.666…

Remainder

Abbreviation: Remainder
Category: Arithmetic

Input Parameters:

Name	Range	Default
Numerator		
Denominator		

Calculation:

The remainder of Numerator divided by Denominator

Min2

Abbreviation: Min2
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		

Calculation:

if (Operand #1 <= Operand #2) then Operand #1
if (Operand #2 <= Operand #1) then Operand #2

Min3

Abbreviation: Min3
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		

Calculation:

if (Operand #1 <= Operand #2) and (Operand #1 <= Operand #3) then Operand #1
if (Operand #2 <= Operand #1) and (Operand #2 <= Operand #3) then Operand #2
if (Operand #3 <= Operand #1) and (Operand #3 <= Operand #2) then Operand #3

Min4

Abbreviation: Min4
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		
Operand #4		

Calculation:

if (Operand #1 <= Operand #2) and (Operand #1 <= Operand #3) and (Operand #1 <= Operand #4) then Operand #1
if (Operand #2 <= Operand #1) and (Operand #2 <= Operand #3) and (Operand #2 <= Operand #4) then Operand #2
if (Operand #3 <= Operand #1) and (Operand #3 <= Operand #3) and (Operand #3 <= Operand #4) then Operand #3
if (Operand #4 <= Operand #1) and (Operand #4 <= Operand #2) and (Operand #4 <= Operand #3) then Operand #4

Max2

Abbreviation: Max2
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		

Calculation:

if (Operand #1 >= Operand #2) then Operand #1
if (Operand #2 >= Operand #1) then Operand #2

Max3

Abbreviation: Max3
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		

Calculation:

if (Operand #1 >= Operand #2) and (Operand #1 >= Operand #3) then Operand #1
if (Operand #2 >= Operand #1) and (Operand #2 >= Operand #3) then Operand #2
if (Operand #3 >= Operand #1) and (Operand #3 >= Operand #2) then Operand #3

Max4

Abbreviation: Max4
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		
Operand #4		

Calculation:

if (Operand #1 >= Operand #2) and (Operand #1 >= Operand #3) and (Operand #1 >= Operand #4) then Operand #1
if (Operand #2 >= Operand #1) and (Operand #2 >= Operand #3) and (Operand #2 >= Operand #4) then Operand #2
if (Operand #3 >= Operand #1) and (Operand #3 >= Operand #2) and (Operand #3 >= Operand #4) then Operand #3
if (Operand #4 >= Operand #1) and (Operand #4 >= Operand #2) and (Operand #4 >= Operand #3) then Operand #4

Absolute Value

Abbreviation: Abs
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand		

Calculation:

if (Operand >= 0) then Operand
else -(Operand)

Exp

Abbreviation: Exp
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand		

Calculation:

Pow (e, Operand)

w here
e = 2.718281828459045, more commonly know n as the inverse natural log of 1.

Pow represents Pow er

Inverse

Abbreviation: Inverse
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand		

Calculation:

1 / Operand

Ln

Abbreviation: Ln
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand		

Calculation:

Natural Logarithm (Operand)

Log

Abbreviation: Log
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand		

Calculation:

Logarithm (Operand)

Power

Abbreviation: Pow
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand #1		
Power		

Calculation:

Operand #1 raised to the power of Power

Square Root

Abbreviation: SqrRt
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand		

Calculation:

Square Root (Operand)

Linear Time Regression: Coefficient of Correlation (r)

Abbreviation: LinTimeReg r
Category: Regression

Input Parameters:

Name	Range	Default
Time Series		Close
Regression Periods	Int >= 3	10

Calculation:

$$\frac{[n * sum(X*Y) - sum(X) * sum(Y)]}{sqrt ([n * sum(X*X) - sum(X) * sum(X)] * [n * sum(Y*Y) - sum(Y) * sum(Y)])}$$

where
sum(X*X) = sum of X*X over the last n periods
sum(Y*Y) = sum of Y*Y over the last n periods
sum(X*Y) = sum of X*Y over the last n periods
sum(X) = sum of X over the last n periods
sum(Y) = sum of Y over the last n periods

X = Period Number
Y = Time Series
n = Regression Periods

Discussion:

Computes the coefficient of correlation (r) for the linear regression line. The coefficient correlation is a measure of the degree of linear correlation between the time series and time. The closer the value is to one, the stronger the positive correlation. The closer the value is to negative one, the stronger the negative correlation. A value of zero indicates a lack of correlation.

Linear Time Regression: Coefficient of Determination (r squared)

Abbreviation: LinTimeReg rsqrd
Category: Regression

Input Parameters:

Name	Range	Default
Time Series		Close
Regression Periods	Int >= 3	10

Calculation:

LinTimeReg r(X, n) * LinTimeReg r(X, n)

where
X = Time Series
n = Regression Periods

LinTimeReg r represents Linear Time Regression: Coefficient of Correlation (r)

Discussion:

Computes the coefficient of determination (r squared) for the linear regression line. Statistically the coefficient of determination is simply the ratio of the explained variation to the total variation. In simpler terms, the coefficient of determination is simply the ratio of the variation between the regression line time series value and the time series mean to the variation of each time series value to the time series mean. Note that the coefficient of determination is simply the square of the coefficient of correlation.

Linear Time Regression: Coefficient of Regression (Slope)

Abbreviation: LinTimeReg Slope
Category: Regression

Input Parameters:

Name	Range	Default
Time Series		Close
Regression Periods	Int >= 3	10

Calculation:

$$\frac{[\, n * \mathrm{sum}(X*Y) - \mathrm{sum}(X) * \mathrm{sum}(Y) \,]}{[\, n * \mathrm{sum}(X*X) - \mathrm{sum}(X) * \mathrm{sum}(X) \,]}$$

where
sum(X*X) = sum of X*X over the last n periods
sum(X*Y) = sum of X*Y over the last n periods
sum(X) = sum of X over the last n periods
sum(Y) = sum of Y over the last n periods

X = Period Number
Y = Time Series
n = Regression Periods

Discussion:

Computes the slope of the linear regression line. Note that the linear regression line is the straight line that provides the best fit to the time series points (y axis) and their corresponding time period (x axis) over the last n periods.

Linear Time Regression: Predicted Change

Abbreviation: LinTimeReg PredChange
Category: Regression

Input Parameters:

Name	Range	Default
Time Series		Close
Regression Periods	Int >= 3	10
Periods Ahead	Integer	1

Calculation:

YIntercept + Slope(Y, n) * (Current Time Period + Periods Ahead) - Current Y

w here

YIntercept = mean(Y) - Slope(Y, n) * mean(X)

mean(X) = mean average of X over the last n periods
mean(Y) = mean average of Y over the last n periods

X = Period Number
Y = Time Series
n = Regression Periods

Slope represents Linear Time Regression: Coefficient of Regression (Slope)

Discussion:

Computes the change in the time series value (future value - current value) predicted by the linear regression line, w here the prediction is for the specified number of periods into the future (or past if periods ahead is less than 0). Note that the linear regression line is the straight line that provides the best fit to the time series points (y axis) and their corresponding time period (x axis) over the last n periods.

Linear Time Regression: Predicted Value

Abbreviation: LinTimeReg PredValue
Category: Regression

Input Parameters:

Name	Range	Default
Time Series		Close
Regression Periods	Int >= 3	10
Periods Ahead	Integer	1

Calculation:

YIntercept + Slope(Y, n) * Periods Ahead

w here
YIntercept = mean(Y) - Slope(Y, n) * mean(X)

mean(X) = mean average of X over the last n periods
mean(Y) = mean average of Y over the last n periods

X = Period Number
Y = Time Series
n = Regression Periods

Slope represents Linear Time Regression: Coefficient of Regression (Slope)

Discussion:

Computes the time series value predicted by the linear regression line, w here the prediction is for the specified number of periods into the future (or past if periods ahead is less than 0). Note that the linear regression line is the straight line that provides the best fit to the time series points (y axis) and their corresponding time period (x axis) over the last n periods.

Linear Time Regression: Standard Error of Estimate

Abbreviation: LinTimeReg StndErr
Category: Regression

Input Parameters:

Name	Range	Default
Time Series		Close
Regression Periods	Int >= 3	10

Calculation:

$$\text{sqrt}\left(\left[n*\text{sum}(Y*Y) - \text{sum}(Y)*\text{sum}(Y) - \frac{[n*\text{sum}(X*Y) - \text{sum}(X)*\text{sum}(Y)]^2}{n*\text{sum}(X*X) - \text{sum}(X)*\text{sum}(X)} \right] / [n*(n-1)] \right)$$

where
sum(X*X) = sum of X*X over the last n periods
sum(Y*Y) = sum of Y*Y over the last n periods
sum(X*Y) = sum of X*Y over the last n periods
sum(X) = sum of X over the last n periods
sum(Y) = sum of Y over the last n periods

X = Period Number
Y = Time Series
n = Regression Periods

Discussion:

Computes the standard error of estimate for the linear regression line. The standard error of estimate is simply the standard deviation of the vertical distance between the points and the linear regression line. Note that the linear regression line is the straight line that provides the best fit to the time series points (y axis) and their corresponding time period (x axis) over the last n periods.

Linear XY Regression: Coefficient of Correlation (r)

Abbreviation: LinXYReg r
Category: Regression

Input Parameters:

Name	Range	Default
X Axis		Close
Y Axis		Close
Regression Periods	Int >= 3	40

Calculation:

$$\frac{[\, n * \text{sum}(X*Y) - \text{sum}(X) * \text{sum}(Y) \,]}{\text{sqrt}\,(\, [n * \text{sum}(X*X) - \text{sum}(X) * \text{sum}(X)] * [n * \text{sum}(Y*Y) - \text{sum}(Y) * \text{sum}(Y)] \,)}$$

where
sum(X*X) = sum of X*X over the last n periods
sum(Y*Y) = sum of Y*Y over the last n periods
sum(X*Y) = sum of X*Y over the last n periods
sum(X) = sum of X over the last n periods
sum(Y) = sum of Y over the last n periods

X = X Axis
Y = Y Axis
n = Regression Periods

Discussion:

Computes the coefficient of correlation (r) for the linear regression line. The coefficient of determination is a measure of the degree of linear correlation between two time series. The closer the value is to one, the stronger the positive correlation. The closer the value is to negative one, the stronger the negative correlation. A value of zero indicates a lack of correlation. Note that the coefficient of determination is simply the square of the coefficient of correlation.

Linear XY Regression: Coefficient of Determination (r squared)

Abbreviation: LinXYReg rsqrd
Category: Regression

Input Parameters:

Name	Range	Default
X Axis		Close
Y Axis		Close
Regression Periods	Int >= 3	40

Calculation:

LinXYReg r(X, Y, n) * LinXYReg r(X, Y, n)

where
X = X Axis
Y = Y Axis
n = Regression Periods

LinXYReg r represents Linear XY Regression: Coefficient of Correlation (r)

Discussion:

Computes the coefficient of determination (r squared) for the linear regression line. Statistically, the coefficient of determination is simply the ratio of the explained variation to the total variation. In simpler terms, the coefficient of determination is simply the ratio of the variation between the regression line y value and the y mean to the variation of each y value to the y mean. Note that the coefficient of determination is simply the square of the coefficient of correlation.

Linear XY Regression: Coefficient of Regression (Slope)

Abbreviation: LinXYReg Slope
Category: Regression

Input Parameters:

Name	Range	Default
X Axis		Close
Y Axis		Close
Regression Periods	Int >= 3	40

Calculation:

$$\frac{[\, n * \text{sum}(X*Y) - \text{sum}(X) * \text{sum}(Y) \,]}{[\, n * \text{sum}(X*X) - \text{sum}(X) * \text{sum}(X) \,]}$$

where
sum(X*X) = sum of X*X over the last n periods
sum(X*Y) = sum of X*Y over the last n periods
sum(X) = sum of X over the last n periods
sum(Y) = sum of Y over the last n periods

X = X Axis
Y = Y Axis
n = Regression Periods

Discussion:

Computes the slope of the linear regression line. Note that the linear regression line is the straight line that provides the best fit to the X and Y points over the last n periods.

Linear XY Regression: Standard Error of Estimate

Abbreviation: LinXYReg StndErr
Category: Regression

Input Parameters:

Name	Range	Default
X Axis		Close
Y Axis		Close
Regression Periods	Int >= 3	40

Calculation:

$$\text{sqrt} \left(\left[n*\text{sum}(Y*Y) - \text{sum}(Y)*\text{sum}(Y) - \frac{[n*\text{sum}(X*Y) - \text{sum}(X)*\text{sum}(Y)] \wedge 2}{n*\text{sum}(X*X) - \text{sum}(X)*\text{sum}(X)} \right] / [n*(n-1)] \right)$$

where
sum(X*X) = sum of X*X over the last n periods
sum(Y*Y) = sum of Y*Y over the last n periods
sum(X*Y) = sum of X*Y over the last n periods
sum(X) = sum of X over the last n periods
sum(Y) = sum of Y over the last n periods

X = X Axis
Y = Y Axis
n = Regression Periods

Discussion:

Computes the standard error of estimate for the linear regression. The standard error of estimate is simply the standard deviation of the vertical distance between the points and the linear regression line. Note that the linear regression line is the straight line that provides the best fit to the X and Y points over the last n periods.

Linear XY Regression: X intercept

Abbreviation: LinXYReg X Intercept
Category: Regression

Input Parameters:

Name	Range	Default
X Axis		Close
Y Axis		Close
Regression Periods	Int >= 3	40

Calculation:

-Yintercept(X, Y, n) / Slope(X, Y, n)

where
X = X Axis
Y = Y Axis
n = Window Size

Slope represents Linear XY Regression: Coefficient of Regression (Slope)
Yintercept represents Linear XY Regression: Y intercept

Discussion:

Computes the X value at which the linear regression line crosses the X axis. Note that the linear regression line is the straight line that provides the best fit to the X and Y points over the last n periods.

Linear XY Regression: Y intercept

Abbreviation: LinXYReg Y Intercept
Category: Regression

Input Parameters:

Name	Range	Default
X Axis		Close
Y Axis		Close
Regression Periods	Int >= 3	40

Calculation:

mean(Y) - Slope(X, Y, n) * mean(X)

where
mean(X) = mean average of X over the last n periods
mean(Y) = mean average of Y over the last n periods

X = X Axis
Y = Y Axis
n = Regression Periods

Slope represents Linear XY Regression: Coefficient of Regression (Slope)

Discussion:

Computes the Y value at which the linear regression line crosses the Y axis. Note that the linear regression line is the straight line that provides the best fit to the X and Y points over the last n periods.

Standard Deviation

Abbreviation: StndDev
Category: Statistical

Input Parameters:

Name	Range	Default
Time Series		Close
Periods	Int >= 2	10

Calculation:

Square root of Variance(X, n)

where
X = Time Series
n = Periods

Variance represents Variance

Discussion:

Provides a measure of a time series volatility.

Standard Normal: Z-Score

Abbreviation: StndNormZScore
Category: Statistical

Input Parameters:

Name	Range	Default
Time Series		Close
Periods	Int >= 2	10

Calculation:

$$\frac{X - \text{mean}(X)}{\text{StndDev}(X, n)}$$

where
mean(X) = mean average of X over the last n periods

X = Time Series
n = Periods

StndDev represents Standard Deviation

Discussion:

Provides a measure of a time series value relative to its mean expressed relative to its standard deviations. A value of one indicates a value one standard deviation above the mean, while a value of two indicates a value two standard deviations above the mean. Likewise, a value of negative one indicates a value one standard deviation below the mean, while a value of negative two indicates a value two standard deviations below the mean.

Standard Normal: Data Point

Abbreviation: StndNormPoint
Category: Statistical

Input Parameters:

Name	Range	Default
Time Series		
Periods	Int >= 2	10
Z-Score	Real	1.5

Calculation:

mean(X) + Z-Score * StndDev(X,n)

where
mean(X) = mean average of X over the last n periods

X = Time Series
n = Periods

StndDev represents Standard Deviation

Discussion:

Provides a data value relative to a time series mean and standard deviation. A Z-score of one returns the mean plus one standard deviation, while a Z-score of two returns the mean plus two standard deviations. Likewise, a Z-score of negative one returns the mean minus one standard deviation, while a Z-score of negative two returns the mean minus two standard deviations.

Variance

Abbreviation: Variance
Category: Statistical

Input Parameters:

Name	Range	Default
Time Series		Close
Periods	Int >= 2	10

Calculation:

$$\frac{n * sum(X*X) - sum(X) * sum(X)}{n\ (n - 1)}$$

where
sum(X*X) = sum of X*X over the last n periods
sum(X) = sum of X over the last n periods

X = Time Series
n = Periods

Discussion:

Provides a measure of a time series volatility.

Random (Be careful if used for trading)

Abbreviation: Random
Category: Statistical

Input Parameters:

Name	Range	Default
Minimum Value	Real	0
Maximum Value	Real	1

Calculation:

Uses Random number generator.

Discussion:

Provides a random number betw een the Minimum and Maximum values. This may be useful in determining the usefulness of a prediction, trading strategy, or indicator by comparing the results to a random value.

Note that this indicator is labled w ith "(Be careful if used for trading) because this indicator w ill change values w hen refreshed (loading a chart, adding data, etc.). If this indicator is used in a Trading Strategy or Prediction, every refresh of the chart w ill cause the Trading Strategy or Prediction to need rebacktesting or retraining.

Cosine (degrees)

Abbreviation: Cos(degrees)
Category: Trigonometric

Input Parameters:

Name	Range	Default
Angle(Degrees)		

Calculation:

Cosine(Angle)

where Angle is specified in degrees

Cosine (radians)

Abbreviation: Cos(radians)
Category: Trigonometric

Input Parameters:

Name	Range	Default
Angle(Radians)		

Calculation:

Cosine (Angle)

where Angle is specified in radians

Sine (degrees)

Abbreviation: Sin(degrees)
Category: Trigonometric

Input Parameters:

Name	Range	Default
Angle(Degrees)		

Calculation:

Sine (Angle)

where Angle is specified in degrees

Sine (radians)

Abbreviation: Sin(radians)
Category: Trigonometric

Input Parameters:

Name	Range	Default
Angle(Radians)		

Calculation:

Sine (Angle)

where Angle is specified in radians

Tangent (degrees)

Abbreviation: Tan(degrees)
Category: Trigonometric

Input Parameters:

Name	Range	Default
Angle(Degrees)		

Calculation:

Tangent (Angle)

where Angle is specified in degrees

Tangent (radians)

Abbreviation: Tan(radians)
Category: Trigonometric

Input Parameters:

Name	Range	Default
Angle(Radians)		

Calculation:

Tangent (Angle)

where Angle is specified in radians

Inverse Cosine (degrees)

Abbreviation: InvCos(degrees)
Category: Trigonometric

Input Parameters:

Name	Range	Default
Operand		

Calculation:

Inverse Cosine (Operand)

w here Inverse Cosine returns an answ er in degrees

Inverse Cosine (radians)

Abbreviation: InvCos(radians)
Category: Trigonometric

Input Parameters:

Name	Range	Default
Operand		

Calculation:

Inverse Cosine (Operand)

w here Inverse Cosine returns an answ er in radians

Inverse Sine (degrees)

Abbreviation: InvSin(degrees)
Category: Trigonometric

Input Parameters:

Name	Range	Default
Operand		

Calculation:

Inverse Sine (Operand)

w here Inverse Sine returns an answ er in degrees

Inverse Sine (radians)

Abbreviation: InvSin(radians)
Category: Trigonometric

Input Parameters:

Name	Range	Default
Operand		

Calculation:

Inverse Sine (Operand)

w here Inverse Sine returns an answ er in radians

Inverse Tangent (degrees)

Abbreviation: InvTan(degrees)
Category: Trigonometric

Input Parameters:

Name	Range	Default
Operand		

Calculation:

Inverse Tangent (Operand)

w here Inverse Tangent returns an answ er in degrees

Inverse Tangent (radians)

Abbreviation: InvTan(radians)
Category: Trigonometric

Input Parameters:

Name	Range	Default
Operand		

Calculation:

Inverse Tangent (Operand)

where Inverse Tangent returns an answer in radians

Hyperbolic Cosine (degrees)

Abbreviation: HypCos(degrees)
Category: Trigonometric

Input Parameters:

Name	Range	Default
Angle(Degrees)		

Calculation:

Hyperbolic Cosine(Angle)

where Angle is specified in degrees

Hyperbolic Cosine (radians)

Abbreviation: HypCos(radians)
Category: Trigonometric

Input Parameters:

Name	Range	Default
Angle(Radians)		

Calculation:

Hyperbolic Cosine (Angle)

where Angle is specified in radians

Hyperbolic Sine (degrees)

Abbreviation: HypSin(degrees)
Category: Trigonometric

Input Parameters:

Name	Range	Default
Angle(Degrees)		

Calculation:

Hyperbolic Sine (Angle)

w here Angle is specified in degrees

Hyperbolic Sine (radians)

Abbreviation: HypSin(radians)
Category: Trigonometric

Input Parameters:

Name	Range	Default
Angle(Radians)		

Calculation:

Hyperbolic Sine (Angle)

w here Angle is specified in radians

Hyperbolic Tangent (degrees)

Abbreviation: HypTan(degrees)
Category: Trigonometric

Input Parameters:

Name	Range	Default
Angle(Degrees)		

Calculation:

Hyperbolic Tangent (Angle)

where Angle is specified in degrees

Hyperbolic Tangent (radians)

Abbreviation: HypTan(radians)
Category: Trigonometric

Input Parameters:

Name	Range	Default
Angle(Radians)		

Calculation:

Hyperbolic Tangent (Angle)

where Angle is specified in radians

And2

Abbreviation: And2
Category: Boolean

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		

Calculation:

And (Operand #1, Operand #2)

w here all operations are Boolean (bitw ise) operations

Note: The And function returns true if all of the operands are true (1). The And function returns false if one or more of the operands is false (0).

And3

Abbreviation: And3
Category: Boolean

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		

Calculation:

And (Operand #1, Operand #2, Operand #3)

w here all operations are Boolean (bitw ise) operations

Note: The And function returns true if all of the operands are true (1). The And function returns false if one or more of the operands is false (0).

And4

Abbreviation: And4
Category: Boolean

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		
Operand #4		

Calculation:

And (Operand #1, Operand #2, Operand #3, Operand #4)

where all operations are Boolean (bitwise) operations

Note: The And function returns true if all of the operands are true (1). The And function returns false if one or more of the operands is false (0).

Or2

Abbreviation: Or2
Category: Boolean

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		

Calculation:

Or(Operand #1, Operand #2)

where all operations are Boolean (bitwise) operations

Note: The Or function returns true if one or more of the operands is true (1). The Or function returns false if all of the operands are false (0).

Or3

Abbreviation: Or3
Category: Boolean

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		

Calculation:

Or(Operand #1, Operand #2, Operand #3)

w here all operations are Boolean (bitw ise) operations

Note: The Or function returns true if one or more of the operands is true (1). The Or function returns false if all of the operands are false (0).

Or4

Abbreviation: Or4
Category: Boolean

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		
Operand #4		

Calculation:

Or(Operand #1, Operand #2, Operand #3, Operand #4)

where all operations are Boolean (bitwise) operations

Note: The Or function returns true if one or more of the operands is true (1). The Or function returns false if all of the operands are false (0).

Not

Abbreviation: Not
Category: Boolean

Input Parameters:

Name	Range	Default
Operand		

Calculation:

Not(Operand)

where all operations are Boolean (bitwise) operations

Note: The Not function returns true if the operand is false (0). The Not function returns false if the operand is true (1).

Xor2

Abbreviation: Xor2
Category: Boolean

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		

Calculation:

Exclusive Or(Operand #1, Operand #2)

where all operations are Boolean (bitwise) operations

Note: The Exclusive Or function returns true if only one of the operands is true (1). The Exclusive Or function returns false if both of the operands are true (1) or both of the operands are false (0).

Xor3

Abbreviation: Xor3
Category: Boolean

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		

Calculation:

Exclusive Or(Exclusive Or(Operand #1, Operand #2), Operand #3)

where all operations are Boolean (bitwise) operations

Note: The Exclusive Or function returns true if only one of the operands is true (1). The Exclusive Or function returns false if more than one of the operands is true (1) or more than one of the operands is false (0).

Xor4

Abbreviation: Xor4
Category: Boolean

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		
Operand #4		

Calculation:

Exclusive Or(Exclusive Or(Exclusive Or(Operand #1, Operand #2), Operand #3), Operand #4)

where all operations are Boolean (bitwise) operations

Note: The Exclusive Or function returns true if only one of the operands is true (1). The Exclusive Or function returns false if more than one of the operands is true (1) or more than one of the operands is false (0).

Nand2

Abbreviation: Nand2
Category: Boolean

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		

Calculation:

Not(And2(Operand #1, Operand #2))

where all operations are Boolean (bitwise) operations

Not represents Not
And2 represents And2

Nand3

Abbreviation: Nand3
Category: Boolean

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		

Calculation:

Not(And3(Operand #1, Operand #2, Operand #3))

w here all operations are Boolean (bitw ise) operations

Not represents Not
And3 represents And3

Nand4

Abbreviation: Nand4
Category: Boolean

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		
Operand #4		

Calculation:

Not(And4(Operand #1, Operand #2, Operand #3, Operand #4))

where all operations are Boolean (bitwise) operations

Not represents Not
And4 represents And4

Nor2

Abbreviation: Nor2
Category: Boolean

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		

Calculation:

Not(Or2(Operand #1, Operand #2))

w here all operations are Boolean (bitw ise) operations

Not represents Not
Or2 represents Or2

Nor3

Abbreviation: Nor3
Category: Boolean

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		

Calculation:

Not(Or3(Operand #1, Operand #2, Operand #3))

w here all operations are Boolean (bitw ise) operations

Not represents Not
Or3 represents Or3

Nor4

Abbreviation: Nor4
Category: Boolean

Input Parameters:

Name	Range	Default
Operand #1		
Operand #2		
Operand #3		
Operand #4		

Calculation:

Not(Or4(Operand #1, Operand #2, Operand #3, Operand #4))

w here all operations are Boolean (bitw ise) operations

Not represents Not
Or4 represents Or4

A not equal B

Abbreviation: A not equal B
Category: Relational

Input Parameters:

Name	Range	Default
A		
B		

Calculation:

If A does not equal B then equals 1 otherwise equals 0

A < B

Abbreviation: A<B
Category: Relational

Input Parameters:

Name	Range	Default
A		
B		

Calculation:

If A is less than B then equals 1 otherwise equals 0

A < B < C

Abbreviation: A<B<C
Category: Relational

Input Parameters:

Name	Range	Default
A		
B		
C		

Calculation:

If A is less than B and B is less than C then equals 1 otherwise equals 0

A < B

Abbreviation: A<B
Category: Relational

Input Parameters:

Name	Range	Default
A		
B		

Calculation:

If A is less than B then equals 1 otherwise equals 0

A < B

Abbreviation: A<B
Category: Relational

Input Parameters:

Name	Range	Default
A		
B		

Calculation:

If A is less than B then equals 1 otherwise equals 0

A > B

Abbreviation: A>B
Category: Relational

Input Parameters:

Name	Range	Default
A		
B		

Calculation:

If A is greater than B then equals 1 otherwise equals 0

A > B > C

Abbreviation: A>B>C
Category: Relational

Input Parameters:

Name	Range	Default
A		
B		
C		

Calculation:

If A is greater than B and B is greater than C then equals 1 otherwise equals 0

A > B

Abbreviation: A>B
Category: Relational

Input Parameters:

Name	Range	Default
A		
B		

Calculation:

If A is greater than B then equals 1 otherwise equals 0

A > B

Abbreviation: A>B
Category: Relational

Input Parameters:

Name	Range	Default
A		
B		

Calculation:

If A is greater than B then equals 1 otherwise equals 0

If CONDITION #1 then =X elseif CONDITION #2 then =Y else =Z

Abbreviation: If CONDITION #1 then =X elseif CONDITION #2 then =Y else =Z
Category: Rules

Input Parameters:

Name	Range	Default
CONDITION #1		
X		
CONDITION #2		
Y		
Z		

Calculation:

If CONDITION #1 then equals X otherwise if CONDITION #2 then equals Y otherwise equals Z

If CONDITION #1 then =X elseif CONDITION #2 then =Y else =Z

Abbreviation: If CONDITION #1 then =X elseif CONDITION #2 then =Y else =Z
Category: Rules

Input Parameters:

Name	Range	Default
CONDITION #1		
X		
CONDITION #2		
Y		
Z		

Calculation:

If CONDITION #1 then equals X otherw ise if CONDITION #2 then equals Y otherw ise equals Z

System Equity: All Trades

Abbreviation: SystemEquity
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

(Gross Profit) - (Gross Loss) + Open Position Profit

For long trades,
Open Position Profit = (current price - entry price) * shares - commissions

For short trades,
Open Position Profit = (entry price - current price) * shares - commissions

Note that the entry price incorporate any specified slippage and/or point value.

Discussion:

Returns the total dollars profit/loss for all previous trades combined w ith any open position profit/loss. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

System Equity: Long Trades

Abbreviation: SystemEquityLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

(Gross Long Profit) - (Gross Long Loss) + Open Long Position Profit

For long trades,
Open Position Profit = (current price - entry price) * shares - commissions

Note that the entry price incorporate any specified slippage and/or point value.

Discussion:

Returns the total dollars profit/loss for all previous trades combined w ith any open position profit/loss. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

System Equity: Short Trades

Abbreviation: SystemEquityShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

(Gross Short Profit) - (Gross Short Loss) + Open Short Position Profit

For short trades,
Open Position Profit = (entry price - current price) * shares - commissions

Note that the entry price incorporate any specified slippage and/or point value.

Discussion:

Returns the total dollars profit/loss for all previous trades combined w ith any open position profit/loss. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Net Profit: All Trades

Abbreviation: NetProfit
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

(Gross Profit) - (Gross Loss)

Discussion:

Returns the total dollars profit/loss for previous trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Net Profit: Long Trades

Abbreviation: NetProfitLong

Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

(Gross Long Profit) - (Gross Long Loss)

Discussion:

Returns the total dollars profit/loss for previous long trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Net Profit: Short Trades

Abbreviation: NetProfitShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

(Gross Short Profit) - (Gross Short Loss)

Discussion:

Returns the total dollars profit/loss for previous short trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Gross Profit: All Trades

Abbreviation: GrossProfit
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of all Trade Losses

For long trades w ith an entry price < exit price,
Trade Profit = (exit price - entry price) * shares - commissions

For short trades w ith an exit price < entry price,
Trade Profit = (entry price - exit price) * shares - commissions

Note that the entry and exit price incorporate any specified slippage and/or point value.

Discussion:

Returns the total profit for all previous w inning trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Gross Profit: Long Trades

Abbreviation: GrossProfitLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of all Long Trade Losses

For long trades with an entry price < exit price,
Trade Profit = (exit price - entry price) * shares - commissions

Note that the entry and exit price incorporate any specified slippage and/or point value.

Discussion:

Returns the total profit for all previous winning long trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Gross Profit: Short Trades

Abbreviation: GrossProfitShort

Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of all Short Trade Losses

For short trades with an exit price < entry price,

Trade Profit = (entry price - exit price) * shares - commissions

Note that the entry and exit price incorporate any specified slippage and/or point value.

Discussion:

Returns the total profit for all previous winning short trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Gross Loss: All Trades

Abbreviation: GrossLoss
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of all Trade Losses

For long trades with an entry price > exit price,
Trade Loss = (entry price - exit price) * shares traded - commissions

For short trades with an exit price > entry price,
Trade Loss = (exit price - entry price) * shares traded - commissions.

Note that the entry and exit price incorporate any specified slippage and/or point value.

Discussion:

Returns the total loss for all previous losing trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Gross Loss: Long Trades

Abbreviation: GrossLossLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of all Long Trade Losses

For long trades with an entry price > exit price,
Trade Loss = (entry price - exit price) * shares traded - commissions

Note that the entry and exit price incorporate any specified slippage and/or point value.

Discussion:

Returns the total loss for all previous losing long trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Gross Loss: Short Trades

Abbreviation: GrossLossShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of all Short Trade Losses

For short trades with an exit price > entry price,
Trade Loss = (exit price - entry price) * shares traded - commissions.

Note that the entry and exit price incorporate any specified slippage and/or point value.

Discussion:

Returns the total loss for all previous losing short trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Open Position Profit: All Trades

Abbreviation: OpenPositionProfit
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

For long trades,
(price - entry price) * shares traded

For short trades,
(entry price - price) * shares traded

Note that the entry price incorporates any specified slippage and/or point value.

Discussion:

Computes the current open position profit. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Open Position Profit: Long Trades

Abbreviation: OpenPositionProfitLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

(price - entry price) * shares traded

Note that the entry price incorporates any specified slippage and/or point value.

Discussion:

Computes the current open long position profit. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Open Position Profit: Short Trades

Abbreviation: OpenPositionProfitShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

(entry price - price) * shares traded

Note that the entry price incorporates any specified slippage and/or point value.

Discussion:

Computes the current open short position profit. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

System Drawdown: All Trades

Abbreviation: SystemDrawdown
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

(Largest Net Profit prior to trade entry) - (Net Profit prior to trade entry) - (Position Drawdown)

Discussion:

Returns the difference between the highest closed trade equity and the open trade losing equity. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

System Drawdown: Long Trades

Abbreviation: SystemDraw dow nLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

(Largest Long Net Profit prior to trade entry) - (Net Long Profit prior to trade entry) - (Long Position Draw dow n)

Discussion:

Returns the difference betw een the highest closed trade equity and the open trade losing equity for long trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

System Drawdown: Short Trades

Abbreviation: SystemDrawdownShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

(Largest Short Net Profit prior to trade entry) - (Short Net Profit prior to trade entry) - (Short Position Drawdown)

Discussion:

Returns the difference between the highest closed trade equity and the open trade losing equity for short trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Position Drawdown: All Trades

Abbreviation: PositionDrawdown
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

(shares traded) * [(entry price) - (worst price during the trade)]

Note that the entry price incorporates any specified slippage and/or point value.

Discussion:

Returns the open trade losing equity. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Position Drawdown: Long Trades

Abbreviation: PositionDrawdownLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

(shares traded) * [(entry price) - (worst price during the trade)]

Note that the entry price incorporates any specified slippage and/or point value.

Discussion:

Returns the open trade losing equity. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Position Drawdown: Short Trades

Abbreviation: PositionDrawdownShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

(shares traded) * [(entry price) - (worst price during the trade)]

Note that the entry price incorporates any specified slippage and/or point value.

Discussion:

Returns the open trade losing equity. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Return on Trades: All Trades

Abbreviation: %RetTrd
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of returns for all previous trades

For long trades,
Return = 100 * (exit price - entry price - commissions) / (entry price + commissions)

For short trades
Return = 100 * (entry price - exit price - commissions) / (entry price + commissions)

Note that the entry and exit price incorporate any specified slippage and/or point value.

Discussion:

Computes the total percent return for all previous trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Return on Trades: Long Trades

Abbreviation: %RetTrdLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of returns for all previous long trades

For long trades,
Return = 100 * (exit price - entry price - commissions) / (entry price + commissions)

Note that the entry and exit price incorporate any specified slippage and/or point value.

Discussion:

Computes the total percent return for all previous long trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Return on Trades: Short Trades

Abbreviation: %RetTrdShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of returns for all previous short trades

For short trades
Return = 100 * (entry price - exit price - commissions) / (entry price + commissions)

Note that the entry and exit price incorporate any specified slippage and/or point value.

Discussion:

Computes the total percent return for all previous short trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Return on Account: All Trades

Abbreviation: %RetAccnt
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

100 * (Net Profit) / (Account Size Required)

Discussion:

Computes the net profit relative to the account size required for all previous trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Return on Account: Long Trades

Abbreviation: %RetAccntLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

100 * (Long Net Profit) / (Long Account Size Required)

Discussion:

Computes the net profit relative to the account size required for all previous long trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Return on Account: Short Trades

Abbreviation: %RetAccntShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

100 * (Short Net Profit) / (Short Account Size Required)

Discussion:

Computes the net profit relative to the account size required for all previous short trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Account Size Required: All Trades

Abbreviation: RequiredAccountSize
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

If a margin per contract has been selected for the trading strategy, then

Required Account Size = (Maximum Drawdown) + (Margin Per Contract) * (Largest Contracts Traded)

If no margin per contract has been selected, then

Required Account Size = largest previous Entry Cost

where
Entry Cost = (number of shares traded) * (entry price) - (Net Profit prior to trade entry).

Note that the entry price incorporates any specified slippage and/or point value.

Discussion:

Computes the amount of money you would have needed in your account to trade the trading strategy given all the previous trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Account Size Required: Long Trades

Abbreviation: RequiredAccountSizeLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

If a margin per contract has been selected for the trading strategy, then

Required Account Size for Long Trades = (Maximum Drawdown) + (Margin Per Contract) * (Largest Long Contracts Traded)

If no margin per contract has been selected, then

Required Account Size for Long Trades = largest previous Long Entry Cost

where
Long Entry Cost = (number of shares traded) * (entry price) - (Net Long Profit prior to trade entry).

Note that the entry price incorporates any specified slippage and/or point value.

Discussion:

Computes the amount of money you would have needed in your account to trade the trading strategy given all the previous long trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Account Size Required: Short Trades

Abbreviation: RequiredAccountSizeShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

If a margin per contract has been selected for the trading strategy, then

Required Account Size for Short Trades = (Maximum Drawdown) + (Margin Per Contract) * (Largest Short Contracts Traded)

If no margin per contract has been selected, then

Required Account Size for Short Trades = largest previous Short Entry Cost

where
Short Entry Cost = (number of shares traded) * (entry price) - (Net Short Profit prior to trade entry).

Note that the entry price incorporates any specified slippage and/or point value.

Discussion:

Computes the amount of money you would have needed in your account to trade the trading strategy given all the previous short trades. When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Number Trades: All Trades

Abbreviation: NumTrades

Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Number of previous trades

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Number Trades: Long Trades

Abbreviation: NumTradesLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Number of previous long trades

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Number Trades: Short Trades

Abbreviation: NumTradesShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Number of previous short trades

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Number Winning Trades: All Trades

Abbreviation: NumWinners
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Number of previous winning trades

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Number Winning Trades: Long Trades

Abbreviation: NumWinnersLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Number of previous winning long trades

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Number Winning Trades: Short Trades

Abbreviation: NumWinnersShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Number of previous winning short trades

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Number Losing Trades: All Trades

Abbreviation: NumLosers
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Number of previous losing trades

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Number Losing Trades: Long Trades

Abbreviation: NumLosersLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Number of previous losing long trades

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Number Losing Trades: Short Trades

Abbreviation: NumLosersShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Number of previous losing short trades

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Consecutive Winners: All Trades

Abbreviation: ConsecWinners
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Number of consecutive winning trades since the last losing trade

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Consecutive Winners: Long Trades

Abbreviation: ConsecWinnersLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Number of consecutive winning long trades since the last losing long trade

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Consecutive Winners: Short Trades

Abbreviation: ConsecWinnersShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Number of consecutive winning short trades since the last losing short trade

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Consecutive Losers: All Trades

Abbreviation: ConsecLosers
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Number of consecutive losing trades since the last winning trade

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Consecutive Losers: Long Trades

Abbreviation: ConsecLosersLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Number of consecutive losing long trades since the last winning long trade

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Consecutive Losers: Short Trades

Abbreviation: ConsecLosersShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Number of consecutive losing short trades since the last winning short trade

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Total Trade Span: All Trades

Abbreviation: TotalTradeSpan
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the number of bars between the entry order signal and the exit order execution for all previous trades.

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Total Trade Span: Long Trades

Abbreviation: TotalTradeSpanLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the number of bars between the entry order signal and the exit order execution for all previous long trades.

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Total Trade Span: Short Trades

Abbreviation: TotalTradeSpanShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the number of bars between the entry order signal and the exit order execution for all previous short trades.

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Total Winning Trade Span: All Trades

Abbreviation: TotalWinningSpan
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the number of bars between the entry order signal and the exit order execution for all previous winning trades.

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Total Winning Trade Span: Long Trades

Abbreviation: TotalWinningSpanLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the number of bars between the entry order signal and the exit order execution for all previous winning long trades.

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Total Winning Trade Span: Short Trades

Abbreviation: TotalWinningSpanShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the number of bars between the entry order signal and the exit order execution for all previous winning short trades.

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Total Losing Trade Span: All Trades

Abbreviation: TotalLosingSpan
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the number of bars between the entry order signal and the exit order execution for all previous losing trades.

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Total Losing Trade Span: Long Trades

Abbreviation: TotalLosingSpanLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the number of bars between the entry order signal and the exit order execution for all previous losing long trades.

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Total Losing Trade Span: Short Trades

Abbreviation: TotalLosingSpanShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the number of bars between the entry order signal and the exit order execution for all previous losing short trades.

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Total Shares Traded: All Trades

Abbreviation: TotalSharesTraded
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the number of shares traded during all previous trades.

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Total Shares Traded: Long Trades

Abbreviation: TotalSharesTradedLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the number of shares traded during all previous long trades.

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Total Shares Traded: Short Trades

Abbreviation: TotalSharesTradedShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the number of shares traded during all previous short trades.

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Total Winning Shares Traded: All Trades

Abbreviation: TotalWinningShares
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the number of shares traded during all previous w inning trades.

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Total Winning Shares Traded: Long Trades

Abbreviation: TotalWinningSharesLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the number of shares traded during all previous winning long trades.

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Total Winning Shares Traded: Short Trades

Abbreviation: TotalWinningSharesShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the number of shares traded during all previous winning short trades.

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Total Losing Shares Traded: All Trades

Abbreviation: TotalLosingShares
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the number of shares traded during all previous losing trades.

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Total Losing Shares Traded: Long Trades

Abbreviation: TotalLosingSharesLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the number of shares traded during all previous losing long trades.

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Total Losing Shares Traded: Short Trades

Abbreviation: TotalLosingSharesShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the number of shares traded during all previous losing short trades.

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Commissions Paid: All Trades

Abbreviation: Commissions
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the commissions paid for all previous trades

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Commissions Paid: Long Trades

Abbreviation: CommissionsLong
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the commissions paid for all previous long trades

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Commissions Paid: Short Trades

Abbreviation: CommissionsShort
Category: Trading Strategy: System Information

Input Parameters:

Name	Range	Default
Trading Strategy		

Calculation:

Sum of the commissions paid for all previous short trades

Discussion:

When graphed, provides a useful means of analyzing, troubleshooting and improving a trading strategy.

Bars Active

Abbreviation: BarsActive
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
# Postions Ago	Int >= 0	0

Calculation:

For the current position (# positions ago = 0), the Bars Active is the number of bars since the entry signal. For previous positions (# positions ago >= 1), the Bars Active is the number of bars betw een the entry signal and w hen the exit order w as filled.

Discussion:

This indicator is useful for creating custom trading strategy exit conditions based upon the number of active bars in the current position or previous positions.

Bars Filled

Abbreviation: BarsFilled
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
# Postions Ago	Int >= 0	0

Calculation:

For the current position (# positions ago = 0), the Bars Filled is the number of bars since the entry ordered w as filled. For previous positions (# positions ago >= 1), the Bars Filled is the number of bars betw een w hen the entry order w as filled and the exit order w as filled.

Discussion:

This indicator is useful for creating custom trading strategy exit conditions based upon the number of filled bars in the current position or previous positions.

Bars Since Entry Activated

Abbreviation: BarsSinceEntryAct
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
# Activations Ago	Int >= 1	1

Calculation:

Bars Since Entry Activated is the number of bars betw een the entry signal and the current bar.

Discussion:

This indicator is useful for creating custom trading strategy exit conditions based upon the number of bars since a previous postion w as activated.

Bars Since Entry Filled

Abbreviation: BarsSinceEntryFill
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
# Fills Ago	Int >= 1	1

Calculation:

Bars Since Entry Filled is the number of bars between when a position's entry signal was filled and the current bar.

Discussion:

This indicator is useful for creating custom trading strategy exit conditions based upon the number of bars since a previous position was filled.

Bars Since Exit Activated

Abbreviation: BarsSinceExitAct
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
# Activations Ago	Int >= 1	1

Calculation:

Bars Since Exit Activated is the number of bars betw een a position's exit signal and the current bar.

Discussion:

This indicator is useful for creating custom trading strategy exit conditions based upon the number of bars since a previous postion's exit w as activated.

Bars Since Exit Filled

Abbreviation: BarsSinceExitFill
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
# Fills Ago	Int >= 1	1

Calculation:

Bars Since Exit Filled is the number of bars between when a position's exit signal was filled and the current bar.

Discussion:

This indicator is useful for creating custom trading strategy exit conditions based upon the number of bars since a previous position's exit signal was filled.

Entry Price

Abbreviation: EntryPrice
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
# Postions Ago	Int >= 0	0

Calculation:

The price at which a position's entry signal was filled. The type of entry order being used (market, stop, limit, …) and any value specified for slippage in the trading strategy parameters will affect the value of this indicator. If a market order is being used and no slippage has been specified, the entry price will be equal to the opening price on the bar after the entry signal.

Discussion:

This indicator is useful for creating custom trading strategy exit conditions and trailing stops based upon the entry price for the current position or a previous position.

Exit Price

Abbreviation: ExitPrice
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
# Postions Ago	Int >= 1	1

Calculation:

The price at which a position's exit signal was filled. The type of exit order being used (market, stop, limit, …) and any value specified for slippage in the trading strategy parameters will affect the value of this indicator. If a market order is being used and no slippage has been specified, the exit price will be equal to the opening price on the bar after the exit signal.

Discussion:

This indicator is useful for creating custom trading strategy exit conditions and trailing stops based upon the exit price for a previous position.

Position

Abbreviation: Position
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
# Postions Ago	Int >= 0	0

Calculation:

For the current position (# positions ago = 0), the value of Position is 1 if the current position is long, 0 if no position exists, and -1 if the current position is short. For previous positions (# positions ago >= 1), the value of Position is 1 if the position w as long and -1 if the position w as short.

Discussion:

Indicates w hether previous positions w ere long or short. Very useful w hen creating custom entry signals, trailing stops, and exit signals for a trading strategy.

Value when Entry Activated

Abbreviation: ValueEntryAct
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
Time Series		Close
# Activations Ago	Int >= 1	1

Calculation:

Returns the value of Time Series on the bar that the postion's entry signal occured.

Discussion:

Provides the value of an indicator or time series when the current position or a previous position was signaled. Very useful when creating custom entry signals, trailing stops, and exit signals for a trading strategy.

Value when Entry Filled

Abbreviation: ValueEntryFill
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
Time Series		Close
# Fills Ago	Int >= 1	1

Calculation:

Returns the value of Time Series on the bar that the postion's entry signal was filled.

Discussion:

Provides the value of an indicator or time series when the current position or a previous position was filled. Very useful when creating custom entry signals, trailing stops, and exit signals for a trading strategy.

Value when Exit Activated

Abbreviation: ValueExitAct
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
Time Series		Close
# Activations Ago	Int >= 1	1

Calculation:

Returns the value of Time Series on the bar that the postion's exit signal occured.

Discussion:

Provides the value of an indicator or time series when a previous position's exit was signaled. Very useful when creating custom entry signals, trailing stops, and exit signals for a trading strategy.

Value when Exit Filled

Abbreviation: ValueExitFill
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
Time Series		Close
# Fills Ago	Int >= 1	1

Calculation:

Returns the value of Time Series on the bar that the postion's exit signal was filled.

Discussion:

Provides the value of an indicator or time series when a previous position's exit was filled. Very useful when creating custom entry signals, trailing stops, and exit signals for a trading strategy.

Maximum Value Since Entry Activated

Abbreviation: MaxValueEntryAct
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
Time Series		Close
# Activations Ago	Int >= 1	1

Calculation:

Returns the maximum value of Time Series since the bar that the postion's entry signal occured.

Discussion:

Provides the maximum value of an indicator or time series since when the current position or a previous position was signaled. Very useful when creating custom entry signals, trailing stops, and exit signals for a trading strategy.

Maximum Value Since Entry Filled

Abbreviation: MaxValueEntryFill

Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
Time Series		Close
# Fills Ago	Int >= 1	1

Calculation:

Returns the maximum value of Time Series since the bar that the postion's entry signal was filled.

Discussion:

Provides the maximum value of an indicator or time series since when the current position or a previous position was filled. Very useful when creating custom entry signals, trailing stops, and exit signals for a trading strategy.

Maximum Value Since Exit Activated

Abbreviation: MaxValueExitAct

Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
Time Series		Close
# Activations Ago	Int >= 1	1

Calculation:

Returns the maximum value of Time Series since the bar that the postion's exit signal occured.

Discussion:

Provides the maximum value of an indicator or time series since when a previous position's exit was signaled. Very useful when creating custom entry signals, trailing stops, and exit signals for a trading strategy.

Maximum Value Since Exit Filled

Abbreviation: MaxValueExitFill
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
Time Series		Close
# Fills Ago	Int >= 1	1

Calculation:

Returns the maximum value of Time Series since the bar that the postion's exit signal was filled.

Discussion:

Provides the maximum value of an indicator or time series since when a previous position's exit was filled. Very useful when creating custom entry signals, trailing stops, and exit signals for a trading strategy.

Minimum Value Since Entry Activated

Abbreviation: MinValueEntryAct

Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
Time Series		Close
# Activations Ago	Int >= 1	1

Calculation:

Returns the minimum value of Time Series since the bar that the postion's entry signal occured.

Discussion:

Provides the minimum value of an indicator or time series since when the current position or a previous position was signaled. Very useful when creating custom entry signals, trailing stops, and exit signals for a trading strategy.

Minimum Value Since Entry Filled

Abbreviation: MinValueEntryFill
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
Time Series		Close
# Fills Ago	Int >= 1	1

Calculation:

Returns the minimum value of Time Series since the bar that the postion's entry signal was filled.

Discussion:

Provides the minimum value of an indicator or time series since when the current position or a previous position was filled. Very useful when creating custom entry signals, trailing stops, and exit signals for a trading strategy.

Minimum Value Since Exit Activated

Abbreviation: MinValueExitAct
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
Time Series		Close
# Activations Ago	Int >= 1	1

Calculation:

Returns the minimum value of Time Series since the bar that the postion's exit signal occured.

Discussion:

Provides the minimum value of an indicator or time series since when a previous position's exit was signaled. Very useful when creating custom entry signals, trailing stops, and exit signals for a trading strategy.

Minimum Value Since Exit Filled

Abbreviation: MinValueExitFill
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
Time Series		Close
# Fills Ago	Int >= 1	1

Calculation:

Returns the minimum value of Time Series since the bar that the postion's exit signal was filled.

Discussion:

Provides the minimum value of an indicator or time series since when a previous position's exit was filled. Very useful when creating custom entry signals, trailing stops, and exit signals for a trading strategy.

Entry Price: Percent Activation

Abbreviation: EntryPrice%
Category: Trading Strategy: Protective Stops

Input Parameters:

Name	Range	Default
Trading Strategy		
Percent Gain Before Acitvation	Real >= 0	10

Calculation:

For a long position,
If [100 * (high - entry price) / entry price] is greater than the [Percent Gain Before Activation], then
Entry Price: Percent Activation = Entry Price
Else
Entry Price: Percent Activation = (No value)

For a short position
If [100 * (entry price - low) / entry price] is greater than [Percent Gain Before Activation], then
Entry Price: Percent Activation = Entry Price
Else
Entry Price: Percent Activation = (No value)

Discussion:

This indicator is useful for creating a trading strategy protective stop at the entry price once the price has advanced the specified percentage.

Example:

If your entry price is 100 and your Percent Gain Before Activation is 10 then:

for a long position, you won't have a protective stop in place until the price goes above 110 (10% above the entry price), at which point a stop is placed at 100 (the entry price). The stop order will be activated once the price drops down to 100, at which point you will exit your long position.

for a short position, you won't have a protective stop in place until the price goes below 90 (10% below the entry price), at which point a stop is placed at 100 (the entry price). The stop order will be activated once the price rises to 100, at which point you will exit your long position.

Entry Price: Point Activation

Abbreviation: EntryPricePnts
Category: Trading Strategy: Protective Stops

Input Parameters:

Name	Range	Default
Trading Strategy		
Point Gain Before Acitvation	Real >= 0	5

Calculation:

For a long position,
If (high - entry price) is greater than the (Point Gain Before Activation), then
Entry Price: Point Activation = Entry Price
Else
Entry Price: Point Activation = (No value)

For a short position,
If (entry price - low) is greater than (Point Gain Before Activation), then
Entry Price: Point Activation = Entry Price
Else
Entry Price: Point Activation = (No value)

Discussion:

This indicator is useful for creating a trading strategy protective stop at the entry price once the price has advanced by the specified number of price points.

Example:

If your entry price is 100 and your Point Gain Before Activation is 10 then:

for a long position, you won't have a protective stop in place until the price goes above 110 (10 points above the entry price), at which point a stop is placed at 100 (the entry price). The stop order will be activated once the price drops down to 100, at which point you will exit your long position.

for a short position, you won't have a protective stop in place until the price goes below 90 (10 points below the entry price), at which point a stop is placed at 100 (the entry price). The stop order will be activated once the price rises to 100, at which point you will exit your long position.

Price Floor: Percent

Abbreviation: PriceFloor%
Category: Trading Strategy: Protective Stops

Input Parameters:

Name	Range	Default
Trading Strategy		
Percent Below Entry	Real >= 0	10

Calculation:

For a long position,
Price Floor: Percent = Entry Price - Entry Price * Percent Below Entry Price / 100

For a short position,
Price Floor: Percent = Entry Price + Entry Price * Percent Below Entry Price / 100

Discussion:

This indicator is useful for creating a trading strategy protective stop at a specified percentage below the entry price.

Example:

If your entry price is 100 and your Percent Below Entry is 10 then:

for a long position, a stop is placed at 90 (10% below the entry price). The stop order will be activated once the price drops down to 90, at which point you will exit your long position.

for a short position, a stop is placed at 110 (10% above the entry price). The stop order will be activated once the price rises to 110, at which point you will exit your short position.

Price Floor: Points

Abbreviation: PriceFloorPnts
Category: Trading Strategy: Protective Stops

Input Parameters:

Name	Range	Default
Trading Strategy		
Points Below Entry Price	Real >= 0	5

Calculation:

For a long position,
Price Floor: Points = Entry Price - Points Below Entry Price

For a short position,
Price Floor: Points = Entry Price + Points Below Entry Price

Discussion:

This indicator is useful for creating a trading strategy protective stop at a specified number of price points below the entry price.

Example:

If your entry price is 100 and your Point Gain Before Activation is 10 then:

for a long position, a stop is placed at 90 (10 points below the entry price). The stop order will be activated once the price drops down to 90, at which point you will exit your long position.

for a short position, a stop is placed at 110 (10 points above the entry price). The stop order will be activated once the price rises to 110, at which point you will exit your short position.

Trailing Price: Percent

Abbreviation: TrailPrice%

Category: Trading Strategy: Protective Stops

Input Parameters:

Name	Range	Default
Trading Strategy		
Percent Trailing	Real >= 0	10

Calculation:

For a long position,

Trailing Price: Percent = Best Price - Best Price * Percent Trailing / 100

Best Price = maximum High Price since the position was entered

For a short position,

Trailing Price: Percent = Best Price + Best Price * Percent Trailing / 100

Best Price = minimum Low Price since the position was entered

Discussion:

This indicator is useful for creating a trading strategy trailing stop that trails price movement by a specified percentage.

Example:

If your entry price is 100 and your Percent Trailing is 10 then:

for a long position, a stop is placed at 90 initially and it will change if the issue increases in value. The value of the trailing stop will be 10% below the best price since the entry price. This means that if the stock climbs to 110, the trailing stop will be calculated to be 99 (10% below 110). Once the stop is placed at 99 it will never go down. The stop order will be activated once the price drops down to the value of the trailing stop, at which point you will exit your long position.

for a short position, a stop is placed at 110 initially and it will change if the issue decreases in value. The value of the trailing stop will be 10% above the lowest price since the entry price. This means that if the stock falls to 90, the trailing stop will be calculated to be 99 (10% above 90). Once the stop is placed at 99 it will never go up. The stop order will be activated once the price rises to the value of the trailing stop, at which point you will exit your short position.

Trailing Price: Points

Abbreviation: TrailPricePnts
Category: Trading Strategy: Protective Stops

Input Parameters:

Name	Range	Default
Trading Strategy		
Points Trailing	Real >= 0	5

Calculation:

For a long position,
Trailing Price: Points = Best Price - Points Trailing
Best Price = maximum High Price since the position was entered

For a short position,
Trailing Price: Points = Best Price + Points Trailing
Best Price = minimum Low Price since the position was entered

Discussion:

This indicator is useful for creating a trading strategy trailing stop that trails price movement by a specified number of price points.

Example:

If your entry price is 100 and your Points Trailing is 10 then:

for a long position, a stop is placed at 90 initially and it will change if the issue increases in value. The value of the trailing stop will be 10 points below the best price since the entry price. This means that if the stock climbs to 110, the trailing stop will be calculated to be 100 (10 points below 110). Once the stop is placed at 100 it will never go down. The stop order will be activated once the price drops down to the value of the trailing stop, at which point you will exit your long position.

for a short position, a stop is placed at 110 initially and it will change if the issue decreases in value. The value of the trailing stop will be 10 points above the lowest price since the entry price. This means that if the stock falls to 90, the trailing stop will be calculated to be 100 (10 points above 90). Once the stop is placed at 100 it will never go up. The stop order will be activated once the price rises to the value of the trailing stop, at which point you will exit your short position.

Bars Since Entry Activated

Abbreviation: BarsSinceEntryAct
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
# Activations Ago	Int >= 1	1

Calculation:

Bars Since Entry Activated is the number of bars betw een the entry signal and the current bar.

Discussion:

This indicator is useful for creating custom trading strategy exit conditions based upon the number of bars since a previous postion w as activated.

Bars Since Entry Activated

Abbreviation: BarsSinceEntryAct
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
# Activations Ago	Int >= 1	1

Calculation:

Bars Since Entry Activated is the number of bars betw een the entry signal and the current bar.

Discussion:

This indicator is useful for creating custom trading strategy exit conditions based upon the number of bars since a previous postion w as activated.

Bars Since Entry Activated

Abbreviation: BarsSinceEntryAct

Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
# Activations Ago	Int >= 1	1

Calculation:

Bars Since Entry Activated is the number of bars betw een the entry signal and the current bar.

Discussion:

This indicator is useful for creating custom trading strategy exit conditions based upon the number of bars since a previous postion w as activated.

Bars Since Entry Activated

Abbreviation: BarsSinceEntryAct
Category: Trading Strategy: Position Information

Input Parameters:

Name	Range	Default
Trading Strategy		
# Activations Ago	Int >= 1	1

Calculation:

Bars Since Entry Activated is the number of bars betw een the entry signal and the current bar.

Discussion:

This indicator is useful for creating custom trading strategy exit conditions based upon the number of bars since a previous postion w as activated.

Inactivity: Percent

Abbreviation: Inactivity%
Category: Trading Strategy: Exit Signals

Input Parameters:

Name	Range	Default
Trading Strategy		
Minimum Percent Change	Real >= 0	10
Bars	Int >= 0	20

Calculation:

If the price over the specified number of Bars does not advance more than the Minimum Percent Change then
Inactivity: Percent = True (1)
else
Inactivity: Percent = False (0)

For a long position the percent price advancement is calculated as 100 * (highest high since low est low - low est low) / low est low
For a short position, the percent price advancement is calculated as 100 * (low est lo w since highest high – highest high) / low est low since highest high

Discussion:

Indicates w hen price does not advance more than a specified percentage over a specified number of price bars. Very useful as an exit signal for a trading strategy.

Inactivity: Points

Abbreviation: InactivityPnts
Category: Trading Strategy: Exit Signals

Input Parameters:

Name	Range	Default
Trading Strategy		
Minimum Point Change	Real >= 0	5
Bars	Int >= 0	20

Calculation:

If the price over the specified number of Bars does not advance more than the Minimum Point Change then
    Inactivity: Points = True (1)
else
    Inactivity: Points = False (0)

For a long position the price advancement is calculated as (highest high since lowest low – lowest low)
For a short position, the price advancement is calculated as (highest high – lowest low since highest high)

Discussion:

Indicates when price does not advance more than a specified amount over a specified number of price bars. Very useful as an exit signal for a trading strategy.

Price Target: Percent

Abbreviation: PriceTarget%
Category: Trading Strategy: Exit Signals

Input Parameters:

Name	Range	Default
Trading Strategy		
Target Percent Change	Real >= 0	10

Calculation:

For a long position
  If 100 * (current closing price - entry price) / entry price is greater than or equal to the Target Percent Change then
    Price Target: Percent = True (1)
  else
    Price Target: Percent = False (1)

For a short position
  If 100 * (entry price - current closing price) / entry price is greater than or equal to the Target Percent Change then
    Price Target: Percent = True (1)
  else
    Price Target: Percent = False (1)

Discussion:

Indicates w hen the price advances a specified amount from the entry price. Very useful as an exit signal for a trading strategy.

Price Target: Points

Abbreviation: PriceTargetPnts
Category: Trading Strategy: Exit Signals

Input Parameters:

Name	Range	Default
Trading Strategy		
Target Point Change	Real >= 0	5

Calculation:

For a long position
    If (current closing price - entry price) is greater than or equal to the Target Point Change then
        Price Target: Points = True (1)
    else
        Price Target: Points = False (1)

For a short position
    If (entry price - current closing price) is greater than or equal to the Target Point Change then
        Price Target: Points = True (1)
    else
        Price Target: Points = False (1)

Discussion:

Indicates w hen the price advances a specified amount from the entry price. Very useful as an exit signal for a trading strategy.

Williams' %R < x

Abbreviation: %R<x
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic Periods	Int >= 1	5
X	Real	20

Calculation:

If %R(High Price, Low Price, Closing Price, Stochastic Periods) < X then equals 1
Otherwise 0

where
%R represents Williams' %R

Discussion:

Indicates the periods for which Williams' %R is below a certain value.

Williams' %R > x

Abbreviation: %R>x
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic Periods	Int >= 1	5
X	Real	80

Calculation:

If %R(High Price, Low Price, Closing Price, Stochastic Periods) > X then 1
Otherwise 0

where
%R represents Williams' %R

Discussion:

Indicates periods for which Williams' %R is above a certain value.

Bollinger Band High Breakout

Abbreviation: BB High Breakout
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series		Close
Periods	Int >= 2	20
StndDev Multiplier	Real > 0.0	2

Calculation:

If (X > Y) and (most recent previous period w here X did not equal Y, X w as less than Y) then 1
Otherw ise 0

w here
X = Time Series
Y = BBHigh(Time Series, Window Size, StndDev Multiplier)

BBHigh represents Bollinger Band: High

Discussion:

Indicates the period w hen a Time Series has just broken out above its Bollinger Band High Channel.

Bollinger Band Low Breakout

Abbreviation: BB Low Breakout
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series		Close
Periods	Int >= 2	20
StndDev Multiplier	Real > 0.0	2

Calculation:

If (X < Y) and (most recent previous period where X did not equal Y, X was greater than Y) then 1
Otherwise 0

where
X = Time Series
Y = BBLow (Time Series, Periods, StndDev Multiplier)

BBLow represents Bollinger Band: Low

Discussion:

Indicates the period when a Time Series has just broken out below its Bollinger Band Low Channel.

High Channel Breakout

Abbreviation: High Channel Breakout
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
High Price		High
Periods	Int >= 1	5

Calculation:

If (X > Y) and (most recent previous period where X did not equal Y, X was less than Y) then 1
Otherwise 0

where
X = High Price
Y = Lag(PriceHigh(High Price, Periods), 1)

PriceHigh represents Price High
Lag represents Lag

Discussion:

Indicates the period when a High Price has just broken out above its High Channel. Because a High Channel Breakout signals a rise in the price, it is traditionally used as a signal to enter a long position or to exit a short position.

Low Channel Breakout

Abbreviation: Low Channel Breakout
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Low Price		Low
Periods	Int >= 1	5

Calculation:

If (X < Y) and (most recent previous period where X did not equal Y, X was greater than Y) then 1
Otherwise 0

where
X = Low Price
Y = Lag(PriceLow(Low Price, Periods), 1)

PriceLow represents Price Low
Lag represents Lag

Discussion:

Indicates the period when a Low Price has just broken out below its Low Channel. Because a Low Channel Breakout signals a drop in the price, it is traditionally used as a signal to exit a long position or to enter a short position.

Commodity Channel Index Crossover Above

Abbreviation: CCI Crossover Above
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
CCI Periods #1	Int >= 2	5
Deviation Multiplier #1	Real > 0.0	0.015
CCI Periods #2	Int >= 2	10
Deviation Multiplier #2	Real > 0.0	0.015

Calculation:

If (X > Y) and (most recent previous period where X did not equal Y, X was less than Y) then 1
Otherwise 0

where
X = CCI(High Price, Low Price, Closing Price, CCI Periods #1, Deviation Multiplier #1)
Y = CCI(High Price, Low Price, Closing Price, CCI Periods #2, Deviation Multiplier #2)

CCI represents Commodity Channel Index (CCI)

Discussion:

Indicates the period when one Commodity Channel Index line has just crossed over another Commodity Channel Index line.

Commodity Channel Index Crossover Below

Abbreviation: CCI Crossover Below
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
CCI Periods #1	Int >= 2	5
Deviation Multiplier #1	Real > 0.0	0.015
CCI Periods #2	Int >= 2	10
Deviation Multiplier #2	Real > 0.0	0.015

Calculation:

If (X < Y) and (most recent previous period where X did not equal Y, X was greater than Y) then 1
Otherwise 0

X = CCI(High Price, Low Price, Closing Price, CCI Periods #1, Deviation Multiplier #1)
Y = CCI(High Price, Low Price, Closing Price, CCI Periods #2, Deviation Multiplier #2)

CCI represents Commodity Channel Index (CCI)

Discussion:

Indicates the period when one Commodity Channel Index line has just crossed below another Commodity Channel Index line.

Close Average < Open Average

Abbreviation: CloseAvg<OpenAvg
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Opening Price		Open
Closing Price		Close
Avg Periods	Int >= 1	5

Calculation:

if (Avg(Closing Price, Avg Periods) < Avg(Open, Avg Periods)) then 1
Otherwise 0

where
Avg represents Simple Moving Average

Discussion:

Indicates periods for which the closing average is less than the opening average.

Close Average < Open Average

Abbreviation: CloseAvg<OpenAvg
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Opening Price		Open
Closing Price		Close
Avg Periods	Int >= 1	5

Calculation:

if (Avg(Closing Price, Avg Periods) < Avg(Open, Avg Periods)) then 1
Otherwise 0

where
Avg represents Simple Moving Average

Discussion:

Indicates periods for which the closing average is less than the opening average.

Simple MovAvg Crossover Above

Abbreviation: Avg Crossover Above
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series		Close
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

If (X > Y) and (most recent previous period w here X did not equal Y, X w as less than Y) then 1
Otherw ise 0

w here
X = Avg(Time Series, Avg1 Periods)
Y = Avg(Time Series, Avg2 Periods)

Avg represents Simple Moving Average

Discussion:

Indicates the period w hen one Simple Moving Average line has just crossed above another Simple Moving Average line.

Simple MovAvg Crossover Below

Abbreviation: Avg Crossover Below
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series		Close
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

If (X < Y) and (most recent previous period where X did not equal Y, X was greater than Y) then 1
Otherwise 0

where
X = Avg(Time Series, Avg1 Periods)
Y = Avg(Time Series, Avg2 Periods)

Avg represents Simple Moving Average

Discussion:

Indicates the period when one Simple Moving Average line has just crossed below another Simple Moving Average line.

Exponential MovAvg Crossover Above

Abbreviation: ExpAvg Crossover Above
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg1 Periods	Int >= 1	5
ExpAvg2Periods	Int >= 1	10

Calculation:

If (X > Y) and (most recent previous period w here X did not equal Y, X w as less than Y) then 1
Oherw ise 0

w here
X = ExpAvg(Time Series, ExpAvg1 Periods)
Y = ExpAvg(Time Series, ExpAvg2 Periods)

ExpAvg represents Exponential Moving Average

Discussion:

Indicates the period w hen one Exponential Moving Average line has just crossed above another Exponential Moving Average line.

Exponential MovAvg Crossover Below

Abbreviation: ExpAvg Crossover Below
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg1 Periods	Int >= 1	5
ExpAvg2Periods	Int >= 1	10

Calculation:

If (X < Y) and (most recent previous period w here X did not equal Y, X w as greater than Y) then 1
Otherw ise 0

w here
X = ExpAvg(Time Series, ExpAvg1 Periods)
Y = ExpAvg(Time Series, ExpAvg2 Periods)

ExpAvg represents Exponential Moving Average

Discussion:

Indicates the period w hen one Exponential Moving Average line has just crossed below another Exponential Moving Average line.

Linearly Weighted MovAvg Crossover Above

Abbreviation: LinWgtAvg Crossover Above
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg1 Periods	Int >= 1	5
LinWgtAvg2 Periods	Int >= 1	10

Calculation:

If (X > Y) and (most recent previous period w here X did not equal Y, X w as less than Y) then 1
Otherw ise 0

w here
X = LinWgtAvg(Time Series, LinWgtAvg1 Periods)
Y = LinWgtAvg(Time Series, LinWgtAvg2 Periods)

LinWgtAvg represents Linearly Weighted Moving Average

Discussion:

Indicates the period w hen one Linearly Weighted Moving Average line has just crossed above another Linearly Weighted Moving Average line.

Linearly Weighted MovAvg Crossover Below

Abbreviation: LinWgtAvg Crossover Below
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg1 Periods	Int >= 1	5
LinWgtAvg2 Periods	Int >= 1	10

Calculation:

If (X < Y) and (most recent previous period w here X did not equal Y, X w as greater than Y) then 1
Otherw ise 0

w here
X = LinWgtAvg(Time Series, LinWgtAvg1 Periods)
Y = LinWgtAvg(Time Series, LinWgtAvg2 Periods)

LinWgtAvg represents Linearly Weighted Moving Average

Discussion:

Indicates the period w hen one Linearly Weighted Moving Average line has just crossed below another Linearly Weighted Moving Average line.

Simple MovAvg Envelope High Breakout

Abbreviation: Avg Envelope High Breakout
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series		Close
Avg Periods	Int >= 1	5
Envelope Fraction	Real > 0.0	0.25

Calculation:

If (X > Y) and (most recent previous period w here X did not equal Y, X w as less than Y) then 1
Otherw ise 0

w here
X = Time Series
Y = Avg Envelope High(Time Series, Avg Periods, Envelope Fraction)

Avg Envelope High represents Simple: Avg Envelope High

Discussion:

Indicates the period w hen a Time Series has just broken out above its Simple Moving Average Envelope High.

Simple MovAvg Envelope Low Breakout

Abbreviation: Avg Envelope Low Breakout
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series		Close
Avg Periods	Int >= 1	5
Envelope Fraction	Real > 0.0	0.25

Calculation:

If (X < Y) and (most recent previous period where X did not equal Y, X was greater than Y) then 1
Otherwise 0

where
X = Time Series
Y = Avg Envelope Low (Time Series, Avg Periods, Envelope Fraction)

Avg Envelope Low represents Simple Avg Envelope Low

Discussion:

Indicates the period when a Time Series has just broken out below its Simple Moving Average Envelope Low.

Exponential MovAvg Envelope High Breakout

Abbreviation: ExpAvg Envelope High Breakout
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg Periods	Int >= 1	5
Envelope Fraction	Real > 0.0	0.25

Calculation:

If (X > Y) and (most recent previous period where X did not equal Y, X was less than Y) then 1
Otherwise 0

where
X = Time Series
Y = ExpAvg Envelope High(Time Series, ExpAvg Periods, Envelope Fraction)

ExpAvg Envelope High represents Exponential: ExpAvg Envelope High

Discussion:

Indicates the period when a Time Series has just broken out above its Exponential Moving Average Envelope High.

Exponential MovAvg Envelope Low Breakout

Abbreviation: ExpAvg Envelope Low Breakout
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg Periods	Int >= 1	5
Envelope Fraction	Real > 0.0	0.25

Calculation:

If (X < Y) and (most recent previous period w here X did not equal Y, X w as greater than Y) then 1
Otherw ise 0

w here
X = Time Series
Y = ExpAvg Envelope Low (Time Series, ExpAvg Periods, Envelope Fraction)

ExpAvg Envelope Low represents Exponential: ExpAvg Envelope Low

Discussion:

Indicates the period w hen a Time Series has just broken out below its Exponential Moving Average Envelope Low .

Linearly Weighted MovAvg Envelope High Breakout

Abbreviation: LinWgtAvg Envelope High Breakout
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg Periods	Int >= 1	5
Envelope Fraction	Real > 0.0	0.25

Calculation:

If (X > Y) and (most recent previous period w here X did not equal Y, X w as less than Y) then 1
Otherw ise 0

w here
X = Time Series
Y = LinWgtAvg Envelope High(Time Series, LinWgtAvg Periods, Envelope Fraction)

LinWgtAvg Envelope High represents Linearly Weighted: LinWgtAvg Envelope High

Discussion:

Indicates the period w hen a Time Series has just broken out above its Linearly Weighted Moving Average Envelope High.

Linearly Weighted MovAvg Envelope Low Breakout

Abbreviation: LinWgtAvg Envelope Low Breakout
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg Periods	Int >= 1	5
Envelope Fraction	Real > 0.0	0.25

Calculation:

If (X < Y) and (most recent previous period w here X did not equal Y, X w as greater than Y) then 1
Otherw ise 0

w here
X = Time Series
Y = LinWgtAvg Envelope Low (Time Series, LinWgtAvg Periods, Envelope Fraction)

LinWgtAvg Envelope Low represents Linearly Weighted: LinWgtAvg Envelope Low

Discussion:

Indicates the period w hen a Time Series has just broken out below its Linearly Weighted Moving Average Envelope Low .

Price < Simple MovAvg

Abbreviation: Price<Avg
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series		Close
Avg Periods	Int >= 1	5

Calculation:

Time Series < Avg(Time Series, Avg Periods)

where
Avg represents Simple Moving Average

Discussion:

Indicates periods for which a time series is less than its Simple Moving Average.

Simple MovAvg Crossover Above

Abbreviation: Avg Crossover Above
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series		Close
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

If (X > Y) and (most recent previous period w here X did not equal Y, X w as less than Y) then 1
Otherw ise 0

w here
X = Avg(Time Series, Avg1 Periods)
Y = Avg(Time Series, Avg2 Periods)

Avg represents Simple Moving Average

Discussion:

Indicates the period w hen one Simple Moving Average line has just crossed above another Simple Moving Average line.

Price < Exponential MovAvg

Abbreviation: Price<ExpAvg
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series		Close
ExpAvg Periods	Int >= 1	5

Calculation:

Time Series < ExpAvg(Time Series, ExpAvg Periods)

where
ExpAvg represents Exponential Moving Average

Discussion:

Indicates periods for which a time series is less than its Exponential Moving Average.

Exp

Abbreviation: Exp
Category: Arithmetic

Input Parameters:

Name	Range	Default
Operand		

Calculation:

Pow (e, Operand)

where
e = 2.718281828459045, more commonly known as the inverse natural log of 1.

Pow represents Power

Price < Linearly Weighted MovAvg

Abbreviation: Price<LinWgtAvg
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg Periods	Int >= 1	5

Calculation:

Time Series < LinWgtAvg(Time Series, LinWgtAvg Periods)

w here
LinWgtAvg represents Linearly Weighted Moving Average

Discussion:

Indicates periods for w hich a time series is less than its Linearly Weighted Moving Average.

Linearly Weighted Moving Average

Abbreviation: LinWgtAvg
Category: Averages

Input Parameters:

Name	Range	Default
Time Series		Close
LinWgtAvg Periods	Int >= 1	5

Calculation:

(n*T + (n-1)*T[-1] + ... + 2*T[-n+2] + T[-n+1]) / (n + (n-1) + ... + 2 + 1)

where
T = Time Series
T[-j] = Time Series value j periods ago
n = LinWgtAvg Periods

Discussion:

Provides a smoothing of a time series with an emphasis given to values during the most recent time periods.

Stochastic %K Crossover Above

Abbreviation: Stochastic %K Crossover Above
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic Periods #1	Int >= 1	5
Stochastic Periods #2	Int >= 1	10

Calculation:

If (X > Y) and (most recent previous period where X did not equal Y, X was less than Y) then 1
Otherwise 0

where
X = Stoch%K(High Price, Low Price, Closing Price, Stochastic Periods #1)
Y = Stoch%K(High Price, Low Price, Closing Price, Stochastic Periods #2)

Stoch%K represents Stochastic %K

Discussion:

Indicates the period when one Stochastic %K line has just crossed above another Stochastic %K line.

Stochastic %K Crossover Below

Abbreviation: Stochastic %K Crossover Below
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic Periods #1	Int >= 1	5
Stochastic Periods #2	Int >= 1	10

Calculation:

If (X < Y) and (most recent previous period where X did not equal Y, X was greater than Y) then 1
Otherwise 0

where
X = Stoch%K(High Price, Low Price, Closing Price, Stochastic Periods #1)
Y = Stoch%K(High Price, Low Price, Closing Price, Stochastic Periods #2)

Stoch%K represents Stochastic %K

Discussion:

Indicates the period when one Stochastic %K line has just crossed below another Stochastic %K line.

Stochastic %K/%D Crossover Above

Abbreviation: Stochastic %K/%D Crossover Above
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic %K Periods	Int >= 1	10
Stochastic %D Periods	Int >= 1	10
Smoothing Periods	Int >= 1	10

Calculation:

If (X > Y) and (most recent previous period where X did not equal Y, X was less than Y) then 1
Otherwise 0

where
X = Stoch%K(High Price, Low Price, Closing Price, Stochastic %K Periods)
Y = Stoch%D(High Price, Low Price, Closing Price, Stochastic %D Periods, Smoothing Periods)

Stoch%K represents Stochastic %K
Stoch %D represents Stochastic %D

Discussion:

Indicates the period when one Stochastic %K line has just crossed above a Stochastic %D line.

Stochastic %K/%D Crossover Below

Abbreviation: Stochastic %K/%D Crossover Below
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Stochastic %K Periods	Int >= 1	10
Stochastic %D Periods	Int >= 1	10
Smoothing Periods	Int >= 1	10

Calculation:

If (X < Y) and (most recent previous period where X did not equal Y, X was more than Y) then 1
Otherwise 0

where
X = Stoch%K(High Price, Low Price, Closing Price, Stochastic %K Periods)
Y = Stoch%D(High Price, Low Price, Closing Price, Stochastic %D Periods, Smoothing Periods)

Stoch%K represents Stochastic %K
Stoch %D represents Stochastic %D

Discussion:

Indicates the period when one Stochastic %K line has just crossed below a Stochastic %D line.

Crossover Above

Abbreviation: CrossAbove
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close

Calculation:

If (Time Series #1 > Time Series #2) and (most recent previous period w here Time Series #1 did not equal Time Series #2, Time Series #1 w as less than Time Series #2) then 1
Otherw ise 0

Discussion:

Indicates the period w hen one Time Series line has just crossed above another Time Series Line.

Crossover Below

Abbreviation: CrossBelow
Category: Crossover & Breakout Identification

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close

Calculation:

If (Time Series #1 < Time Series #2) and (most recent previous period where Time Series #1 did not equal Time Series #2, Time Series #1 was greater than Time Series #2) then 1
Otherwise 0

Discussion:

Indicates the period when one Time Series line has just crossed below another Time Series Line.

Close Pattern: Buy

Abbreviation: Close Pattern: Buy
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Periods	Int >= 1	10

Calculation:

If (High Price > previous High Price) and (Closing Price > PriceMidpoint(High Price , Low Price, Periods)) then 1
Otherwise 0

PriceMidpoint represents Price Range Midpoint

Discussion:

Indicates the potential for an upturn in the market.

Close Pattern: Sell

Abbreviation: Close Pattern: Sell
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Periods	Int >= 1	10

Calculation:

If (Low Price < previous Low Price) and (Closing Price < PriceMidpoint(High Price, Low Price, Periods)) then 1
Otherwise 0

PriceMidpoint represents Price Range Midpoint

Discussion:

Indicates the potential for a downturn in the market.

Head and Shoulders: Bottom

Abbreviation: Head and Shoulders: Bottom
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
Low Price		Low

Calculation:

Determine the last three Pivot Point Bottoms
If (first pivot > middle pivot) and (last pivot > middle pivot) then 1
Otherwise 0

Discussion:

Indicates the potential for an upturn in the market. See Pivot Point: Bottom Flag for more details about pivot points.

Head and Shoulders: Top

Abbreviation: Head and Shoulders: Top
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High

Calculation:

Determine the last three Pivot Point Tops
If (first pivot < middle pivot) and (last pivot < middle pivot) then 1
Otherwise 0

Discussion:

Indicates the potential for a downturn in the market. See Pivot Point: Top Flag for more details about pivot points

Hook Reversal: Bearish Flag

Abbreviation: Hook Reversal: Bearish Flag
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High
Closing Price		Close

Calculation:

If (High Price > previous High Price) and (Closing Price < previous Closing Price) then 1
Otherw ise 0

Discussion:

Indicates the potential for a bull to bear turning point.

Hook Reversal: Bullish Flag

Abbreviation: Hook Reversal: Bullish Flag
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
Low Price		Low
Closing Price		Close

Calculation:

If (Low Price < previous Low Price) and (Closing Price > previous Closing Price) then 1
Otherwise 0

Discussion:

Indicates the potential for a bear to bull turning point.

Inside Day

Abbreviation: Inside Day
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low

Calculation:

If (High Price <= previous High Price) and (Low Price >= previous Low Price) then 1
Otherwise 0

Discussion:

Indicates a tightening of the price range.

Island Reversal: Bearish Flag

Abbreviation: Island Reversal: Bearish Flag
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low

Calculation:

If (High Price 2 periods ago < Low Price 1 period ago) and (Low Price 1 period ago > current High Price) then 1
Otherwise 0

Discussion:

Indicates the potential for an upturn in the market. Conceptually, the Bearish Island Reversal can be thought of as a pivot point top that requires the presence of a price gap. See Pivot Point: Top Flag for more details about pivot points.

Island Reversal: Bullish Flag

Abbreviation: Island Reversal: Bullish Flag
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low

Calculation:

If (Low Price 2 periods ago > High Price 1 period ago) and (High Price 1 period ago < current Low Price) then 1
Otherwise 0

Discussion:

Indicates the potential for a downturn in the market. Conceptually, the Bullish Island Reversal can be thought of as a pivot point bottom that requires the presence of a price gap. See Pivot Point: Bottom Flag for more details about pivot points.

Key High (Rally Day)

Abbreviation: Key High (Rally Day)
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low

Calculation:

If (High Price > previous High Price) and (Low Price > previous Low Price) then 1
Otherwise 0

Discussion:

Indicates the bullish nature of the market.

Key Low (Reaction Day)

Abbreviation: Key Low (Reaction Day)
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low

Calculation:

If (High Price < previous High Price) and (Low Price < previous Low Price) then 1
Otherwise 0

Discussion:

Indicates the bearish nature of the market.

Key Reversal: Bearish Flag

Abbreviation: Key Reversal: Bearsh Flag
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

If (High Price > previous High Price) and (Low Price < previous Low Price) and (Closing Price < previous Closing Price) then 1
Otherwise 0

Discussion:

Indicates possible market indecision turning towards a downtrend.

Key Reversal: Bullish Flag

Abbreviation: Key Reversal: Bullish Flag
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

If (High Price > previous High Price) and (Low Price < previous Low Price) and (Closing Price > previous Closing Price) then 1
Otherwise 0

Discussion:

Indicates possible market indecision turning towards an uptrend.

Modified Clover Method: Buy Flag

Abbreviation: Modified Clover Method: Buy Flag
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Determine the last Key High.
If (Closing Price > last key high) then 1
Otherwise 0

Discussion:

Indicates the potential for a market uptrend.

Modified Clover Method: Sell Flag

Abbreviation: Modified Clover Method: Sell Flag
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Determine the last Key Low .
If (Closing Price < last key low) then 1
Otherw ise 0

Discussion:

Indicates the potential for a market dow ntrend.

Outside Day

Abbreviation: Outside Day
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low

Calculation:

If (High Price > previous High Price) and (Low Price < previous Low Price) then 1
Otherwise 0

Discussion:

Indicates an expansion of the price range.

Pivot Point: Bottom Channel

Abbreviation: Pivot Point: Bottom Channel
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
Low Price		Low

Calculation:

Value of pivot day's low price on the last Pivot Point Bottom

Discussion:

Can be used in conjunction with price to indicate penetration of the support provided by the Pivot Point Bottom. See Pivot Point: Bottom Flag for more details about pivot points.

Pivot Point: Bottom Flag

Abbreviation: Pivot Point: Bottom Flag
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
Low Price		Low

Calculation:

If (Low Price 2 periods ago > Low Price 1 period ago) and (Low Price 1 period ago < current Low Price) then 1
Otherwise 0

Discussion:

A pivot point bottom is when the a low price is lower than the low of the bars on either side. Indicates the potential for a downturn in the market.

Pivot Point: Top Channel

Abbreviation: Pivot Point: Top Channel
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High

Calculation:

Value of pivot day's high price on the last Pivot Point Top

Discussion:

Can be used in conjunction with price to indicate penetration of the resistance provided by the Pivot Point Top. See Pivot Point: Top Flag for more details about pivot points.

Pivot Point: Top Flag

Abbreviation: Pivot Point: Top Flag
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High

Calculation:

If (High Price 2 periods ago < High Price 1 period ago) and (High Price 1 period ago > current High Price) then 1
Otherwise 0

Discussion:

A pivot point top is when a high price is higher than the high of the bars on either side. Indicates the potential for an upturn in the market.

Runaway Gap: Down Flag

Abbreviation: Runaway Gap: Down Flag
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low

Calculation:

If (current High Price < previous Low Price) then 1
Otherwise 0

Discussion:

Indicates the strength for continued falling prices.

Runaway Gap: Up Flag

Abbreviation: Runaway Gap: Up Flag
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low

Calculation:

If (current Low Price > previous High Price) then 1
Otherwise 0

Discussion:

Indicates the strength for continued rising prices.

Trailing Reversal: Bearish Flag

Abbreviation: Trailing Reversal: Bearish Flag
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Percent	Real > 0.0	1.6

Calculation:

If ((Highest High - Closing Price) / Highest High > X%) then 1
Otherwise 0

where
initially the Highest High = High of first bar and Lowest Low = Low of first bar
X% = Percent
Highest High = The high the last time that (Lowest Low - Closing Price) / Lowest Low > X%
where
Lowest Low = The low the last time that (Highest High - Closing Price) / Highest High > X%

Discussion:

Indicates the occurrence of an X% downturn from the most favorable price. This indicator may produce unusual results depending on the shape of your bars, you may want to use one price stream (e.g., Close) for the high, low, and the close.

Trailing Reversal: Bullish Flag

Abbreviation: Trailing Reversal: Bullish Flag
Category: Chart Pattern Identification

Input Parameters:

Name	Range	Default
High Price		High
Low Price		Low
Closing Price		Close
Percent	Real > 0.0	1.6

Calculation:

If ((Closing Price - Lowest Low) / Lowest Low > X%) then 1
Otherwise 0

where
initially the Highest High = High of first bar and Lowest Low = Low of first bar
X% = Percent
Lowest Low = The low the last time that (Highest High - Closing Price) / Highest High > X%
where
Highest High = The high the last time that (Lowest Low - Closing Price) / Lowest Low > X%

Discussion:

Indicates the occurrence of an X% upturn from the least favorable price. This indicator may produce unusual results depending on the shape of your bars, you may want to use one price stream (e.g., Close) for the high, low, and the close.

Abandoned Baby Bottom

Abbreviation: Abandoned Baby Bottom
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Abandoned Baby Bottom = Downward Trend 2 bars ago
AND Long Black Day 2 bars ago
AND Doji 1 bar ago
AND High Price 1 bar ago < Low Price 2 bars ago
AND White Body
AND Low Price > High Price 1 bar ago

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Very strong indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 64-68 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Belt Hold (bullish)

Abbreviation: Belt Hold (bullish)
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Belt Hold (bullish) = Downward Trend AND White Body AND opening_marubozu

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Possible indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 81-84 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Breakaway (bullish)

Abbreviation: Breakaway (bullish)
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Breakaway (bullish) = Downward Trend 4 bars ago
AND Long Black Day 4 bars ago
AND Black Body 3 bars ago
AND Body Gap Down 3 bars ago
AND Closing Price 3 bars ago > Closing Price 2 bars ago
AND Black Body 1 bar ago
AND Closing Price 2 bars ago > Closing Price 1 bar ago
AND Long White Day
AND Closing Price > Opening Price 3 bars ago
AND Closing Price < Closing Price 4 bars ago

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 103-107 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Concealing Baby Swallow

Abbreviation: Concealing Baby Swallow
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Concealing Baby Swallow = Downward Trend 3 bars ago
AND Black Marubozu 3 bars ago
AND Black Marubozu 2 bars ago
AND Black Body 1 bar ago
AND Body Gap Down 1 bar ago
AND High Price 1 bar ago > Closing Price 2 bars ago
AND Black Body
AND Closing Price < Low Price 1 bar ago
AND Opening Price > High Price 1 bar ago

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Very strong indication of a continuing bearish trend.

For more details, refer to pages 122-125 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Doji Star (bullish)

Abbreviation: Doji Star (bullish)
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Doji Star (bullish) = Downward Trend 1 bar ago
AND Long Black Day 1 bar ago
AND Doji
AND Body Gap Down
AND NOT Long Upper Shadow
AND NOT Long Lower Shadow

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 52-55 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Engulfing Pattern (bullish)

Abbreviation: Engulfing Pattern (bullish)
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Engulfing Pattern (bullish) = Downward Trend 1 bar ago
AND Black Body 1 bar ago
AND White Body
AND Opening Price < Closing Price 1 bar ago
AND Closing Price > Opening Price 1 bar ago
AND (Opening Price 1 bar ago-Closing Price 1 bar ago)/(Closing Price-Opening Price)<=0.7

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 27-32 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Hammer

Abbreviation: Hammer
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Hammer = Downward Trend
AND Short Body
AND Candle Lower Shadow Length>2*Candle Body Length
AND No Upper Shadow

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Possible indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 23-27 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Harami (bullish)

Abbreviation: Harami (bullish)
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Harami (bullish) = Downward Trend 1 bar ago
AND Long Black Day 1 bar ago
AND Short White Day
AND Closing Price < Opening Price 1 bar ago
AND Opening Price > Closing Price 1 bar ago
AND (Closing Price-Opening Price)/(Opening Price 1 bar ago-Closing Price 1 bar ago)<0.7

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Possible indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 32-36 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Harami Cross (bullish)

Abbreviation: Harami Cross (bullish)
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Harami Cross (bullish) = Downward Trend 1 bar ago
AND Long Black Day 1 bar ago
AND Doji
AND High Price 1 bar ago > High Price
AND Low Price 1 bar ago < Low Price

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 36-40 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Homing Pigeon

Abbreviation: Homing Pigeon
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Homing Pigeon = Downward Trend 1 bar ago
AND Long Black Day 1 bar ago
AND Short Black Day
AND Closing Price 1 bar ago < Low Price
AND Opening Price 1 bar ago > High Price

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 131-133 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Inverted Hammer

Abbreviation: Inverted Hammer
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Inverted Hammer = Downward Trend 1 bar ago
AND Black Body 1 bar ago
AND Short Body
AND No Lower Shadow
AND Candle Upper Shadow Length >= 2 * Candle Body Length

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Possible indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 40-45 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Kicking (bullish)

Abbreviation: Kicking (bullish)
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Kicking (bullish) = Black Marubozu 1 bar ago AND White Marubozu AND Body Gap Up

Discussion:

Very strong indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 129-131 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Ladder Bottom

Abbreviation: Ladder Bottom
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Ladder Bottom = Downward Trend 4 bars ago
AND Long Black Day 4 bars ago
AND Long Black Day 3 bars ago
AND Closing Price 4 bars ago > Closing Price 3 bars ago
AND Opening Price 4 bars ago > Opening Price 3 bars ago
AND Long Black Day 2 bars ago
AND Closing Price 3 bars ago > Closing Price 2 bars ago
AND Opening Price 3 bars ago > Opening Price 2 bars ago
AND Black Body 1 bar ago
AND NOT No Upper Shadow 1 bar ago
AND White Body
AND Opening Price > Opening Price 1 bar ago

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 134-136 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Matching Low

Abbreviation: Matching Low
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Matching Low Price = Downward Trend 1 bar ago
AND Long Black Day 1 bar ago
AND Black Body
AND difference between Closing Price and Closing Price 1 bar ago is less than 3% of ExpAvg(Candle Body Length,9)
WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 137-139 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Meeting Line (bullish)

Abbreviation: Meeting Line (bullish)
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Meeting Line (bullish) = Downward Trend 1 bar ago
AND Long Black Day 1 bar ago
AND Long White Day
AND difference between Closing Price and Closing Price 1 bar ago is less than 3% of ExpAvg(Candle Body Length,9)

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 76-80 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Morning Doji Star

Abbreviation: Morning Doji Star
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Morning Doji Star = Downward Trend 2 bars ago
AND Long Black Day 2 bars ago
AND Doji 1 bar ago
AND Body Gap Down 1 bar ago
AND White Body

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Very strong indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 60-64 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Morning Star

Abbreviation: Morning Star
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Morning Star = Downward Trend 2 bars ago
AND Long Black Day 2 bars ago
AND Body Gap Down 1 bar ago
AND White Body

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Very strong indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 56-60 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Piercing Line

Abbreviation: Piercing Line
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Piercing Line = Downward Trend 1 bar ago
AND Long Black Day 1 bar ago
AND White Body
AND Opening Price < Low Price 1 bar ago
AND Closing Price > (Opening Price 1 bar ago + Closing Price 1 bar ago)/2
WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 45-48 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Stick Sandwich

Abbreviation: Stick Sandwich
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Stick Sandwich = Downward Trend 2 bars ago
AND Black Body 2 bars ago
AND White Body 1 bar ago
AND Closing Price 2 bars ago < Low Price 1 bar ago
AND Black Body
AND difference between Closing Price 2 bars ago and Opening Price is less than 3% of ExpAvg(Candle Body Length,9)

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 126-128 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Three Inside Up

Abbreviation: Three Inside Up
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Three Inside Up = Downward Trend 2 bars ago
AND Long Black Day 2 bars ago
AND Short White Day 1 bar ago
AND Closing Price 1 bar ago < Opening Price 2 bars ago
AND Opening Price 1 bar ago > Closing Price 2 bars ago
AND (Closing Price 1 bar ago-Opening Price 1 bar ago)/(Opening Price 2 bars ago-Closing Price 2 bars ago)<0.7
AND White Body
AND Closing Price 1 bar ago < Closing Price

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Very strong indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 111-114 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Three Outside Up

Abbreviation: Three Outside Up
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Three Outside Up = Downward Trend 2 bars ago
AND Black Body 2 bars ago
AND White Body 1 bar ago
AND Opening Price 1 bar ago < Closing Price 2 bars ago
AND Closing Price 1 bar ago > Opening Price 2 bars ago
AND (Opening Price 2 bars ago-Closing Price 2 bars ago)/(Closing Price 1 bar ago-Opening Price 1 bar ago)<=0.7
AND White Body
AND Closing Price 1 bar ago < Closing Price

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Very strong indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 115-118 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Three Stars in the South

Abbreviation: Three Stars in the South
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Three Stars in the South = Downward Trend 2 bars ago
AND Long Black Day 2 bars ago
AND Long Lower Shadow 2 bars ago
AND Black Body 1 bar ago
AND Candle Body Length 2 bars ago * 0.3 > Candle Body Length 1 bar ago
AND Candle Lower Shadow Length 2 bars ago * 0.3 > Candle Lower Shadow Length 1 bar ago
AND Low Price 1 bar ago > Low Price 2 bars ago
AND Short Black Day
AND Black Marubozu
AND High Price 1 bar ago > Opening Price
AND Low Price 1 bar ago < Closing Price

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 119-121 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Three White Soldiers

Abbreviation: Three White Soldiers
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Three White Soldiers = Downward Trend 2 bars ago
AND Long White Day 2 bars ago
AND Long White Day 1 bar ago
AND Closing Price 2 bars ago < Closing Price 1 bar ago
AND Opening Price 2 bars ago < Opening Price 1 bar ago
AND Closing Price 2 bars ago > Opening Price 1 bar ago
AND Long White Day
AND Closing Price 1 bar ago < Closing Price
AND Opening Price 1 bar ago < Opening Price
AND Closing Price 1 bar ago > Opening Price

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Very strong indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 88-90 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Tri Star (bullish)

Abbreviation: Tri Star (bullish)
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Tri Star (bullish) = Downward Trend 2 bars ago
AND Doji 2 bars ago
AND Doji 1 bar ago
AND Body Gap Down 1 bar ago
AND Doji
AND Body Gap Up

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 68-71 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Unique Three River Bottom

Abbreviation: Unique Three River Bottom
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Unique Three River Bottom = Downward Trend 2 bars ago
AND Long Black Day 2 bars ago
AND Short Black Day 1 bar ago
AND NOT No Lower Shadow 1 bar ago
AND Closing Price 1 bar ago > Closing Price 2 bars ago
AND Opening Price 1 bar ago < Opening Price 2 bars ago
AND Low Price 1 bar ago < Low Price 2 bars ago
AND Short White Day
AND Body Gap Down
AND Opening Price > Low Price 1 bar ago

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a continuing bullish trend.

For more details, refer to pages 85-87 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

White Hammer

Abbreviation: White Hammer
Category: Candlestick Bullish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

White Hammer = Downward Trend
AND Short White Day
AND Candle Lower Shadow Length>2*Candle Body Length
AND No Upper Shadow
WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Possible indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 23-27 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Abandoned Baby Top

Abbreviation: Abandoned Baby Top
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Abandoned Baby Top = Upward Trend 2 bars ago
AND Long White Day 2 bars ago
AND Doji 1 bar ago
AND Low Price 1 bar ago > High Price 2 bars ago
AND Black Body
AND High Price < Low Price 1 bar ago

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Very strong indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 64-68 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Advance Block

Abbreviation: Advance Block
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Advance Block = Upward Trend 2 bars ago
AND White Body 2 bars ago
AND White Body 1 bar ago
AND Long Upper Shadow 1 bar ago
AND Closing Price 2 bars ago < Closing Price 1 bar ago
AND Opening Price 2 bars ago < Opening Price 1 bar ago
AND Closing Price 2 bars ago > Opening Price 1 bar ago
AND White Body
AND Long Upper Shadow
AND Closing Price 1 bar ago < Closing Price
AND Opening Price 1 bar ago < Opening Price
AND Closing Price 1 bar ago > Opening Price

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 91-93 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Belt Hold (bearish)

Abbreviation: Belt Hold (bearish)
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Belt Hold (bearish) = Upward Trend AND Black Body AND opening_marubozu

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Possible indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 81-84 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Black Hanging Man

Abbreviation: Black Hanging Man
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Black Hanging Man = Upward Trend
AND Short Black Day
AND Candle Lower Shadow Length>2*Candle Body Length
AND No Upper Shadow

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 23-27 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Breakaway (bearish)

Abbreviation: Breakaway (bearish)
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Breakaway (bearish) = Upward Trend 4 bars ago
AND Long White Day 4 bars ago
AND White Body 3 bars ago
AND Body Gap Up 3 bars ago
AND Closing Price 3 bars ago < Closing Price 2 bars ago
AND White Body 1 bar ago
AND Closing Price 2 bars ago < Closing Price 1 bar ago
AND Long Black Day
AND Closing Price < Opening Price 3 bars ago
AND Closing Price > Closing Price 4 bars ago

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 103-107 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Dark Cloud Cover

Abbreviation: Dark Cloud Cover
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Dark Cloud Cover = Upward Trend 1 bar ago
AND Long White Day 1 bar ago
AND Black Body
AND Opening Price > High Price 1 bar ago
AND Closing Price < (Opening Price 1 bar ago + Closing Price 1 bar ago)/2

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Very strong indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 49-51 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Deliberation

Abbreviation: Deliberation
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Deliberation = Upward Trend 2 bars ago
AND Long White Day 2 bars ago
AND Long White Day 1 bar ago
AND White Body
AND Body Gap Up
AND Candle Upper Shadow Length > Candle Body Length
AND Candle Lower Shadow Length > Candle Body Length

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 94-96 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Doji Star (bearish)

Abbreviation: Doji Star (bearish)
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Doji Star (bearish) = Upward Trend 1 bar ago
AND Long White Day 1 bar ago
AND Doji
AND Body Gap Up
AND NOT Long Upper Shadow
AND NOT Long Lower Shadow

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 52-55 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Engulfing Pattern (bearish)

Abbreviation: Engulfing Pattern (bearish)
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Engulfing Pattern (bearish) = Upward Trend 1 bar ago
AND White Body 1 bar ago
AND Black Body
AND Opening Price > Closing Price 1 bar ago
AND Closing Price < Opening Price 1 bar ago
AND (Closing Price 1 bar ago-Opening Price 1 bar ago)/(Opening Price-Closing Price)<=0.7

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 27-32 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Evening Doji Star

Abbreviation: Evening Doji Star
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Evening Doji Star = Upward Trend 2 bars ago
AND Long White Day 2 bars ago
AND Doji 1 bar ago
AND Body Gap Up 1 bar ago
AND Black Body

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Very strong indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 60-64 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Evening Star

Abbreviation: Evening Star
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Evening Star = Upward Trend 2 bars ago
AND Long White Day 2 bars ago
AND Body Gap Up 1 bar ago
AND Black Body

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Very strong indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 56-60 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Hanging Man

Abbreviation: Hanging Man
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Hanging Man = Upward Trend
AND Short Body
AND Candle Lower Shadow Length>2*Candle Body Length
AND No Upper Shadow

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Possible indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 23-27 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Harami (bearish)

Abbreviation: Harami (bearish)
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Harami (bearish) = Upward Trend 1 bar ago
AND Long White Day 1 bar ago
AND Short Black Day
AND Closing Price > Opening Price 1 bar ago
AND Opening Price < Closing Price 1 bar ago
AND (Opening Price-Closing Price)/(Closing Price 1 bar ago-Opening Price 1 bar ago)<0.7

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Possible indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 32-36 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Harami Cross (bearish)

Abbreviation: Harami Cross (bearish)
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Harami Cross (bearish) = Upward Trend 1 bar ago
AND Long White Day 1 bar ago
AND Doji
AND High Price 1 bar ago > High Price
AND Low Price 1 bar ago < Low Price

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 36-40 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Identical Three Crows

Abbreviation: Identical Three Crows
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Identical Three Crows = Upward Trend 2 bars ago
AND Long Black Day 2 bars ago
AND Long Black Day 1 bar ago
AND difference between Closing Price 2 bars ago and Opening Price 1 bar ago is less than 3% of ExpAvg(Candle Body Length,9) 1 bar ago
AND Long Black Day
AND difference between Closing Price 1 bar ago and Opening Price is less than 3% of ExpAvg(Candle Body Length,9)

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Very strong indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 100-102 of the book, *CandlePower*, by Gregory L. Morris.

Kicking (bearish)

Abbreviation: Kicking (bearish)
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Kicking (bearish) = White Marubozu 1 bar ago AND Black Marubozu AND Body Gap Down

Discussion:

Very strong indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 129-131 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Meeting Line (bearish)

Abbreviation: Meeting Line (bearish)
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Meeting Line (bearish) = Upward Trend 1 bar ago
AND Long White Day 1 bar ago
AND Long Black Day
AND difference between Closing Price and Closing Price 1 bar ago is less than 3% of ExpAvg(Candle Body Length,9)

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 76-80 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Shooting Star

Abbreviation: Shooting Star
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Shooting Star = Upward Trend 1 bar ago
AND White Body 1 bar ago
AND Short Body
AND Body Gap Up
AND No Lower Shadow
AND Candle Upper Shadow Length >= 2 * Candle Body Length

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Possible indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 40-45 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Three Black Crows

Abbreviation: Three Black Crows
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Three Black Crows = Upward Trend 2 bars ago
AND Long Black Day 2 bars ago
AND NOT Long Lower Shadow 2 bars ago
AND Long Black Day 1 bar ago
AND NOT Long Lower Shadow 1 bar ago
AND Closing Price 2 bars ago > Closing Price 1 bar ago
AND Opening Price 2 bars ago > Opening Price 1 bar ago
AND Closing Price 2 bars ago < Opening Price 1 bar ago
AND Long Black Day
AND NOT Long Lower Shadow
AND Closing Price 1 bar ago > Closing Price
AND Opening Price 1 bar ago > Opening Price
AND Closing Price 1 bar ago < Opening Price

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Very strong indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 97-99 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Three Inside Down

Abbreviation: Three Inside Down
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Three Inside Down = Upward Trend 2 bars ago
AND Long White Day 2 bars ago
AND Short Black Day 1 bar ago
AND Closing Price 1 bar ago > Opening Price 2 bars ago
AND Opening Price 1 bar ago < Closing Price 2 bars ago
AND (Opening Price 1 bar ago-Closing Price 1 bar ago)/(Closing Price 2 bars ago-Opening Price 2 bars ago)<0.7
AND Black Body
AND Closing Price 1 bar ago > Closing Price
WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Very strong indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 111-114 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Three Outside Down

Abbreviation: Three Outside Down
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Three Outside Down = Upward Trend 2 bars ago
AND White Body 2 bars ago
AND Black Body 1 bar ago
AND Opening Price 1 bar ago > Closing Price 2 bars ago
AND Closing Price 1 bar ago < Opening Price 2 bars ago
AND (Closing Price 2 bars ago-Opening Price 2 bars ago)/(Opening Price 1 bar ago-Closing Price 1 bar ago)<=0.7
AND Black Body
AND Closing Price 1 bar ago > Closing Price

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Very strong indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 115-118 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Tri Star (bearish)

Abbreviation: Tri Star (bearish)
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Tri Star (bearish) = Upward Trend 2 bars ago
AND Doji 2 bars ago
AND Doji 1 bar ago
AND Body Gap Up 1 bar ago
AND Doji
AND Body Gap Down

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 68-71 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Two Crows

Abbreviation: Two Crows
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Two Crows = Upward Trend 2 bars ago
AND Long White Day 2 bars ago
AND Black Body 1 bar ago
AND Body Gap Up 1 bar ago
AND Black Body
AND Opening Price < Opening Price 1 bar ago
AND Opening Price > Closing Price 1 bar ago
AND Closing Price < Closing Price 2 bars ago
AND Closing Price > Opening Price 2 bars ago

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bullish trend to a bearish trend.

For more details, refer to pages 108-110 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Upside Gap Two Crows

Abbreviation: Upside Gap Two Crows
Category: Candlestick Bearish Reversal

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Upside Gap Two Crows = Upward Trend 2 bars ago
AND Long White Day 2 bars ago
AND Black Body 1 bar ago
AND Body Gap Up 1 bar ago
AND Black Body
AND Opening Price > Opening Price 1 bar ago
AND Closing Price < Closing Price 1 bar ago
AND Closing Price > Closing Price 2 bars ago

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a reversal from a bearish trend to a bullish trend.

For more details, refer to pages 72-75 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Mat Hold

Abbreviation: Mat Hold
Category: Candlestick Bullish Continuation

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Mat Hold = Upward Trend 4 bars ago
AND Long White Day 4 bars ago
AND Black Body 3 bars ago
AND Body Gap Up 3 bars ago
AND High Price 3 bars ago > High Price 2 bars ago
AND Low Price,3 > Low Price 2 bars ago
AND Black Body 1 bar ago
AND High Price 2 bars ago > High Price 1 bar ago
AND Low Price 2 bars ago > Low Price 1 bar ago
AND Low Price 1 bar ago > Low Price,4
AND White Body
AND High Price > High Price 3 bars ago

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a continuing bullish trend.

For more details, refer to pages 163-166 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Rising Three Methods

Abbreviation: Rising Three Methods
Category: Candlestick Bullish Continuation

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Rising Three Methods = Upward Trend 4 bars ago
AND Long White Day 4 bars ago
AND Short Black Day 3 bars ago
AND High Price 4 bars ago > High Price 3 bars ago
AND Short Body 2 bars ago
AND High Price 3 bars ago > High Price 2 bars ago
AND Low Price,3 > Low Price 2 bars ago
AND Short Black Day 1 bar ago
AND High Price 2 bars ago > High Price 1 bar ago
AND Low Price 2 bars ago > Low Price 1 bar ago
AND Low Price 1 bar ago > Low Price,4
AND White Body
AND Opening Price > Closing Price 1 bar ago
AND Closing Price > Closing Price 4 bars ago

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Very strong indication of a continuing bullish trend.

For more details, refer to pages 154-158 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Separating Lines (bullish)

Abbreviation: Separating Lines (bullish)
Category: Candlestick Bullish Continuation

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Separating Lines (bullish) = Upward Trend 1 bar ago
AND Black Body 1 bar ago
AND White Body
AND No Lower Shadow
AND difference between Opening Price and Opening Price 1 bar ago is less than 3% of ExpAvg(Candle Body Length,9)

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Possible indication of a continuing bullish trend.

For more details, refer to pages 159-162 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Side by Side White Lines (bullish)

Abbreviation: Side by Side White Lines (bullish)
Category: Candlestick Bullish Continuation

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Side by Side White Lines (bullish) = Upward Trend 2 bars ago
AND White Body 2 bars ago
AND White Body 1 bar ago
AND Body Gap Up 1 bar ago
WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Very strong indication of a continuing bullish trend.

For more details, refer to pages 148-153 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Three Line Strike (bullish)

Abbreviation: Three Line Strike (bullish)
Category: Candlestick Bullish Continuation

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Three Line Strike (bullish) = Upward Trend 3 bars ago
AND White Body 3 bars ago
AND White Body 2 bars ago
AND High Price 3 bars ago < High Price 2 bars ago
AND White Body 1 bar ago
AND High Price 2 bars ago < High Price 1 bar ago
AND Long Black Day
AND High Price 1 bar ago < Opening Price
AND Closing Price < Opening Price 3 bars ago
WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Possible indication of a continuing bullish trend.

For more details, refer to pages 167-171 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Upside Gap Three Methods

Abbreviation: Upside Gap Three Methods
Category: Candlestick Bullish Continuation

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Upside Gap Three Methods = Upward Trend 2 bars ago
AND Long White Day 2 bars ago
AND Long White Day 1 bar ago
AND Body Gap Up 1 bar ago
AND Black Body
AND Opening Price > Opening Price 1 bar ago
AND Opening Price < Closing Price 1 bar ago
AND Closing Price > Opening Price 2 bars ago
AND Closing Price < Closing Price 2 bars ago

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a continuing bullish trend.

For more details, refer to page 172-176 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Upside Tasuki Gap

Abbreviation: Upside Tasuki Gap
Category: Candlestick Bullish Continuation

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Upside Tasuki Gap = Upward Trend 2 bars ago
AND White Body 2 bars ago
AND White Body 1 bar ago
AND Body Gap Up 1 bar ago
AND Black Body
AND Opening Price < Closing Price 1 bar ago
AND Opening Price > Opening Price 1 bar ago
AND Closing Price < Opening Price 1 bar ago
AND Closing Price > Closing Price 2 bars ago

WHERE Upward Trend = (ExpAvg(Closing Price,9) > ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a continuing bullish trend.

For more details, refer to pages 143-147 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Downside Gap Three Methods

Abbreviation: Downside Gap Three Methods
Category: Candlestick Bearish Continuation

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Downside Gap Three Methods = Downward Trend 2 bars ago
AND Long Black Day 2 bars ago
AND Long Black Day 1 bar ago
AND Body Gap Down 1 bar ago
AND White Body
AND Opening Price < Opening Price 1 bar ago
AND Opening Price > Closing Price 1 bar ago
AND Closing Price < Opening Price 2 bars ago
AND Closing Price > Closing Price 2 bars ago

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a continuing bearish trend.

For more details, refer to pages 172-176 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Downside Tasuki Gap

Abbreviation: Downside Tasuki Gap
Category: Candlestick Bearish Continuation

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Downside Tasuki Gap = Downward Trend 2 bars ago
AND Black Body 2 bars ago
AND Black Body 1 bar ago
AND Body Gap Down 1 bar ago
AND White Body
AND Opening Price > Closing Price 1 bar ago
AND Opening Price < Opening Price 1 bar ago
AND Closing Price > Opening Price 1 bar ago
AND Closing Price < Closing Price 2 bars ago

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a continuing bearish trend.

For more details, refer to pages 143-147 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Falling Three Methods

Abbreviation: Falling Three Methods
Category: Candlestick Bearish Continuation

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Falling Three Methods = Downward Trend 4 bars ago
AND Long Black Day 4 bars ago
AND Short White Day 3 bars ago
AND Low Price,4 < Low Price,3
AND Short Body 2 bars ago
AND High Price 3 bars ago < High Price 2 bars ago
AND Low Price,3 < Low Price 2 bars ago
AND Short White Day 1 bar ago
AND High Price 2 bars ago < High Price 1 bar ago
AND High Price 1 bar ago < High Price 4 bars ago
AND Low Price 2 bars ago < Low Price 1 bar ago
AND Black Body
AND Opening Price < Closing Price 1 bar ago
AND Closing Price < Closing Price 4 bars ago

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Very strong indication of a continuing bearish trend.

For more details, refer to pages 154-158 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

In Neck

Abbreviation: In Neck
Category: Candlestick Bearish Continuation

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

In Neck = Downward Trend 1 bar ago
AND Black Body 1 bar ago
AND White Body
AND Opening Price < Low Price 1 bar ago
AND difference between Closing Price and Closing Price 1 bar ago is less than 3% of ExpAvg(Candle Body Length,9)

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a continuing bearish trend.

For more details, refer to pages 180-182 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

On Neck

Abbreviation: On Neck
Category: Candlestick Bearish Continuation

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

On Neck = Downward Trend 1 bar ago
AND Long Black Day 1 bar ago
AND White Body
AND Opening Price < Low Price 1 bar ago
AND difference between Closing Price and Low Price 1 bar ago is less than 3% of ExpAvg(Candle Body Length,9)

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a continuing bearish trend.

For more details, refer to pages 177-179 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Separating Lines (bearish)

Abbreviation: Separating Lines (bearish)
Category: Candlestick Bearish Continuation

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Separating Lines (bearish) = Downward Trend 1 bar ago
AND White Body 1 bar ago
AND Black Body
AND No Upper Shadow
AND difference between Opening Price and Opening Price 1 bar ago is less than 3% of ExpAvg(Candle Body Length,9)

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Possible indication of a continuing bearish trend.

For more details, refer to pages 159-162 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Side by Side White Lines (bearish)

Abbreviation: Side by Side White Lines (bearish)
Category: Candlestick Bearish Continuation

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Side by Side White Lines (bearish) = Downward Trend 2 bars ago
AND Black Body 2 bars ago
AND White Body 1 bar ago
AND Body Gap Down 1 bar ago
AND White Body
AND difference between Opening Price and Opening Price 1 bar ago is less than 10% of ExpAvg(Candle Body Length,9)

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Indication of a continuing bearish trend.

For more details, refer to pages 148-153 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Three Line Strike (bearish)

Abbreviation: Three Line Strike (bearish)
Category: Candlestick Bearish Continuation

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Three Line Strike (bearish) = Downward Trend 3 bars ago
AND Black Body 3 bars ago
AND Black Body 2 bars ago
AND Low Price,3 > Low Price 2 bars ago
AND Black Body 1 bar ago
AND Low Price 2 bars ago > Low Price 1 bar ago
AND Long White Day
AND Low Price 1 bar ago > Opening Price
AND Closing Price > Opening Price 3 bars ago

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Possible indication of a continuing bearish trend.

For more details, refer to pages 167-171 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Thrusting

Abbreviation: Thrusting
Category: Candlestick Bearish Contiunuation

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Thrusting = Downward Trend 1 bar ago
AND Black Body 1 bar ago
AND White Body
AND Opening Price < Low Price 1 bar ago
AND Low Price 1 bar ago > Opening Price + Candle Body Length/3
AND Closing Price > Closing Price 1 bar ago
AND Closing Price < (Closing Price 1 bar ago + Opening Price 1 bar ago)/2

WHERE Downward Trend = (ExpAvg(Closing Price,9) < ExpAvg(Closing Price,9) 1 bar ago)

Discussion:

Possible indication of a continuing bearish trend.

For more details, refer to pages 183-186 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Bearish Star

Abbreviation: Bearish Star
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Bearish Star = Long White Day 1 bar ago AND Short Body AND Body Gap Up

Discussion:

Generally considered to be a candlestick indicating indecision in the market and possible reversal.

For more details, refer to pages 16-17 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Black Closing Marubozu

Abbreviation: Black Closing Marubozu
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Black Closing Marubozu = Black Body AND No Lower Shadow

Discussion:

Generally considered to be a weak bearish candlestick.

For more details, refer to page 12 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Black Marubozu

Abbreviation: Black Marubozu
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Black Marubozu = Black Body AND No Upper Shadow AND No Lower Shadow

Discussion:

Generally considered to be a bearish candlestick.

For more details, refer to page 12 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Black Opening Marubozu

Abbreviation: Black Opening Marubozu
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Black Opening Marubozu = Black Body AND No Upper Shadow

Discussion:

Generally considered to be a bearish candlestick.

For more details, refer to pages 12-13 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Bullish Star

Abbreviation: Bullish Star
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Bullish Star = Long Black Day 1 bar ago AND Short Body AND Body Gap Down

Discussion:

Generally considered to be a candlestick indicating indecision in the market and possible reversal.

For more details, refer to pages 16-17 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Candle Body Length

Abbreviation: Candle Body Length
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Absolute Value (Opening Price - Closing Price)

Discussion:

An indication of how much price change there w as betw een the opening and closing prices.

Candle Lower Shadow Length

Abbreviation: Candle Lower Shadow Length
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Low Price - Min (Opening Price, Closing Price)

Discussion:

An indication of how much price change there was betw een the low and lesser of the open and close.

Candle Upper Shadow Length

Abbreviation: Candle Upper Shadow Length
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

High Price - Max (Opening Price, Closing Price)

Discussion:

An indication of how much price change there w as betw een the high and higher of the open and close.

Doji

Abbreviation: Doji
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Doji = No Candle Body OR Candle Body Length/(High Price-Low Price)<.03

Discussion:

Generally considered to be a candlestick indicating indecision in the market.

For more details, refer to pages 13-14 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Dragonfly Doji

Abbreviation: Dragonfly Doji
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Dragonfly Doji = Doji AND difference between High Price and Closing Price is less than 3% of ExpAvg(Candle Body Length,9)

Discussion:

Generally considered to be a candlestick indicating possible reversal of the market.

For more details, refer to pages 15-16 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Four Price Doji

Abbreviation: Four Price Doji
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Four Price Doji = difference between High Price and Low Price is less than 3% of ExpAvg(Candle Body Length,9)
AND difference between High Price and Opening Price is less than 3% of ExpAvg(Candle Body Length,9)
AND difference between High Price and Closing Price is less than 3% of ExpAvg(Candle Body Length,9)
AND difference between Low Price and Closing Price is less than 3% of ExpAvg(Candle Body Length,9)
AND difference between Low Price and Opening Price is less than 3% of ExpAvg(Candle Body Length,9)

Discussion:

A very rare candlestick indicating extreme indecision in the market.

For more details, refer to page 16 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Gravestone Doji

Abbreviation: Gravestone Doji
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Gravestone Doji = Doji AND difference between Low Price and Closing Price is less than 3% of ExpAvg(Candle Body Length,9)

Discussion:

Generally considered to be a candlestick indicating indecision in the market and possible reversal of the market.

For more details, refer to page 15 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Long Black Day

Abbreviation: Long Black Day
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Long Black Day = Long Body AND Black Body

Discussion:

Indicates a large price movement dow nw ard.

For more details, refer to page 10 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Long-Legged Doji

Abbreviation: Long-Legged Doji
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Long-Legged Doji = Long Upper Shadow
AND Long Lower Shadow
AND (High Price + Low Price)/2 + (High Price-Low Price)/4 > Closing Price
AND (High Price + Low Price)/2 - (High Price-Low Price)/4 < Closing Price
AND Doji

Discussion:

Generally considered to be a candlestick indicating indecision in the market.

For more details, refer to pages 14-15 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Long Lower Shadow

Abbreviation: Long Lower Shadow
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Long Lower Shadow = (Candle Lower Shadow Length > Candle Body Length
AND Candle Lower Shadow Length > 0.25*ExpAvg(Candle Body Length,9))

Discussion:

Indicates a large difference between the low and the open/close.

For more details, refer to page 16 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Long Upper Shadow

Abbreviation: Long Upper Shadow
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Long Upper Shadow = (Candle Upper Shadow Length > Candle Body Length
AND Candle Upper Shadow Length > 0.25*ExpAvg(Candle Body Length,9))

Discussion:

Indicates a large difference between the high and the open/close.

For more details, refer to page 16 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Long White Day

Abbreviation: Long White Day
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Long White Day = Long Body AND White Body

Discussion:

Indicates a large price movement upw ard.

For more details, refer to page 10 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Paper Umbrella

Abbreviation: Paper Umbrella
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Paper Umbrella = Short Body
AND Candle Lower Shadow Length>2*Candle Body Length
AND No Upper Shadow

Discussion:

Generally considered to be a candlestick indicating a reversal in the market.

For more details, refer to page 17 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Short Black Day

Abbreviation: Short Black Day
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Short Black Day = Short Body AND Black Body

Discussion:

Indicates a small price movement downward.

For more details, refer to page 11 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Short White Day

Abbreviation: Short White Day
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Short White Day = Short Body AND White Body

Discussion:

Indicates a small price movement upw ard.

For more details, refer to page 11 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Spinning Top

Abbreviation: Spinning Top
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

Spinning Top = Short Body
AND Candle Upper Shadow Length > Candle Body Length
AND Candle Lower Shadow Length > Candle Body Length

Discussion:

Generally considered to be a candlestick indicating indecision in the market.

For more details, refer to page 13 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

White Closing Marubozu

Abbreviation: White Closing Marubozu
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

White Closing Marubozu = White Body AND No Upper Shadow

Discussion:

Generally considered to be a strong bullish candlestick.

For more details, refer to page 12 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

White Marubozu

Abbreviation: White Marubozu
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

White Marubozu = White Body AND No Upper Shadow AND No Lower Shadow

Discussion:

Generally considered to be a bullish candlestick.

For more details, refer to page 12 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

White Opening Marubozu

Abbreviation: White Opening Marubozu
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

White Opening Marubozu = White Body AND No Lower Shadow

Discussion:

Generally considered to be a bullish candlestick.

For more details, refer to pages 12-13 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

No Upper Shadow

Abbreviation: No Upper Shadow
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

For more details, refer to page 6 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Discussion:

High that is equal to the open or the close.

No Lower Shadow

Abbreviation: No Lower Shadow
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

For more details, refer to pages 6 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Discussion:

Low that is equal to the open or the close.

Real Body

Abbreviation: Real Body
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

For more details, refer to page 6 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Discussion:

Open is different from the close.

Long Body

Abbreviation: Long Body
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

For more details, refer to pages 215-216 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Discussion:

Indicates a large price movement.

Short Body

Abbreviation: Short Body
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

For more details, refer to pages 216 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Discussion:

Indicates a small price movement.

White Body

Abbreviation: White Body
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

For more details, refer to page 6 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Discussion:

Indicates a price movement upwards.

Black Body

Abbreviation: Black Body
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

For more details, refer to page 6 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Discussion:

Indicates a price movement downwards.

Body Gap Up

Abbreviation: Body Gap Up
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

For more details, refer to pages 209-210 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Discussion:

Open and Close is greater than the previous Open and previous Close.

Body Gap Down

Abbreviation: Body Gap Down
Category: Candlestick Line

Input Parameters:

Name	Range	Default
Opening Price		Open
High Price		High
Low Price		Low
Closing Price		Close

Calculation:

For more details, refer to pages 209-210 of the book, *CandlePower*, by Gregory L. Morris (Chicago, IL, Probus Publishing Company, 1992, ISBN 1-55738-458-4). Note that *CandlePower* may no longer be in print and has been replaced by the book *Candlestick Charting Explained : Timeless Techniques for Trading Stocks and Futures* by Gregory L. Morris (ISBN 1-55738-891-1).

Discussion:

Open and Close is less than the previous Open and previous Close.

Put/Call Open Interest Ratio

Abbreviation: Put/Call OpenInt Ratio
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Open Interest		
Call Open Interest		

Calculation:

Put Open Interest / Call Open Interest

Discussion:

Provides a measure of market sentiment. Values over one indicate more outstanding interest in put options than call options. Values below one indicate more outstanding interest in call options than put options. This indicator is often used as a contrary indicator based upon the theory that at market extremes, the public is usually wrong. By this theory, extreme values above one are viewed as bullish, while extreme values below one are viewed as bearish.

Put/Call TRIN

Abbreviation: Put/Call TRIN
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Volume		
Put Open Interest		
Call Volume		
Call Open Interest		

Calculation:

$$\frac{\text{Put Volume / Put Open Interest}}{\text{Call Volume / Call Open Interest}}$$

Discussion:

Provides a measure of market sentiment by modifying the concept of the Put/Call Volume Ratio. Dividing a volume by its corresponding open interest provides a measure of the amount of liquidation transactions versus the amount of buyer to seller transactions in the market. The market sentiment indicator is finally created by creating the put to call ratio of this measure.

Put/Call Volume Ratio

Abbreviation: Put/Call Vol Ratio
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Volume		
Call Volume		

Calculation:

Put Volume / Call Volume

Discussion:

Provides a measure of market sentiment. Values over one indicate more purchases of put options than call options. Values below one indicate more purchases of call options than put options. This indicator is often used as a contrary indicator based upon the theory that at market extremes, the public is usually wrong. By this theory, extreme values above one are viewed as bullish, while extreme values below one are viewed as bearish.

Put/Call Open Interest Ratio: Simple MovAvg

Abbreviation: Put/Call OpenInt Ratio Avg
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Open Interest		
Call Open Interest		
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = Put/Call OpenInt Ratio(Put Open Interest, Call Open Interest)

Put/Call OpenInt Ratio represents Put/Call Open Interest Ratio
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Put/Call Open Interest Ratio indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Put/Call Open Interest Ratio: Simple MovAvg Difference

Abbreviation: Put/Call OpenInt Ratio Avg Diff
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Open Interest		
Call Open Interest		
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = Put/Call OpenInt Ratio(Put Open Interest, Call Open Interest)

Put/Call OpenInt Ratio represents Put/Call Open Interest Ratio
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Put/Call Open Interest Ratio indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Put/Call Open Interest Ratio: Exponential MovAvg

Abbreviation: Put/Call OpenInt Ratio ExpAvg
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Open Interest		
Call Open Interest		
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = Put/Call OpenInt Ratio(Put Open Interest, Call Open Interest)

Put/Call OpenInt Ratio represents Put/Call Open Interest Ratio
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Put/Call Open Interest Ratio indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Put/Call Open Interest Ratio: Exponential MovAvg Difference

Abbreviation: Put/Call OpenInt Ratio ExpAvg Diff
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Open Interest		
Call Open Interest		
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = Put/Call OpenInt Ratio(Put Open Interest, Call Open Interest)

Put/Call OpenInt Ratio represents Put/Call Open Interest Ratio
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Put/Call Open Interest Ratio indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Put/Call Open Interest Ratio: Volume Weighted MovAvg

Abbreviation: Put/Call OpenInt Ratio VolWgtAvg
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Open Interest		
Call Open Interest		
Volume		Volume
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

w here
X = Put/Call OpenInt Ratio(Put Open Interest, Call Open Interest)

Put/Call OpenInt Ratio represents Put/Call Open Interest Ratio
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Put/Call Open Interest Ratio indicator by calculating its moving average. Since it uses a volume w eighted moving average (w hich gives more importance to those periods w ith higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively low er volume.

Put/Call Open Interest Ratio: Volume Weighted MovAvg Difference

Abbreviation: Put/Call OpenInt Ratio VolWgtAvg Diff
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Open Interest		
Call Open Interest		
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

w here
X = Put/Call OpenInt Ratio(Put Open Interest, Call Open Interest)

Put/Call OpenInt Ratio represents Put/Call Open Interest Ratio
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Put/Call Open Interest Ratio indicator by calculating the difference betw een tw o moving averages. Since it uses volume w eighted moving averages (w hich give more importance to those periods w ith higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement betw een periods of relatively higher volume than betw een periods of relatively low er volume.

Put/Call TRIN: Simple MovAvg

Abbreviation: Put/Call TRIN Avg
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Volume		
Put Open Interest		
Call Volume		
Call Open Interest		
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = Put/Call TRIN(Put Volume, Put Open Interest, Call Volume, Call Open Interest)

Put/Call TRIN represents Put/Call TRIN
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Put/Call TRIN indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Put/Call TRIN: Simple MovAvg Difference

Abbreviation: Put/Call TRIN Avg Diff
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Volume		
Put Open Interest		
Call Volume		
Call Open Interest		
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = Put/Call TRIN(Put Volume, Put Open Interest, Call Volume, Call Open Interest)

Put/Call TRIN represents Put/Call TRIN
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Put/Call TRIN indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Put/Call TRIN: Exponential MovAvg

Abbreviation: Put/Call TRIN ExpAvg
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Volume		
Put Open Interest		
Call Volume		
Call Open Interest		
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

w here
X = Put/Call TRIN(Put Volume, Put Open Interest, Call Volume, Call Open Interest)

Put/Call TRIN represents Put/Call TRIN
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Put/Call TRIN indicator by calculating its moving average. Since it uses an exponential moving average (w hich gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Put/Call TRIN: Exponential MovAvg Difference

Abbreviation: Put/Call TRIN ExpAvg Diff
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Volume		
Put Open Interest		
Call Volume		
Call Open Interest		
ExpAvg1 Periods	Int >= 1	5
ExpAvg2Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

w here
X = Put/Call TRIN(Put Volume, Put Open Interest, Call Volume, Call Open Interest)

Put/Call TRIN represents Put/Call TRIN
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Put/Call TRIN indicator by calculating the difference betw een tw o moving averages. Since it uses exponential moving averages (w hich give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Put/Call TRIN: Volume Weighted MovAvg

Abbreviation: Put/Call TRIN VolWgtAvg
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Volume		
Put Open Interest		
Call Volume		
Call Open Interest		
Volume		Volume
Avg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where
X = Put/Call TRIN(Put Volume, Put Open Interest, Call Volume, Call Open Interest)

Put/Call TRIN represents Put/Call TRIN
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Put/Call TRIN indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Put/Call TRIN: Volume Weighted MovAvg Difference

Abbreviation: Put/Call TRIN VolWgtAvg Diff
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Volume		
Put Open Interest		
Call Volume		
Call Open Interest		
Volume		Volume
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

w here
X = Put/Call TRIN(Put Volume, Put Open Interest, Call Volume, Call Open Interest)

Put/Call TRIN represents Put/Call TRIN
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Put/Call TRIN indicator by calculating the difference betw een tw o moving averages. Since it uses volume w eighted moving averages (w hich give more importance to those periods w ith higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement betw een periods of relatively higher volume than betw een periods of relatively low er volume.

Put/Call Volume Ratio: Simple MovAvg

Abbreviation: Put/Call Vol Ratio Avg
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Volume		
Call Volume		
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = Put/Call Vol Ratio(Put Volume, Call Volume)

Put/Call Vol Ratio represents Put/Call Volume Ratio
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Put/Call Volume Ratio indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Put/Call Volume Ratio: Simple MovAvg Difference

Abbreviation: Put/Call Vol Ratio Avg Diff
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Volume		
Call Volume		
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = Put/Call Vol Ratio(Put Volume, Call Volume)

Put/Call Vol Ratio represents Put/Call Volume Ratio
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Put/Call Volume Ratio indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Put/Call Volume Ratio: Exponential MovAvg

Abbreviation: Put/Call Vol Ratio ExpAvg
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Volume		
Call Volume		
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = Put/Call Vol Ratio(Put Volume, Call Volume)

Put/Call Vol Ratio represents Put/Call Volume Ratio
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Put/Call Volume Ratio indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Put/Call Volume Ratio: Exponential MovAvg Difference

Abbreviation: Put/Call Vol Ratio ExpAvg Diff
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Volume		
Call Volume		
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = Put/Call Vol Ratio(Put Volume, Call Volume)

Put/Call Vol Ratio represents Put/Call Volume Ratio
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Put/Call Volume Ratio indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Put/Call Volume Ratio: Volume Weighted MovAvg

Abbreviation: Put/Call Vol Ratio VolWgtAvg
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Volume		
Call Volume		
Volume		Volume
Avg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg Periods)

where
X = Put/Call Vol Ratio(Put Volume, Call Volume)

Put/Call Vol Ratio represents Put/Call Volume Ratio
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Put/Call Volume Ratio indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Put/Call Volume Ratio: Volume Weighted MovAvg Difference

Abbreviation: Put/Call Vol Ratio VolWgtAvg Diff
Category: Option Put / Call

Input Parameters:

Name	Range	Default
Put Volume		
Call Volume		
Volume		Volume
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

where
X = Put/Call Vol Ratio(Put Volume, Call Volume)

Put/Call Vol Ratio represents Put/Call Volume Ratio
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Put/Call Volume Ratio indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Advance/Advance+Decline Ratio

Abbreviation: Advance/Advance+Decline Ratio
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		

Calculation:

Advancing Issues / (Advancing Issues + Declining Issues)

Advance/Decline Ratio

Abbreviation: Advance/Decline Ratio
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		

Calculation:

Advancing Issues / Declining Issues

Advance/Total Ratio (Shultz A/T)

Abbreviation: Advance/Total Ratio
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Total Issues		

Calculation:

Advancing Issues / Total Issues

Advance/Unchanged Ratio

Abbreviation: Advance/Unchanged Ratio
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Unchanged Issues		

Calculation:

Advancing Issues / Unchanged Issues

Advance-Decline/Advance+Decline Ratio

Abbreviation: Advance-Decline/Advance+Decline Ratio
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		

Calculation:

(Advancing Issues - Declining Issues) / (Advancing Issues + Declining Issues)

Advance-Decline/Total Ratio

Abbreviation: Advance-Decline/Total Ratio
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Total Issues		

Calculation:

(Advancing Issues - Declining Issues) / Total Issues

Advance-Decline/Unchanged Ratio

Abbreviation: Advance-Declne/Unchanged Ratio
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Unchanged Issues		

Calculation:

(Advancing Issues - Declining Issues) / Unchanged Issues

Arms Short-Term Trading Index (TRIN)

Abbreviation: Arms Short-Term Trading Index
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		

Calculation:

$$\frac{\text{Advancing Issues} \;/\; \text{Declining Issues}}{\text{Volume of Advancing Issues} \;/\; \text{Volume of Declining Issues}}$$

Decline/Advance+Decline Ratio

Abbreviation: Decline/Advance+Decline Ratio
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Declining Issues		
Advancing Issues		

Calculation:

Declining Issues / (Advancing Issues + Declining Issues)

Decline/Total Ratio

Abbreviation: Decline/Total Ratio
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Declining Issues		
Total Issues		

Calculation:

Declining Issues / Total Issues

Decline/Unchanged Ratio

Abbreviation: Decline/Unchnaged Ratio
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Declining Issues		
Unchanged Issues		

Calculation:

Declining Issues / Unchanged Issues

Market Thrust

Abbreviation: Market Thrust
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		

Calculation:

(Advancing Issues * Volume of Advancing Issues) - (Declining Issues * Volume of Declining Issues)

Market Thrust Oscillator

Abbreviation: Market Thrust Oscillator
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		

Calculation:

$$\frac{(\text{Advancing Issues} * \text{Volume of Advancing Issues}) - (\text{Declining Issues} * \text{Volume of Declining Issues})}{(\text{Advancing Issues} * \text{Volume of Advancing Issues}) + (\text{Declining Issues} * \text{Volume of Declining Issues})}$$

Unchanged/Total Ratio

Abbreviation: Unchanged/Total Ratio
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Unchanged Issues		
Total Issues		

Calculation:

Unchanged Issues / Total Issues

Advance-Decline Spread: Simple MovAvg

Abbreviation: Advance-Decline Spread: Avg
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = Advance-Decline Spread(Advancing Issues, Declining Issues)

Advance-Decline Spread represents Advance-Decline Spread
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Advance-Decline Spread indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Advance-Decline Spread: Simple MovAvg Difference

Abbreviation: Advance-Decline Spread: Avg Diff
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = Advance-Decline Spread(Advancing Issues, Declining Issues)

Advance-Decline Spread represents Advance-Decline Spread
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Advance-Decline Spread indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Advance-Decline Spread: Exponential MovAvg (McClellan Oscillator)

Abbreviation: Advance-Decline Spread: ExpAvg
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = Advance-Decline Spread(Advancing Issues, Declining Issues)

Advance-Decline Spread represents Advance-Decline Spread
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Advance-Decline Spread indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Advance-Decline Spread: Exponential MovAvg Difference

Abbreviation: Advance-Decline Spread: ExpAvg Diff
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = Advance-Decline Spread(Advancing Issues, Declining Issues)

Advance-Decline Spread represents Advance-Decline Spread
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Advance-Decline Spread indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Advance-Decline Spread: Volume Weighted MovAvg

Abbreviation: Advance-Decline Spread: VolWgtAvg
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Total Volume		
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg Periods)

where
X = Advance-Decline Spread(Advancing Issues, Declining Issues)

Advance-Decline Spread represents Advance-Decline Spread
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Advance-Decline Spread indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Advance-Decline Spread: Volume Weighted MovAvg Difference

Abbreviation: Advance-Decline Spread: VolWgtAvg Diff
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Total Volume		
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Total Volume, VolWgtAvg2 Periods)

where
X = Advance-Decline Spread(Advancing Issues, Declining Issues)

Advance-Decline Spread represents Advance-Decline Spread
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Advance-Decline Spread indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Advance/Advance+Decline Ratio: Simple MovAvg (Breadth Adv/Dec Indicator)

Abbreviation: Advance/Decline+Decline Ratio: Avg
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = Advance/Advance+Decline Ratio(Advancing Issues, Declining Issues)

Advance/Advance+Decline Ratio represents Advance/Advance+Decline Ratio
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Advance/Advance+Decline Ratio indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Advance/Advance+Decline Ratio: Simple MovAvg Difference

Abbreviation: Advance/Decline+Decline Ratio: Avg Diff
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = Advance/Advance+Decline Ratio(Advancing Issues, Declining Issues)

Advance/Advance+Decline Ratio represents Advance/Advance+Decline Ratio
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Advance/Advance+Decline Ratio indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Advance/Advance+Decline Ratio: Exponential MovAvg (STIX)

Abbreviation: Advance/Decline+Decline Ratio: ExpAvg
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
ExpAvg Periods	Int >=1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = Advance/Advance+Decline Ratio(Advancing Issues, Declining Issues)

Advance/Advance+Decline Ratio represents Advance/Advance+Decline Ratio
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Advance/Advance+Decline Ratio indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Advance/Advance+Decline Ratio: Exponential MovAvg Difference

Abbreviation: Advance/Decline+Decline Ratio: ExpAvg Diff
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
ExpAvg1 Periods	Int >=1	5
ExpAvg Periods	Int >=1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = Advance/Advance+Decline Ratio(Advancing Issues, Declining Issues)

Advance/Advance+Decline Ratio represents Advance/Advance+Decline Ratio
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Advance/Advance+Decline Ratio indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Advance/Advance+Decline Ratio: Volume Weighted MovAvg

Abbreviation: Advance/Decline+Decline Ratio: VolWgtAvg
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Total Volume		
Avg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg Periods)

where
X = Advance/Advance+Decline Ratio(Advancing Issues, Declining Issues)

Advance/Advance+Decline Ratio represents Advance/Advance+Decline Ratio
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Advance/Advance+Decline Ratio indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Advance/Advance+Decline Ratio: Volume Weighted MovAvg Difference

Abbreviation: Advance/Decline+Decline Ratio: VolWgtAvg Diff
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Total Volume		
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Total Volume, VolWgtAvg2 Periods)

where
X = Advance/Advance+Decline Ratio(Advancing Issues, Declining Issues)

Advance/Advance+Decline Ratio represents Advance/Advance+Decline Ratio
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Advance/Advance+Decline Ratio indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Advance/Decline Ratio: Simple MovAvg

Abbreviation: Advance/Decline Ratio: Avg
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = Advance/Decline Ratio(Advancing Issues, Declining Issues)

Advance/Decline Ratio represents Advance / Decline Ratio
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Advance/Decline Ratio indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Advance/Decline Ratio: Simple MovAvg Difference

Abbreviation: Advance/Decline Ratio: Avg Diff
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = Advance/Decline Ratio(Advancing Issues, Declining Issues)

Advance/Decline Ratio represents Advance / Decline Ratio
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Advance/Decline Ratio indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Advance/Decline Ratio: Exponential MovAvg

Abbreviation: Advance/Decline Ratio: ExpAvg
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
ExpAvg Periods	Int >=1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = Advance/Decline Ratio(Advancing Issues, Declining Issues)

Advance/Decline Ratio represents Advance / Decline Ratio
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Advance/Decline Ratio indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Advance/Decline Ratio: Exponential MovAvg Difference

Abbreviation: Advance/Decline Ratio: ExpAvg Diff
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
ExpAvg1 Periods	Int >=1	5
ExpAvg2 Periods	Int >=1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = Advance/Decline Ratio(Advancing Issues, Declining Issues)

Advance/Decline Ratio represents Advance / Decline Ratio
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Advance/Decline Ratio indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Advance/Decline Ratio: Volume Weighted MovAvg

Abbreviation: Advance/Decline Ratio: VolWgtAvg
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Total Volume		
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg Periods)

where
X = Advance/Decline Ratio(Advancing Issues, Declining Issues)

Advance/Decline Ratio represents Advance / Decline Ratio
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Advance/Decline Ratio indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Advance/Decline Ratio: Volume Weighted MovAvg Difference

Abbreviation: Advance/Decline Ratio: VolWgtAvg Diff
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Total Volume		
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Total Volume, VolWgtAvg2 Periods)

where
X = Advance/Decline Ratio(Advancing Issues, Declining Issues)

Advance/Decline Ratio represents Advance / Decline Ratio
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Advance/Decline Ratio indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Arms Short-Term Trading Index: Simple MovAvg

Abbreviation: Arms Short-Term Index: Avg
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = Arms Short-Term Trading Index(Advancing Issues, Declining Issues, Volume Advancing Issues, Volume Declining Issues)

Arms Short-Term Trading Index represents Arms Short-Term Trading Index (TRIN)
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Arms Short-Term Trading Index indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Arms Short-Term Trading Index: Simple MovAvg Difference

Abbreviation: Arms Short-Term Index: Avg Diff
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = Arms Short-Term Trading Index(Advancing Issues, Declining Issues, Volume Advancing Issues, Volume Declining Issues)

Arms Short-Term Trading Index represents Arms Short-Term Trading Index (TRIN)
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Arms Short-Term Trading Index indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Arms Short-Term Trading Index: Exponential MovAvg

Abbreviation: Arms Short-Term Index: ExpAvg
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		
ExpAvg Periods	Int >=1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

w here
X = Arms Short-Term Trading Index(Advancing Issues, Declining Issues, Volume Advancing Issues, Volume Declining Issues)

Arms Short-Term Trading Index represents Arms Short-Term Trading Index (TRIN)
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Arms Short-Term Trading Index indicator by calculating its moving average. Since it uses an exponential moving average (w hich gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Arms Short-Term Trading Index: Exponential MovAvg Difference

Abbreviation: Arms Short-Term Index: ExpAvg Diff
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		
ExpAvg1 Periods	Int >=1	5
ExpAvg2 Periods	Int >=1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = Arms Short-Term Trading Index(Advancing Issues, Declining Issues, Volume Advancing Issues, Volume Declining Issues)

Arms Short-Term Trading Index represents Arms Short-Term Trading Index (TRIN)
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Arms Short-Term Trading Index indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Arms Short-Term Trading Index: Volume Weighted MovAvg

Abbreviation: Arms Short-Term Index: VolWgtAvg
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		
Total Volume		
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg Periods)

w here
X = Arms Short-Term Trading Index(Advancing Issues, Declining Issues, Volume Advancing Issues, Volume Declining Issues)

Arms Short-Term Trading Index represents Arms Short-Term Trading Index (TRIN)
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Arms Short-Term Trading Index indicator by calculating its moving average. Since it uses a volume w eighted moving average (w hich gives more importance to those periods w ith higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively low er volume.

Arms Short-Term Trading Index :Volume Weighted MovAvg Difference

Abbreviation: Arms Short-Term Index: VolWgtAvg Diff
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		
Total Volume		
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Total Volume, VolWgtAvg2 Periods)

w here
X = Arms Short-Term Trading Index(Advancing Issues, Declining Issues, Volume Advancing Issues, Volume Declining Issues)

Arms Short-Term Trading Index represents Arms Short-Term Trading Index (TRIN)
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Arms Short-Term Trading Index indicator by calculating the difference betw een tw o moving averages. Since it uses volume w eighted moving averages (w hich give more importance to those periods w ith higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement betw een periods of relatively higher volume than betw een periods of relatively low er volume.

Market Thrust: Simple MovAvg

Abbreviation: Market Thrust: Avg
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

w here
X = Market Thrust(Advancing Issues, Declining Issues, Volume Advancing Issues, Volume Declining Issues)

Market Thrust represents Market Thrust
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Market Thrust indicator by calculating its moving average. Since it uses a simple moving average (w hich gives equal importance to all the periods w ithin the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Market Thrust: Simple MovAvg Difference

Abbreviation: Market Thrust: Avg Diff
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = Market Thrust(Advancing Issues, Declining Issues, Volume Advancing Issues, Volume Declining Issues)

Market Thrust represents Market Thrust
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Market Thrust indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Market Thrust: Exponential MovAvg

Abbreviation: Market Thrust: ExpAvg
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		
ExpAvg Periods	Int >=1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

w here
X = Market Thrust(Advancing Issues, Declining Issues, Volume Advancing Issues, Volume Declining Issues)

Market Thrust represents Market Thrust
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Market Thrust indicator by calculating its moving average. Since it uses an exponential moving average (w hich gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Market Thrust: Exponential MovAvg Difference

Abbreviation: Market Thrust: ExpAvg Diff
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		
ExpAvg1 Periods	Int >=1	5
ExpAvg2 Periods	Int >=1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = Market Thrust(Advancing Issues, Declining Issues, Volume Advancing Issues, Volume Declining Issues)

Market Thrust represents Market Thrust
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Market Thrust indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Market Thrust: Volume Weighted MovAvg

Abbreviation: Market Thrust: VolWgtAvg
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		
Total Volume		
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg Periods)

where
X = Market Thrust(Advancing Issues, Declining Issues, Volume Advancing Issues, Volume Declining Issues)

Market Thrust represents Market Thrust
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Market Thrust indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Market Thrust: Volume Weighted MovAvg Difference

Abbreviation: Market Thrust: VolWgtAvg Diff
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		
Total Volume		
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Total Volume, VolWgtAvg2 Periods)

w here
X = Market Thrust(Advancing Issues, Declining Issues, Volume Advancing Issues, Volume Declining Issues)

Market Thrust represents Market Thrust
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Market Thrust indicator by calculating the difference betw een tw o moving averages. Since it uses volume w eighted moving averages (w hich give more importance to those periods w ith higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement betw een periods of relatively higher volume than betw een periods of relatively low er volume.

Market Thrust Oscillator: Simple MovAvg

Abbreviation: Market Thrust Oscillator: Avg
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

w here
X = Market Thrust Oscillator(Advancing Issues, Declining Issues, Volume Advancing Issues, Volume Declining Issues)

Market Thrust Oscillator represents Market Thrust Oscillator
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Market Thrust Oscillator indicator by calculating its moving average. Since it uses a simple moving average (w hich gives equal importance to all the periods w ithin the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Market Thrust Oscillator: Simple MovAvg Difference

Abbreviation: Market Thrust Oscillator: Avg Diff
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

w here
X = Market Thrust Oscillator(Advancing Issues, Declining Issues, Volume Advancing Issues, Volume Declining Issues)

Market Thrust Oscillator represents Market Thrust Oscillator
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Market Thrust Oscillator indicator by calculating the difference betw een tw o moving averages. Since it uses simple moving averages (w hich give equal importance to all the periods w ithin the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement betw een recent or relatively higher volume periods as do the exponential and volume w eighted variants.

Market Thrust Oscillator: Exponential MovAvg

Abbreviation: Market Thrust Oscillator: ExpAvg
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		
ExpAvg Periods	Int >=1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = Market Thrust Oscillator(Advancing Issues, Declining Issues, Volume Advancing Issues, Volume Declining Issues)

Market Thrust Oscillator represents Market Thrust Oscillator
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Market Thrust Oscillator indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Market Thrust Oscillator: Exponential MovAvg Difference

Abbreviation: Market Thrust Oscillator: ExpAvg Diff
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		
ExpAvg1 Periods	Int >=1	5
ExpAvg2 Periods	Int >=1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

w here
X = Market Thrust Oscillator(Advancing Issues, Declining Issues, Volume Advancing Issues, Volume Declining Issues)

Market Thrust Oscillator represents Market Thrust Oscillator
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Market Thrust Oscillator indicator by calculating the difference betw een tw o moving averages. Since it uses exponential moving averages (w hich give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Market Thrust Oscillator: Volume Weighted MovAvg

Abbreviation: Market Thrust Oscillator: VolWgtAvg
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		
Total Volume		
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg Periods)

where
X = Market Thrust Oscillator(Advancing Issues, Declining Issues, Volume Advancing Issues, Volume Declining Issues)

Market Thrust Oscillator represents Market Thrust Oscillator
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Market Thrust Oscillator indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Market Thrust Oscillator: Volume Weighted MovAvg Difference

Abbreviation: Market Thrust Oscillator: VolWgtAvg Diff
Category: Market Advance / Decline

Input Parameters:

Name	Range	Default
Advancing Issues		
Declining Issues		
Volume of Advancing Issues		
Volume of Declining Issues		
Total Volume		
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Volume, VolWgtAvg2 Periods)

w here
X = Market Thrust Oscillator(Advancing Issues, Declining Issues, Volume Advancing Issues, Volume Declining Issues)

Market Thrust Oscillator represents Market Thrust Oscillator
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Market Thrust Oscillator indicator by calculating the difference betw een tw o moving averages. Since it uses volume w eighted moving averages (w hich give more importance to those periods w ith higher volume relative to the other periods in the moving average’s time frame), the indicator tends to focus more upon movement betw een periods of relatively higher volume than betw een periods of relatively low er volume.

New Highs-New Lows/New Highs+New Lows

Abbreviation: New Highs-New Lows/New Highs+New Lows
Category: Market New Highs / New Lows

Input Parameters:

Name	Range	Default
New Highs		
New Lows		

Calculation:

(New Highs - New Lows) / (New Highs + New Lows)

New Highs-New Lows/Total Ratio

Abbreviation: New Highs-New Lows/ Total Ratio
Category: Market New Highs / New Lows

Input Parameters:

Name	Range	Default
New Highs		
New Lows		
Total Issues		

Calculation:

(New Highs - New Lows) / Total Issues

New Highs-New Lows Spread

Abbreviation: New Highs-New Lows Spread
Category: Market New Highs / New Lows

Input Parameters:

Name	Range	Default
New Highs		
New Lows		

Calculation:

New Highs - New Lows

New Highs/New Lows Ratio

Abbreviation: New Highs/New Lows Ratio
Category: Market New Highs / New Lows

Input Parameters:

Name	Range	Default
New Highs		
New Lows		

Calculation:

New Highs / New Lows

New Highs-New Lows Spread: Simple MovAvg

Abbreviation: New Highs-New Lows Spread: Avg
Category: Market New Highs / New Lows

Input Parameters:

Name	Range	Default
New Highs		
New Lows		
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = New Highs-New Lows Spread(New Highs, New Lows)

New Highs-New Lows Spread represents New Highs-New Lows Spread
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the New Highs-New Lows Spread indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

New Highs-New Lows Spread: Simple MovAvg Difference

Abbreviation: New Highs-New Lows Spread: Avg Diff
Category: Market New Highs / New Lows

Input Parameters:

Name	Range	Default
New Highs		
New Lows		
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = New Highs-New Lows Spread(New Highs, New Lows)

New Highs-New Lows Spread represents New Highs-New Lows Spread
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the New Highs-New Lows Spread indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

New Highs-New Lows Spread: Exponential MovAvg

Abbreviation: New Highs-New Lows Spread: ExpAvg
Category: Market New Highs / New Lows

Input Parameters:

Name	Range	Default
New Highs		
New Lows		
ExpAvg Periods	Int >=1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = New Highs-New Lows Spread(New Highs, New Lows)

New Highs-New Lows Spread represents New Highs-New Lows Spread
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the New Highs-New Lows Spread indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

New Highs-New Lows Spread: Exponential MovAvg Difference

Abbreviation: New Highs-New Lows Spread: ExpAvg Diff
Category: Market New Highs / New Lows

Input Parameters:

Name	Range	Default
New Highs		
New Lows		
ExpAvg1 Periods	Int >=1	5
ExpAvg2 Periods	Int >=1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = New Highs-New Lows Spread(New Highs, New Lows)

New Highs-New Lows Spread represents New Highs-New Lows Spread
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the New Highs-New Lows Spread indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

New Highs-New Lows Spread: Volume Weighted MovAvg

Abbreviation: New Highs-New Lows Spread: VolWgtAvg
Category: Market New Highs / New Lows

Input Parameters:

Name	Range	Default
New Highs		
New Lows		
Total Volume		
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg Periods)

where
X = New Highs-New Lows Spread(New Highs, New Lows)

New Highs-New Lows Spread represents New Highs-New Lows Spread
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the New Highs-New Lows Spread indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

New Highs-New Lows Spread: Volume Weighted MovAvg Difference

Abbreviation: New Highs-New Lows Spread: VolWgtAvg
Category: Market New Highs / New Lows

Input Parameters:

Name	Range	Default
New Highs		
New Lows		
Total Volume		
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Total Volume, VolWgtAvg2 Periods)

where
X = New Highs-New Lows Spread(New Highs, New Lows)

New Highs-New Lows Spread represents New Highs-New Lows Spread
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the New Highs-New Lows Spread indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Volume Advancing-Volume Declining/Total Volume Ratio

Abbreviation: Volume Advancing-Volume Declining / Total Volume Ratio
Category: Market Volume Advance / Decline

Input Parameters:

Name	Range	Default
Volume of Advancing Issues		
Volume of Declining Issues		
Total Volume		

Calculation:

$$\frac{\text{Volume of Advancing Issues - Volume of Declining Issues}}{\text{Total Volume}}$$

Volume Advancing-Volume Declining/Volume Advancing+Declining Ratio

Abbreviation: Volume Advancing-Volume Declining / Volume Adv+Dec Ratio
Category: Market Volume Advance / Decline

Input Parameters:

Name	Range	Default
Volume of Advancing Issues		
Volume of Declining Issues		

Calculation:

$$\frac{\text{Volume of Advancing Issues - Volume of Declining Issues}}{\text{Volume of Advancing Issues + Volume of Declining Issues}}$$

Volume Advancing-Volume Declining Spread

Abbreviation: Volume Advancing-Volume Declining Spread
Category: Market Volume Advance / Decline

Input Parameters:

Name	Range	Default
Volume of Advancing Issues		
Volume of Declining Issues		

Calculation:

Volume of Advancing Issues - Volume of Declining Issues

Volume Advancing/Volume Declining Ratio (Upside/Downside Ratio)

Abbreviation: Volume Advancing/Volume Declining Ratio
Category: Market Volume Advance / Decline

Input Parameters:

Name	Range	Default
Volume of Advancing Issues		
Volume of Declining Issues		

Calculation:

$$\frac{\text{Volume of Advancing Issues}}{\text{Volume of Declining Issues}}$$

Volume Advancing-Volume Declining Spread: Simple MovAvg

Abbreviation: Volume Advancing-Volume Declining Spread: Avg
Category: Market Volume Advance / Decline

Input Parameters:

Name	Range	Default
Volume of Advancing Issues		
Volume of Declining Issues		
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = Volume Advancing-Volume Declining Spread(Volume of Adv Issues, Volume of Dec Issues)

Volume Advancing-Volume Declining Spread represents Volume Advancing-Volume Declining Spread
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Volume Advancing-Volume Declining Spread indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Volume Advancing-Volume Declining Spread: Simple MovAvg Difference

Abbreviation: Volume Advancing-Volume Declining Spread: Avg Diff
Category: Market Volume Advance / Decline

Input Parameters:

Name	Range	Default
Volume of Advancing Issues		
Volume of Declining Issues		
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = Volume Advancing-Volume Declining Spread(Volume of Adv Issues, Volume of Dec Issues)

Volume Advancing-Volume Declining Spread represents Volume Advancing-Volume Declining Spread
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Volume Advancing-Volume Declining Spread indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Volume Advancing-Volume Declining Spread: Exponential MovAvg

Abbreviation: Volume Advancing-Volume Declining Spread: ExpAvg
Category: Market Volume Advance / Decline

Input Parameters:

Name	Range	Default
Volume of Advancing Issues		
Volume of Declining Issues		
ExpAvg Periods	Int >=1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = Volume Advancing-Volume Declining Spread(Volume of Adv Issues, Volume of Dec Issues)

Volume Advancing-Volume Declining Spread represents Volume Advancing-Volume Declining Spread
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Volume Advancing-Volume Declining Spread indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Volume Advancing-Volume Declining Spread: Exponential MovAvg Difference

Abbreviation: Volume Advancing-Volume Declining Spread: ExpAvg Diff
Category: Market Volume Advance / Decline

Input Parameters:

Name	Range	Default
Volume of Advancing Issues		
Volume of Declining Issues		
ExpAvg1 Periods	Int >=1	5
ExpAvg2 Periods	Int >=1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = Volume Advancing-Volume Declining Spread(Volume of Adv Issues, Volume of Dec Issues)

Volume Advancing-Volume Declining Spread represents Volume Advancing-Volume Declining Spread
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Volume Advancing-Volume Declining Spread indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Volume Advancing-Volume Declining Spread: Volume Weighted MovAvg

Abbreviation: Volume Advancing-Volume Declining Spread: VolWgtAvg
Category: Market Volume Advance / Decline

Input Parameters:

Name	Range	Default
Volume of Advancing Issues		
Volume of Declining Issues		
Total Volume		
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg Periods)

where
X = Volume Advancing-Volume Declining Spread(Volume of Adv Issues, Volume of Dec Issues)

Volume Advancing-Volume Declining Spread represents Volume Advancing-Volume Declining Spread
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Volume Advancing-Volume Declining Spread indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Volume Advancing-Volume Declining Spread: Volume Weighted MovAvg Difference

Abbreviation: Volume Advancing-Volume Declining Spread: VolWgtAvg Diff
Category: Market Volume Advance / Decline

Input Parameters:

Name	Range	Default
Volume of Advancing Issues		
Volume of Declining Issues		
Total Volume		
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Total Volume, VolWgtAvg2 Periods)

w here
X = Volume Advancing-Volume Declining Spread(Volume of Adv Issues, Volume of Dec Issues)

Volume Advancing-Volume Declining Spread represents Volume Advancing-Volume Declining Spread
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Volume Advancing-Volume Declining Spread indicator by calculating the difference betw een tw o moving averages. Since it uses volume w eighted moving averages (w hich give more importance to those periods w ith higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement betw een periods of relatively higher volume than betw een periods of relatively low er volume.

Volume Advancing/Volume Declining Ratio: Simple MovAvg

Abbreviation: Volume Advancing/Volume Declining Ratio: Avg
Category: Market Volume Advance / Decline

Input Parameters:

Name	Range	Default
Volume of Advancing Issues		
Volume of Declining Issues		
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = Volume Advancing/Volume Declining Ratio(Volume of Adv Issues, Volume of Dec Issues)

Volume Advancing/Volume Declining Ratio represents Volume Advancing/Volume Declining Ratio (Upside/Downside Ratio)
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Volume Advancing/Volume Declining Ratio indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Volume Advancing/Volume Declining Ratio: Simple MovAvg Difference

Abbreviation: Volume Advancing/Volume Declining Ratio: Avg Diff
Category: Market Volume Advance / Decline

Input Parameters:

Name	Range	Default
Volume of Advancing Issues		
Volume of Declining Issues		
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = Volume Advancing/Volume Declining Ratio(Volume of Adv Issues, Volume of Dec Issues)

Volume Advancing/Volume Declining Ratio represents Volume Advancing/Volume Declining Ratio (Upside/Downside Ratio)
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Volume Advancing/Volume Declining Ratio indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Volume Advancing/Volume Declining Ratio: Exponential MovAvg

Abbreviation: Volume Advancing/Volume Declining Ratio: ExpAvg
Category: Market Volume Advance / Decline

Input Parameters:

Name	Range	Default
Volume of Advancing Issues		
Volume of Declining Issues		
ExpAvg Periods	Int >= 1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = Volume Advancing/Volume Declining Ratio(Volume of Adv Issues, Volume of Dec Issues)

Volume Advancing/Volume Declining Ratio represents Volume Advancing/Volume Declining Ratio (Upside/Downside Ratio)
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Volume Advancing/Volume Declining Ratio indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Volume Advancing/Volume Declining Ratio: Exponential MovAvg Difference

Abbreviation: Volume Advancing/Volume Declining Ratio: ExpAvg Diff
Category: Market Volume Advance / Decline

Input Parameters:

Name	Range	Default
Volume of Advancing Issues		
Volume of Declining Issues		
ExpAvg1 Periods	Int >= 1	5
ExpAvg2 Periods	Int >= 1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = Volume Advancing/Volume Declining Ratio(Volume of Adv Issues, Volume of Dec Issues)

Volume Advancing/Volume Declining Ratio represents Volume Advancing/Volume Declining Ratio (Upside/Downside Ratio)
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Volume Advancing/Volume Declining Ratio indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Volume Advancing/Volume Declining Ratio: Volume Weighted MovAvg

Abbreviation: Volume Advancing/Volume Declining Ratio: VolWgtAvg
Category: Market Volume Advance / Decline

Input Parameters:

Name	Range	Default
Volume of Advancing Issues		
Volume of Declining Issues		
Total Volume		
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg Periods)

where
X = Volume Advancing/Volume Declining Ratio(Volume of Adv Issues, Volume of Dec Issues)

Volume Advancing/Volume Declining Ratio represents Volume Advancing/Volume Declining Ratio (Upside/Downside Ratio)
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Volume Advancing/Volume Declining Ratio indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Volume Advancing/Volume Declining Ratio: Volume Weighted MovAvg Difference

Abbreviation: Volume Advancing/Volume Declining Ratio: VolWgtAvg Diff
Category: Market Volume Advance / Decline

Input Parameters:

Name	Range	Default
Volume of Advancing Issues		
Volume of Declining Issues		
Total Volume		
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Total Volume, VolWgtAvg2 Periods)

where
X = Volume Advancing/Volume Declining Ratio(Volume of Adv Issues, Volume of Dec Issues)

Volume Advancing/Volume Declining Ratio represents Volume Advancing/Volume Declining Ratio (Upside/Downside Ratio)
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Volume Advancing/Volume Declining Ratio indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Short Sales Interest/Total Ratio

Abbreviation: Short Sales Interest/Total Ratio
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Total Short Interest		
Total Short Sales		

Calculation:

Total Short Interest / Total Short Sales

Short Sales Member/Total Ratio

Abbreviation: Short Sales Member/Total Ratio
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Member Short Sales		
Total Short Sales		

Calculation:

Member Short Sales / Total Short Sales

Short Sales Public/Specialist Ratio

Abbreviation: Short Sales Public/Specialist Ratio
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Public Short Sales		
Specialist Short Sales		

Calculation:

Public Short Sales / Specialist Short Sales

Short Sales Public/Total Ratio

Abbreviation: Short Sales Public/Total Ratio
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Public Short Sales		
Total Short Sales		

Calculation:

Public Short Sales / Total Short Sales

Short Sales Specialist/Total Ratio

Abbreviation: Short Sales Specialist/Total Ratio
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Specialist Short Sales		
Total Short Sales		

Calculation:

Specialist Short Sales / Total Short Sales

Short Sales Total/Volume Ratio

Abbreviation: Short Sales Total/Volume Ratio
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Total Short Sales		
Total Volume		

Calculation:

Total Short Sales / Total Volume

Short Sales Interest/Total Ratio: Simple MovAvg

Abbreviation: Short Sales Interest/Total Ratio: Avg
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Total Short Interest		
Total Short Sales		
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = Short Sales Interest/Total Ratio(Total Short Interest, Total Short Sales)

Short Sales Interest/Total Ratio represents Short Sales Interest/Total Ratio
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Short Sales Interest/Total Ratio indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Short Sales Interest/Total Ratio: Simple MovAvg Difference

Abbreviation: Short Sales Interest/Total Ratio: Avg Diff
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Total Short Interest		
Total Short Sales		
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = Short Sales Interest/Total Ratio(Total Short Interest, Total Short Sales)

Short Sales Interest/Total Ratio represents Short Sales Interest/Total Ratio
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Short Sales Interest/Total Ratio indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Short Sales Interest/Total Ratio: Exponential MovAvg

Abbreviation: Short Sales Interest/Total Ratio: ExpAvg
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Total Short Interest		
Total Short Sales		
ExpAvg Periods	Int >=1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = Short Sales Interest/Total Ratio(Total Short Interest, Total Short Sales)

Short Sales Interest/Total Ratio represents Short Sales Interest/Total Ratio
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Short Sales Interest/Total Ratio indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Short Sales Interest/Total Ratio: Exponential MovAvg Difference

Abbreviation: Short Sales Interest/Total Ratio: ExpAvg Diff
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Total Short Interest		
Total Short Sales		
ExpAvg1 Periods	Int >=1	5
ExpAvg2 Periods	Int >=1	5

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = Short Sales Interest/Total Ratio(Total Short Interest, Total Short Sales)

Short Sales Interest/Total Ratio represents Short Sales Interest/Total Ratio
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Short Sales Interest/Total Ratio indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Short Sales Interest/Total Ratio: Volume Weighted MovAvg

Abbreviation: Short Sales Interest/Total Ratio: VolWgtAvg
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Total Short Interest		
Total Short Sales		
Total Volume		
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg Periods)

where
X = Short Sales Interest/Total Ratio(Total Short Interest, Total Short Sales)

Short Sales Interest/Total Ratio represents Short Sales Interest/Total Ratio
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Short Sales Interest/Total Ratio indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Short Sales Interest/Total Ratio: Volume Weighted MovAvg Difference

Abbreviation: Short Sales Interest/Total Ratio: VolWgtAvg Diff
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Total Short Interest		
Total Short Sales		
Total Volume		
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Total Volume, VolWgtAvg2 Periods)

where
X = Short Sales Interest/Total Ratio(Total Short Interest, Total Short Sales)

Short Sales Interest/Total Ratio represents Short Sales Interest/Total Ratio
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Short Sales Interest/Total Ratio indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Short Sales Member/Total Ratio: Simple MovAvg

Abbreviation: Short Sales Member/Total Ratio: Avg
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Member Short Sales		
Total Short Sales		
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = Short Sales Member/Total Ratio(Member Short Sales, Total Short Sales)

Short Sales Member/Total Ratio represents Short Sales Member/Total Ratio
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Short Sales Member/Total Ratio indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Short Sales Member/Total Ratio: Simple MovAvg Difference

Abbreviation: Short Sales Member/Total Ratio: Avg Diff
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Member Short Sales		
Total Short Sales		
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = Short Sales Member/Total Ratio(Member Short Sales, Total Short Sales)

Short Sales Member/Total Ratio represents Short Sales Member/Total Ratio
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Short Sales Member/Total Ratio indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Short Sales Member/Total Ratio: Exponential MovAvg

Abbreviation: Short Sales Member/Total Ratio: ExpAvg
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Member Short Sales		
Total Short Sales		
ExpAvg Periods	Int >=1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = Short Sales Member/Total Ratio(Member Short Sales, Total Short Sales)

Short Sales Member/Total Ratio represents Short Sales Member/Total Ratio
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Short Sales Member/Total Ratio indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Short Sales Member/Total Ratio: Exponential MovAvg Difference

Abbreviation: Short Sales Member/Total Ratio: ExpAvg Diff
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Member Short Sales		
Total Short Sales		
ExpAvg1 Periods	Int >=1	5
ExpAvg2 Periods	Int >=1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

w here
X = Short Sales Member/Total Ratio(Member Short Sales, Total Short Sales)

Short Sales Member/Total Ratio represents Short Sales Member/Total Ratio
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Short Sales Member/Total Ratio indicator by calculating the difference betw een tw o moving averages. Since it uses exponential moving averages (w hich give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Short Sales Member/Total Ratio: Volume Weighted MovAvg

Abbreviation: Short Sales Member/Total Ratio: VolWgtAvg
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Member Short Sales		
Total Short Sales		
Total Volume		
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg Periods)

where
X = Short Sales Member/Total Ratio(Member Short Sales, Total Short Sales)

Short Sales Member/Total Ratio represents Short Sales Member/Total Ratio
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Short Sales Member/Total Ratio indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Short Sales Member/Total Ratio: Volume Weighted MovAvg Difference

Abbreviation: Short Sales Member/Total Ratio: VolWgtAvg Diff
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Member Short Sales		
Total Short Sales		
Total Volume		
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Total Volume, VolWgtAvg2 Periods)

where
X = Short Sales Member/Total Ratio(Member Short Sales, Total Short Sales)

Short Sales Member/Total Ratio represents Short Sales Member/Total Ratio
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Short Sales Member/Total Ratio indicator by calculating the difference between two moving averages. Since it uses volume weighted moving averages (which give more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement between periods of relatively higher volume than between periods of relatively lower volume.

Short Sales Public/Total Ratio: Simple MovAvg

Abbreviation: Short Sales Public/Total Ratio: Avg
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Public Short Sales		
Total Short Sales		
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = Short Sales Public/Total Ratio(Public Short Sales, Total Short Sales)

Short Sales Public/Total Ratio represents Short Sales Public/Total Ratio
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Short Sales Public/Total Ratio indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Short Sales Public/Total Ratio: Simple MovAvg Difference

Abbreviation: Short Sales Public/Total Ratio: Avg Diff
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Public Short Sales		
Total Short Sales		
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = Short Sales Public/Total Ratio(Public Short Sales, Total Short Sales)

Short Sales Public/Total Ratio represents Short Sales Public/Total Ratio
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Short Sales Public/Total Ratio indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Short Sales Public/Total Ratio: Exponential MovAvg

Abbreviation: Short Sales Public/Total Ratio: ExpAvg
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Public Short Sales		
Total Short Sales		
ExpAvg Periods	Int >=1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = Short Sales Public/Total Ratio(Public Short Sales, Total Short Sales)

Short Sales Public/Total Ratio represents Short Sales Public/Total Ratio
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Short Sales Public/Total Ratio indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Short Sales Public/Total Ratio: Exponential MovAvg Difference

Abbreviation: Short Sales Public/Total Ratio: ExpAvg Diff
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Public Short Sales		
Total Short Sales		
ExpAvg1 Periods	Int >=1	5
ExpAvg2 Periods	Int >=1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = Short Sales Public/Total Ratio(Public Short Sales, Total Short Sales)

Short Sales Public/Total Ratio represents Short Sales Public/Total Ratio
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Short Sales Public/Total Ratio indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Short Sales Public/Total Ratio: Volume Weighted MovAvg

Abbreviation: Short Sales Public/Total Ratio: VolWgtAvg
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Public Short Sales		
Total Short Sales		
Total Volume		
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg Periods)

where
X = Short Sales Public/Total Ratio(Public Short Sales, Total Short Sales)

Short Sales Public/Total Ratio represents Short Sales Public/Total Ratio
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Short Sales Public/Total Ratio indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Short Sales Public/Total Ratio: Volume Weighted MovAvg Difference

Abbreviation: Short Sales Public/Total Ratio: VolWgtAvg Diff
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Public Short Sales		
Total Short Sales		
Total Volume		
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Total Volume, VolWgtAvg2 Periods)

w here
X = Short Sales Public/Total Ratio(Public Short Sales, Total Short Sales)

Short Sales Public/Total Ratio represents Short Sales Public/Total Ratio
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Short Sales Public/Total Ratio indicator by calculating the difference betw een tw o moving averages. Since it uses volume w eighted moving averages (w hich give more importance to those periods w ith higher volume relative to the other periods in the moving average's time frame), the indicator tends to focus more upon movement betw een periods of relatively higher volume than betw een periods of relatively low er volume.

Short Sales Specialist/Total Ratio: Simple MovAvg

Abbreviation: Short Sales Specialist/Total Ratio: Avg
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Specialist Short Sales		
Total Short Sales		
Avg Periods	Int >= 1	5

Calculation:

Avg(X, Avg Periods)

where
X = Short Sales Specialist/Total Ratio(Specialist Short Sales, Total Short Sales)

Short Sales Specialist/Total Ratio represents Short Sales Specialist/Total Ratio
Avg represents Simple Moving Average

Discussion:

This indicator attempts to smooth the Short Sales Specialist/Total Ratio indicator by calculating its moving average. Since it uses a simple moving average (which gives equal importance to all the periods within the moving average's time frame), this method of smoothing may cause more of a lag time than the exponential variant.

Short Sales Specialist/Total Ratio: Simple MovAvg Difference

Abbreviation: Short Sales Specialist/Total Ratio: Avg Diff
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Specialist Short Sales		
Total Short Sales		
Avg1 Periods	Int >= 1	5
Avg2 Periods	Int >= 1	10

Calculation:

Avg(X, Avg1 Periods) - Avg(X, Avg2 Periods)

where
X = Short Sales Specialist/Total Ratio(Specialist Short Sales, Total Short Sales)

Short Sales Specialist/Total Ratio represents Short Sales Specialist/Total Ratio
Avg represents Simple Moving Average

Discussion:

This indicator attempts to quantify movements in the Short Sales Specialist/Total Ratio indicator by calculating the difference between two moving averages. Since it uses simple moving averages (which give equal importance to all the periods within the moving average's time frame), the indicator treats all periods alike, and does not focus more upon movement between recent or relatively higher volume periods as do the exponential and volume weighted variants.

Short Sales Specialist/Total Ratio: Exponential MovAvg

Abbreviation: Short Sales Specialist/Total Ratio: ExpAvg
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Specialist Short Sales		
Total Short Sales		
ExpAvg Periods	Int >=1	5

Calculation:

ExpAvg(X, ExpAvg Periods)

where
X = Short Sales Specialist/Total Ratio(Specialist Short Sales, Total Short Sales)

Short Sales Specialist/Total Ratio represents Short Sales Specialist/Total Ratio
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to smooth the Short Sales Specialist/Total Ratio indicator by calculating its moving average. Since it uses an exponential moving average (which gives more importance to the most recent periods than to less recent periods), the smoothing is influenced most by recent periods.

Short Sales Specialist/Total Ratio: Exponential MovAvg Difference

Abbreviation: Short Sales Specialist/Total Ratio: ExpAvg Diff
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Specialist Short Sales		
Total Short Sales		
ExpAvg1 Periods	Int >=1	5
ExpAvg2 Periods	Int >=1	10

Calculation:

ExpAvg(X, ExpAvg1 Periods) - ExpAvg(X, ExpAvg2 Periods)

where
X = Short Sales Specialist/Total Ratio(Specialist Short Sales, Total Short Sales)

Short Sales Specialist/Total Ratio represents Short Sales Specialist/Total Ratio
ExpAvg represents Exponential Moving Average

Discussion:

This indicator attempts to quantify movements in the Short Sales Specialist/Total Ratio indicator by calculating the difference between two moving averages. Since it uses exponential moving averages (which give more importance to the most recent periods than to less recent periods), the indicator tends to focus more upon movement occurring in the most recent periods.

Short Sales Specialist/Total Ratio: Volume Weighted MovAvg

Abbreviation: Short Sales Specialist/Total Ratio: VolWgtAvg
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Specialist Short Sales		
Total Short Sales		
Total Volume		
VolWgtAvg Periods	Int >= 1	5

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg Periods)

where
X = Short Sales Specialist/Total Ratio(Specialist Short Sales, Total Short Sales)

Short Sales Specialist/Total Ratio represents Short Sales Specialist/Total Ratio
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to smooth the Short Sales Specialist/Total Ratio indicator by calculating its moving average. Since it uses a volume weighted moving average (which gives more importance to those periods with higher volume relative to the other periods in the moving average's time frame), the smoothing is influenced more by periods of relatively higher volume than by periods of relatively lower volume.

Short Sales Specialist/Total Ratio: Volume Weighted MovAvg Difference

Abbreviation: Short Sales Specialist/Total Ratio: VolWgtAvg Diff
Category: Market Short Sales

Input Parameters:

Name	Range	Default
Specialist Short Sales		
Total Short Sales		
Total Volume		
VolWgtAvg1 Periods	Int >= 1	5
VolWgtAvg2 Periods	Int >= 1	10

Calculation:

VolWgtAvg(X, Total Volume, VolWgtAvg1 Periods) - VolWgtAvg(X, Total Volume, VolWgtAvg2 Periods)

w here
X = Short Sales Specialist/Total Ratio(Specialist Short Sales, Total Short Sales)

Short Sales Specialist/Total Ratio represents Short Sales Specialist/Total Ratio
VolWgtAvg represents Volume Weighted Moving Average

Discussion:

This indicator attempts to quantify movements in the Short Sales Specialist/Total Ratio indicator by calculating the difference betw een tw o moving averages. Since it uses volume w eighted moving averages (w hich give more importance to those periods w ith higher volume relative to the other periods in the moving average’s time frame), the indicator tends to focus more upon movement betw een periods of relatively higher volume than betw een periods of relatively low er volume.

Fed Funds-Discount Rate Spread

Abbreviation: Fed Funds-Discount Rate Spread
Category: Economic

Input Parameters:

Name	Range	Default
Fed Funds Index		
Discount Rate		

Calculation:

Fed Funds Index - Discount Rate

Discussion:

A discount rate increase is usually a bearish sign, w hile a discount rate decrease is usually considered a bullish sign. Since changes in the federal funds rate are usually follow ed by corresponding changes in the discount rate, positive values are considered bearish, w hile negative values are considered bullish.

Fed Funds-Prime Rate Spread

Abbreviation: Fed Funds-Prime Rate Spread
Category: Economic

Input Parameters:

Name	Range	Default
Fed Funds Index		
Prime Rate		

Calculation:

Fed Funds Index - Prime Rate

Discussion:

A prime rate increase is usually a bearish sign, w hile a prime rate decrease is usually considered a bullish sign. Since changes in the federal funds rate are usually follow ed by corresponding changes in the prime rate, positive values are considered bearish, w hile negative values are considered bullish.

Chart Page Upper Rank

Abbreviation: ChartPageURank
Category: Chart Page Calculation

Input Parameters:

Name	Range	Default
Time Series		

Calculation:

Numeric rank, ranging from 1 to N, of a time series relative to other time series values across the chart page for a given date/time.

Where
1 represents the highestt chart page value
N represents the low est chart page value and the number of valid chart page values

Discussion:

The upper rank provides a measure of a time series relationship to the minimum and maximum value across all chart pages for a given date/time. Mathematically, the rank ranges betw een values of 1 and N, w ith N being the number of chart pages w ith valid values. The closer upper rank is to 1, the closer the time series value is to the maximum. The closer upper rank is to N, the closer the time series value is to the minimum.

Chart Page Lower Rank

Abbreviation: ChartPageLRank
Category: Chart Page Calculation

Input Parameters:

Name	Range	Default
Time Series		

Calculation:

Numeric rank, ranging from 1 to N, of a time series relative to other time series values across the chart page for a given date/time.

Where
1 represents the lowest chart page value
N represents the highest chart page value and the number of valid chart page values

Discussion:

The lower rank provides a measure of a time series relationship to the minimum and maximum value across all chart pages for a given date/time. Mathematically, the rank ranges between values of 1 and N, with N being the number of chart pages with valid values. The closer lower rank is to 1, the closer the time series value is to the minimum. The closer lower rank is to N, the closer the time series value is to the maximum.

Chart Page Percentile

Abbreviation: ChartPage%
Category: Chart Page Calculation

Input Parameters:

Name	Range	Default
Time Series		

Calculation:

100 * (Time Series - MinValue) / (MaxValue - MinVal)

w here
PriceHigh represents Chart Page Maximum
PriceLow represents Chart Page Minimum

Discussion:

The Chart Page Percentile provides a measure of a time series relationship to the minimum and maximum value across all chart pages for a given date/time. Mathematically, the percentile ranges betw een values of 0 and 100. The closer percentile is to 100, the closer the time series value is to the maximum. The closer %K is to 0, the closer the time series value is to the minimum.

Chart Page Maximum

Abbreviation: ChartPageMax
Category: Chart Page Calculation

Input Parameters:

Name	Range	Default
Time Series		

Calculation:

The maximum of valid current Time Series values for a given date/time across all chart pages in the chart.

Discussion:

Computes the maximum time series value across all chart pages for each date/time in the chart.

Chart Page Minimum

Abbreviation: ChartPageMin
Category: Chart Page Calculation

Input Parameters:

Name	Range	Default
Time Series		

Calculation:

The minimum of valid current Time Series values for a given date/time across all chart pages in the chart.

Discussion:

Computes the minimum time series value across all chart pages for each date/time in the chart.

Chart Page Sum

Abbreviation: ChartPageSum
Category: Chart Page Calculation

Input Parameters:

Name	Range	Default
Time Series		

Calculation:

The sum of valid current Time Series values for a given date/time across all chart pages in the chart.

Discussion:

Computes the sum of the time series value across all chart pages for each date/time in the chart.

Chart Page Average

Abbreviation: ChartPageAvg
Category: Chart Page Calculation

Input Parameters:

Name	Range	Default
Time Series		

Calculation:

The average of valid current Time Series values for a given date/time across all chart pages in the chart.

Where
Average = Sum / # Chart Pages with valid values

Discussion:

Computes the average of the time series value across all chart pages for each date/time in the chart.

Chart Page Count

Abbreviation: ChartPageCnt
Category: Chart Page Calculation

Input Parameters:

Name	Range	Default
Time Series		

Calculation:

The number of valid current Time Series values for a given date/time across all chart pages in the chart.

Discussion:

Computes the number of the time series values across all chart pages for each date/time in the chart.

Chart Page Standard Deviation

Abbreviation: ChartPageStndDev
Category: Chart Page Calculation

Input Parameters:

Name	Range	Default
Time Series		

Calculation:

Square root of Variance(X, n)

where
X = Time Series across all chart pages for a given date/time
n = Number of Chart pages with valid values (i.e. not N/A)

Variance represents Variance

Discussion:

Provides a measure of a time series volatility across all chart pages for each date/time in the chart.

Chart Page Z-Score

Abbreviation: ChartPageZScore
Category: Chart Page Calculation

Input Parameters:

Name	Range	Default
Time Series		

Calculation:

$$\frac{X - mean(X)}{StndDev(X, n)}$$

where
mean(X) = mean average of X across all chart pages for a given date/time

X = Time Series
n = Number of Chart pages with valid values (i.e. not N/A)

StndDev represents Standard Deviation

Discussion:

Provides a measure of a time series value relative to its mean expressed relative to its standard deviation across all chart pages for each date/time in the chart. A value of one indicates a value one standard deviation above the mean, while a value of two indicates a value two standard deviations above the mean. Likewise, a value of negative one indicates a value one standard deviation below the mean, while a value of negative two indicates a value two standard deviations below the mean.

Selective Lag

Abbreviation: SelectiveLag
Category: Selective Calculation

Input Parameters:

Name	Range	Default
Time Series		
Condition		
Periods Back	Int >= 1	5

Calculation:

Time Series value on the nth period back for which the condition is true

where
n = Periods Back

Discussion:

Analyzes only the time periods for which the condition is true and returns the time series value n of those time periods ago.

Selective Maximum Value

Abbreviation: SelectiveMax
Category: Selective Calculation

Input Parameters:

Name	Range	Default
Time Series		
Condition		
Window Size	Int >= 1	5

Calculation:

The maximum of the set containing the last n Time Series values for which the corresponding condition was true.

where
n = Window Size

Discussion:

Analyzes only the time periods for which the condition is true and computes the maximum time series value over the last n of those time periods.

Selective Minimum Value

Abbreviation: SelectiveMin
Category: Selective Calculation

Input Parameters:

Name	Range	Default
Time Series		
Condition		
Window Size	Int >= 1	5

Calculation:

The minimum of the set containing the last n Time Series values for which the corresponding condition was true.

where
n = Window Size

Discussion:

Analyzes only the time periods for which the condition is true and computes the minimum time series value over the last n of those time periods.

Selective Range

Abbreviation: SelectiveRange
Category: Selective Calculation

Input Parameters:

Name	Range	Default
Time Series		
Condition		
Window Size		5

Calculation:

SelectiveMax(X, n) - SelectiveMin(X, n)

where
X = Time Series
n = Window Size

SelectiveMax represents Selective Maximum Value
SelectiveMin represents Selective Minimum Value

Discussion:

Analyzes only the time periods for which the condition is true and computes the range of time series value over the last n of those time periods.

Selective Simple Moving Average

Abbreviation: SelectiveAvg
Category: Selective Calculation

Input Parameters:

Name	Range	Default
Time Series		
Condition		
Avg Periods	Int >= 1	5

Calculation:

(Sum of the set containing the last n Time Series values for which the corresponding condition was true) / n

where
n = Avg Periods

Discussion:

Analyzes only the time periods for which the condition is true and computes the average time series value over the last n of those time periods.

Selective Sum

Abbreviation: SelectiveSum
Category: Selective Calculation

Input Parameters:

Name	Range	Default
Time Series		
Condition		
Window Size	Int >= 1	5

Calculation:

Sum of the set containing the last n Time Series values for w hich the corresponding condition w as true

w here
n = Avg Periods

Discussion:

Analyzes only the time periods for w hich the condition is true and computes the sum of time series value over the last n of those time periods.

Selective Standard Deviation

Abbreviation: SelectiveStndDev
Category: Selective Calculation

Input Parameters:

Name	Range	Default
Time Series		
Condition		
Periods	Int >= 2	10

Calculation:

Square root of Variance(X, n) calculated over the last n periods w here the condition w as true

w here
X = Time Series
n = Periods

Variance represents Variance

Discussion:

Analyzes only the time periods for w hich the condition is true and provides a measure of the time series volatility over the last n of those time periods.

Selective Standard Normal: Z-Score

Abbreviation: SelectiveStndNormZScore
Category: Selective Calculation

Input Parameters:

Name	Range	Default
Time Series		
Condition		
Periods	Int >= 2	10

Calculation:

$$\frac{X - \text{SelectiveAvg}(X)}{\text{SelectiveStndDev}(X, n)}$$

where
X = Time Series
n = Periods

SelectiveAvg represents Selective Simple Moving Average
SelectiveStndDev StndDev represents Selective Standard Deviation

Discussion:

Analyzes only the time periods for which the condition is true and provides a measure of a time series value relative to its mean expressed relative to its standard deviation over the last n of those time periods. A value of one indicates a value one standard deviation above the mean, while a value of two indicates a value two standard deviations above the mean. Likewise, a value of negative one indicates a value one standard deviation below the mean, while a value of negative two indicates a value two standard deviations below the mean.

Selective Standard Normal: Data Point

Abbreviation: SelectiveStndNormPoint
Category: Selective Calculation

Input Parameters:

Name	Range	Default
Time Series		
Condition		
Periods	Int >= 2	10
Z-Score	Real	1.5

Calculation:

SelectiveAvg(X) + Z-Score * SelectiveStndDev(X,n)

w here
X = Time Series
n = Periods

SelectiveAvg represents Selective Simple Moving Average
SelectiveStndDev StndDev represents Selective Standard Deviation

Discussion:

Analyzes only the time periods for w hich the condition is true and provides a data value relative to a time series mean and standard deviation over the last n of those time periods. A Z-score of one returns the mean plus one standard deviation, w hile a Z-score of tw o returns the mean plus tw o standard deviations. Likew ise, a Z-score of negative one returns the mean minus one standard deviation, w hile a Z-score of negative tw o returns the mean minus tw o standard deviations.

Optimal Change

Abbreviation: OptimalChange
Category: Neural Outputs

Input Parameters:

Name	Range	Default
Time Series		Close
Lookback Periods	Int >= 0	10

Calculation:

Computes the change from the value n bars ago to the next peak or valley following the point n bars ago. A peak is the highest value over the last n bars, while a valley is the lowest point over the last n bars.

Where
n = Lookback Periods

Discussion:

Since this indicator computes the change from a past value to a past peak or valley, it is best used as an output for a prediction.

Optimal Percent Change

Abbreviation: Optimal%Change
Category: Neural Outputs

Input Parameters:

Name	Range	Default
Time Series		Close
Lookback Periods	Int >= 0	10

Calculation:

Computes the percent change from the value n bars ago to the next peak or valley following the point n bars ago. A peak is the highest value over the last n bars, while a valley is the lowest point over the last n bars.

Where
n = Lookback Periods

Discussion:

Since this indicator computes the percent change from a past value to a past peak or valley, it is best used as an output for a prediction.

Optimal Buy/Sell/Hold

Abbreviation: OptimalBuySellHold
Category: Neural Outputs

Input Parameters:

Name	Range	Default
Time Series		Close
Lookback Periods	Int >= 0	10

Calculation:

Computes a buy (1), sell(-1) or hold (0) signal for n bars ago. A buy signal is generated if the value n bars ago is approaching a peak and a sell signal is generated if the value n bars ago is approaching a valley. A hold is generated on bars prior to a peak when the change to the peak is less than the change to the next valley. Likewise a hold is generated on bars prior to a valley when the change to the valley is less than the change to the next peak. A peak is the highest value over the last n bars, while a valley is the lowest point over the last n bars.

Where
n = Lookback Periods

Discussion:

Since this indicator computes a buy/sell/hold signal from a past value to a past peak or valley, it is best used as an output for a prediction.

Optimal Buy/Sell

Abbreviation: OptimalBuySell
Category: Neural Outputs

Input Parameters:

Name	Range	Default
Time Series		Close
Lookback Periods	Int >= 0	10

Calculation:

Computes a buy (1) or sell(-1) signal for n bars ago. A buy signal is generated if the value n bars ago is approaching a peak and a sell signal is generated if the value n bars ago is approaching a valley. A peak is the highest value over the last n bars, while a valley is the lowest point over the last n bars.

Where
n = Lookback Periods

Discussion:

Since this indicator computes a buy/sell signal from a past value to a past peak or valley, it is best used as an output for a prediction.

External DLL Call by Array (Professional Only)

Abbreviation: DLLArray

Category: External Program & Library Calls

Problem Definition:

You w ill need to define the interface that NeuroShell Trader should use to call the DLL. For more detailed information on this please refer to the NeuroShell Trader Help (select the Help button on the bottom left of the Indicator Wizard - "Indicator Wizard - External DLL" is the help topic).

Input Parameters: (The number of inputs depends on the DLL Call that you defined).

Name	Range	Default
Param #1		
…		
Param #n		

(The "Param #x" may have different names depending on how you defined your problem)

Calculation:

The results are determined by the DLL Call that you are making. If you are making a call to a DLL that has been provided to you by a third party please refer to their documentation.

Discussion:

This indicator gives you the ability to call external DLL Calls once w ith all of the values needed. This means that NeuroShell Trader w ill call the DLL that you specified once w ith all of the data points. It w ill pass all of the values for each parameter that you have specified and w ill use the output returned from the DLL. To call a DLL one data point at a time refer toExternal DLL Call by Value (Professional Only).

For more information on building an interface to a DLL please dow nload the Softw are Development Kit from http://w w w .w ard.net.

External DLL Call by Value (Professional Only)

Abbreviation: DLLValue

Category: External Program & Library Calls

Problem Definition:

You will need to define the interface that NeuroShell Trader should use to call the DLL. For more detailed information on this please refer to the NeuroShell Trader Help (select the Help button on the bottom left of the Indicator Wizard - "Indicator Wizard - External DLL" is the help topic).

Input Parameters: (The number of inputs depends on the DLL Call that you defined).

Name	Range	Default
Param #1		
…		
Param #n		

(The "Param #x" may have different names depending on how you defined your problem)

Calculation:

The results are determined by the DLL Call that you are making. If you are making a call to a DLL that has been provided to you by a third party please refer to their documentation.

Discussion:

This indicator gives you the ability to call external DLL Calls one value at a time. This means that NeuroShell Trader will call the DLL that you specified once for each data point. It will pass one value for each parameter that you have specified and will use one output for each time that the DLL is called. To call a DLL once for all data points refer to External DLL Call by Array (Professional Only)

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For more information on building an interface to a DLL please download the Software Development Kit from http://www.ward.net

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NeuroShell 2 Neural Network (Professional Only)

Abbreviation: NShell2

Category: External Program & Library Calls

Problem Definition:

You will need to define which NeuroShell 2 network you want to use. The network that you select will be represented by a <Neural Network>.DEF file. This file is created by NeuroShell 2 by using the **Runtime Facilites** and selecting **Make DEF file**.

Additionally, you will need to select which output you want to use from your NeuroShell 2 Neural Network (this will default to the first output).

Input Parameters: (The number of inputs depends on the Neural Network you selected).

Name	Range	Default
Input #1		
…		
Input #n		

Calculation:

The results are the same as calculated by NeuroShell 2. Please refer to the NeuroShell 2 help file for more information.

Discussion:

While the Neural Network that is provided in NeuroShell Trader is very robust and accurate, there are people who want to have more control over their Neural Networks or a wider variety of Neural Network types (NeuroShell 2 provides this ability). This indicator gives you the ability to call NeuroShell 2 Neural Networks from within NeuroShell Trader. After exporting data from the NeuroShell Trader and training a neural network with NeuroShell 2 (don’t forget to build a DEF file), this indicator enables you to use that Neural Network inside of NeuroShell Trader without having to build a new data file every time that you get new data. Once you feel that the Neural Network has stoped performing as well as you desire, you will need to re-export data and retrain your Neural Network from within NeuroShell 2 (don’t forget to rebuild your DEF file).

NeuroShell Predictor/Classifier (Professional Only)

Abbreviation: NShell Pred/Class
Category: External Program & Library Calls

Problem Definition:

You will need to define which NeuroShell Predictor/Classifier network you want to use. The network that you select will be represented by a <Neural Network>.NET file. This file is created by NeuroShell Predictor/Classifier when you train a Neural Network.

Additionally, you will need to select which output you want to use from your NeuroShell Predictor/Classifier Neural Network (this will default to the first output).

Input Parameters: (The number of inputs depends on the Neural Network you selected).

Name	Range	Default
Input #1		
…		
Input #n		
Enhanced Generalization	0 <= Real <= 100	50

(The "Input #x" will have the actual names of your inputs, but they will not be defaulted to anything)

Calculation:

The results are the same as calculated by NeuroShell Predictor/Classifier. Please refer to the NeuroShell Predictor/Classifier help file for more information.

Discussion:

While the Neural Network that is provided in NeuroShell Trader is very robust and accurate, there are people who want to have more control over their Neural Networks or a wider variety of Neural Network types (NeuroShell Predictor/Classifier provides this ability). This indicator gives you the ability to call NeuroShell Predictor/Classifier Neural Networks from within NeuroShell Trader. After exporting data from the NeuroShell Trader and training a neural networks with NeuroShell Predictor/Classifier, this indicator enables you to use that Neural Network inside of NeuroShell Trader without having to build a new data file every time that you get new data. Once you feel that the Neural Network has stoped performing as well as you desire, you will need to re-export data and retrain your Neural Network from within NeuroShell Predictor/Classifier.

Note:

In order to use this indicator you will need to own the NeuroShell Runtime Software. Please contact Ward Systems Group, Inc. for more information on this product.

Spread

Abbreviation: Spread
Category: Time Series

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close

Calculation:

Time Series #1 - Time Series #2

Discussion:

Provides a quantitative comparison between the two time series by computing the difference between the two time series. Since a difference is used, the time series should have roughly the same range and magnitude of values.

Principal Components Analysis (PCA) Discussion (Professional Only)

PCA is a multivariate data analysis technique used to take a large number of data streams and express the patterns and correlations found in the data space in a smaller number of data streams called principal components. Each principal component data stream is a linear combination of the original data streams and each extracts the maximum possible variance from the original data set that has not already been expressed in a prior principal component. The principal components are created such that the 1st principal component will account for the most variance in the original data streams, the 2nd principal component will account for less variance and so forth. The PCA technique actually produces as many principal components as there are data streams, however the first few components are the most important as they express the most variance found in the original data stream.

3-Dimensional PCA Variation in % (Professional Only)

Abbreviation: PCA3%Var

Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close
Time Series #3		Close
Window Size	Int >= 3	50
Vector Number	1 <= Int <= 3	1

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X1...X3, calculates the mth eigenvector and its eigenvalue expressed in % of total sum of all eigenvalues.

where

X1 = Time Series 1

X2 = Time Series 2

X3 = Time Series 3

n = Window Size

m = Vector Number

Discussion:

Calculates the percent of total variation along the mth significant direction in the data. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

4-Dimensional PCA Variation in % (Professional Only)

Abbreviation: PCA4%Var
Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close
Time Series #3		Close
Time Series #4		Close
Window Size	Int >= 4	50
Vector Number	1 <= Int <= 4	1

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X1...X4, calculates the mth eigenvector and its eigenvalue expressed in % of total sum of all eigenvalues,

where

X1 = Time Series 1
X2 = Time Series 2
X3 = Time Series 3
X4 = Time Series 4
n = Window Size
m = Vector Number

Discussion:

Calculates the percent of total variation along the mth significant direction in the data. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

5-Dimensional PCA Variation in % (Professional Only)

Abbreviation: PCA5%Var

Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close
Time Series #3		Close
Time Series #4		Close
Time Series #5		Close
Window Size	Int >= 5	50
Vector Number	1 <= Int <= 5	1

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X1...X5, calculates the mth eigenvector and its eigenvalue expressed in % of total sum of all eigenvalues,

where

X1 = Time Series 1

X2 = Time Series 2

X3 = Time Series 3

X4 = Time Series 4

X5 = Time Series 5

n = Window Size

m = Vector Number

Discussion:

Calculates the percent of total variation along the mth significant direction in the data. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

6-Dimensional PCA Variation in % (Professional Only)

Abbreviation: PCA6%Var

Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close
Time Series #3		Close
Time Series #4		Close
Time Series #5		Close
Time Series #6		Close
Window Size	Int >= 6	50
Vector Number	1 <= Int <= 6	1

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X1...X6, calculates the mth eigenvector and its eigenvalue expressed in % of total sum of all eigenvalues,

where

X1 = Time Series 1

X2 = Time Series 2

X3 = Time Series 3

X4 = Time Series 4

X5 = Time Series 5

X6 = Time Series 6

n = Window Size

m = Vector Number

Discussion:

Calculates the percent of total variation along the mth significant direction in the data. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

8-Dimensional PCA Variation in % (Professional Only)

Abbreviation: PCA8%Var

Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close
Time Series #3		Close
Time Series #4		Close
Time Series #5		Close
Time Series #6		Close
Time Series #7		Close
Time Series #8		Close
Window Size	Int >= 8	50
Vector Number	1 <= Int <= 8	1

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X1...X8, calculates the mth eigenvector and its eigenvalue expressed in % of total sum of all eigenvalues,

w here

X1 = Time Series 1

X2 = Time Series 2

X3 = Time Series 3

X4 = Time Series 4

X5 = Time Series 5

X6 = Time Series 6

X7 = Time Series 7

X8 = Time Series 8

n = Window Size

m = Vector Number

Discussion:

Calculates the percent of total variation along the mth significant direction in the data. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

10-Dimensional PCA Variation in % (Professional Only)

Abbreviation: PCA10%Var

Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close
Time Series #3		Close
Time Series #4		Close
Time Series #5		Close
Time Series #6		Close
Time Series #7		Close
Time Series #8		Close
Time Series #9		Close
Time Series #10		Close
Window Size	Int >= 10	50
Vector Number	1 <= Int <= 10	1

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X1...X10, calculates the mth eigenvector and its eigenvalue expressed in % of total sum of all eigenvalues,

where

X1 = Time Series 1
X2 = Time Series 2
X3 = Time Series 3
X4 = Time Series 4
X5 = Time Series 5
X6 = Time Series 6
X7 = Time Series 7
X8 = Time Series 8
X9 = Time Series 9
X10 = Time Series 10
n = Window Size
m = Vector Number

Discussion:

Calculates the percent of total variation along the mth significant direction in the data. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

Lagged PCA Variation in % (Professional Only)

Abbreviation: PCALag%Var
Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series		Close
Window Size	Int >= Max Lag + 1	50
Vector Number	1 <= Int <= Max Lag + 1	1
Max Lag	Int >= 0	25

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X, Lag(X,1), Lag (X,2), ..., Lag(X,MaxLag), calculates the mth eigenvector and its eigenvalue expressed in % of total sum of all eigenvalues,

w here

X = Time Series
n = Window Size
m = Vector Number

Discussion:

Calculates the percent of total variation along the mth significant direction in the data. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

3-Dimensional PCA Transformation (Professional Only)

Abbreviation: PCA3

Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close
Time Series #3		Close
Window Size	Int >= 3	50
Vector Number	1 <= Int <= 3	1

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X1...X3, calculates the mth eigenvector and projects the latest time point onto the direction of this eigenvector,

where

X1 = Time Series 1

X2 = Time Series 2

X3 = Time Series 3

n = Window Size

m = Vector Number

Discussion:

Extracts the mth principal component from the data. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

Note that the direction of the vector represents the direction that causes the mth most variation, and thus may point in one of two directions. NeuroShell Trader performs this analysis so that the vector choosen is closest to the previous vector selected. Because of the way this is calculated, if the first data point is shifted (forward or backward in time), the sign of the entire series may be alternated. This may require your neural networks to be retrained or your Trading Strategies to be rebacktested.

4-Dimensional PCA Transformation (Professional Only)

Abbreviation: PCA4

Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close
Time Series #3		Close
Time Series #4		Close
Window Size	Int >= 4	50
Vector Number	1 <= Int <= 4	1

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X1...X4, calculates the mth eigenvector and projects the latest time point onto the direction of this eigenvector.

where

X1 = Time Series 1
X2 = Time Series 2
X3 = Time Series 3
X4 = Time Series 4
n = Window Size
m = Vector Number

Discussion:

Extracts the mth principal component from the data. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

Note that the direction of the vector represents the direction that causes the mth most variation, and thus may point in one of two directions. NeuroShell Trader performs this analysis so that the vector choosen is closest to the previous vector selected. Because of the way this is calculated, if the first data point is shifted (forward or backward in time), the sign of the entire series may be alternated. This may require your neural networks to be retrained or your Trading Strategies to be rebacktested.

5-Dimensional PCA Transformation (Professional Only)

Abbreviation: PCA5

Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close
Time Series #3		Close
Time Series #4		Close
Time Series #5		Close
Window Size	Int >= 5	50
Vector Number	1 <= Int <= 5	1

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X1...X5, calculates the mth eigenvector and projects the latest time point onto the direction of this eigenvector,

where

X1 = Time Series 1

X2 = Time Series 2

X3 = Time Series 3

X4 = Time Series 4

X5 = Time Series 5

n = Window Size

m = Vector Number

Discussion:

Extracts the mth principal component from the data. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

Note that the direction of the vector represents the direction that causes the mth most variation, and thus may point in one of two directions. NeuroShell Trader performs this analysis so that the vector choosen is closest to the previous vector selected. Because of the way this is calculated, if the first data point is shifted (forward or backward in time), the sign of the entire series may be alternated. This may require your neural networks to be retrained or your Trading Strategies to be rebacktested.

6-Dimensional PCA Transformation (Professional Only)

Abbreviation: PCA6

Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close
Time Series #3		Close
Time Series #4		Close
Time Series #5		Close
Time Series #6		Close
Window Size	Int >= 6	50
Vector Number	1 <= Int <= 6	1

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X1...X6, calculates the mth eigenvector and projects the latest time point onto the direction of this eigenvector,

where

X1 = Time Series 1

X2 = Time Series 2

X3 = Time Series 3

X4 = Time Series 4

X5 = Time Series 5

X6 = Time Series 6

n = Window Size

m = Vector Number

Discussion:

Extracts the mth principal component from the data. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

Note that the direction of the vector represents the direction that causes the mth most variation, and thus may point in one of two directions. NeuroShell Trader performs this analysis so that the vector choosen is closest to the previous vector selected. Because of the way this is calculated, if the first data point is shifted (forward or backward in time), the sign of the entire series may be alternated. This may require your neural networks to be retrained or your Trading Strategies to be rebacktested.

8-Dimensional PCA Transformation (Professional Only)

Abbreviation: PCA8

Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close
Time Series #3		Close
Time Series #4		Close
Time Series #5		Close
Time Series #6		Close
Time Series #7		Close
Time Series #8		Close
Window Size	Int >= 8	50
Vector Number	1 <= Int <= 8	1

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X1...X8, calculates the mth eigenvector and projects the latest time point onto the direction of this eigenvector,

w here

X1 = Time Series 1

X2 = Time Series 2

X3 = Time Series 3

X4 = Time Series 4

X5 = Time Series 5

X6 = Time Series 6

X7 = Time Series 7

X8 = Time Series 8

n = Window Size

m = Vector Number

Discussion:

Extracts the mth principal component from the data. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

Note that the direction of the vector represents the direction that causes the mth most variation, and thus may point in one of tw o directions. NeuroShell Trader performs this analysis so that the vector choosen is closest to the previous vector selected. Because of the w ay this is calculated, if the first data point is shifted (forw ard or backw ard in time), the sign of the entire series may be alternated. This may require your neural netw orks to be retrained or your Trading Strategies to be rebacktested.

10-Dimensional PCA Transformation (Professional Only)

Abbreviation: PCA10

Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close
Time Series #3		Close
Time Series #4		Close
Time Series #5		Close
Time Series #6		Close
Time Series #7		Close
Time Series #8		Close
Time Series #9		Close
Time Series #10		Close
Window Size	Int >= 10	50
Vector Number	1 <= Int <= 10	1

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X1...X10, calculates the mth eigenvector and projects the latest time point onto the direction of this eigenvector,

w here

X1 = Time Series 1

X2 = Time Series 2

X3 = Time Series 3

X4 = Time Series 4

X5 = Time Series 5

X6 = Time Series 6

X7 = Time Series 7

X8 = Time Series 8

X9 = Time Series 9

X10 = Time Series 10

n = Window Size

m = Vector Number

Discussion:

Extracts the mth principal component from the data. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

Note that the direction of the vector represents the direction that causes the mth most variation, and thus may point in one of tw o directions. NeuroShell Trader performs this analysis so that the vector choosen is closest to the previous vector selected. Because of the w ay this is calculated, if the first data point is shifted (forw ard or backw ard in time), the sign of the entire series may be alternated. This may require your neural netw orks to be retrained or your Trading Strategies to be rebacktested.

Lagged PCA Transformation (Professional Only)

Abbreviation: PCALag
Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series		Close
Window Size	Int >= Max Lag + 1	50
Vector Number	1 <= Int <= Max Lag + 1	1
Max Lag	Int >= 0	25

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X, Lag(X,1), Lag(X,2), ..., Lag(X,MaxLag), calculates the mth eigenvector and projects the latest time point onto the direction of this eigenvector,

where

X = Time Series
n = Window Size
m = Vector Number

Discussion:

Extracts the mth principal component from the data. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

Note that the direction of the vector represents the direction that causes the mth most variation, and thus may point in one of two directions. NeuroShell Trader performs this analysis so that the vector choosen is closest to the previous vector selected. Because of the way this is calculated, if the first data point is shifted (forward or backward in time), the sign of the entire series may be alternated. This may require your neural networks to be retrained or your Trading Strategies to be rebacktested.

3-Dimensional PCA Filtering (Professional Only)

Abbreviation: PCA3Filter
Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close
Time Series #3		Close
Window Size	Int >= 3	50
Threshold	Real >= 0.0	30
Input Number	1 <= Int <= 3	1

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X1...X3, calculates all eigenvectors and eigenvalues. Calculates the projection of the latest time point to the direction determined by several first eigenvectors, and returns its mth component (filtered value of Xm). The number of eigenvectors taken into account is determined by the demand that the sum of eigenvalues of these eigenvectors is as small as possible provided that it is not less that p% of the sum of all eigenvalues. (Each eigenvalue is less than or equal to the preceding eigenvalue.)

where

X1 = Time Series 1
X2 = Time Series 2
X3 = Time Series 3
n = Periods
p = Threshold
m = Input Number

Discussion:

Sums up several first principal components that provide together not less than p % of the total variance. Returns the value of Xm filtered by removing all the other components. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

4-Dimensional PCA Filtering (Professional Only)

Abbreviation: PCA4Filter

Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close
Time Series #3		Close
Time Series #4		Close
Window Size	Int >= 4	50
Threshold	Real >= 0.0	30
Input Number	1 <= Int <= 4	1

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X1...X4, calculates all eigenvectors and eigenvalues. Calculates the projection of the latest time point to the direction determined by several first eigenvectors, and returns its mth component (filtered value of Xm). The number of eigenvectors taken into account is determined by the demand that the sum of eigenvalues of these eigenvectors is as small as possible provided that it is not less that p% of the sum of all eigenvalues. (Each eigenvalue is less than or equal to the preceding eigenvalue.)

where

X1 = Time Series 1

X2 = Time Series 2

X3 = Time Series 3

X4 = Time Series 4

n = Window Size

p = Threshold

m = Input Number

Discussion:

Sums up several first principal components that provide together not less than p % of the total variance. Returns the value of Xm filtered by removing all the other components. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

5-Dimensional PCA Filtering (Professional Only)

Abbreviation: PCA5Filter

Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close
Time Series #3		Close
Time Series #4		Close
Time Series #5		Close
Window Size	Int >= 5	50
Threshold	Real >= 0.0	30
Input Number	1 <= Int <= 5	1

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X1...X5, calculates all eigenvectors and eigenvalues. Calculates the projection of the latest time point to the direction determined by several first eigenvectors, and returns its mth component (filtered value of Xm). The number of eigenvectors taken into account is determined by the demand that the sum of eigenvalues of these eigenvectors is as small as possible provided that it is not less that p% of the sum of all eigenvalues. (Each eigenvalue is less than or equal to the preceding eigenvalue.)

where

X1 = Time Series 1

X2 = Time Series 2

X3 = Time Series 3

X4 = Time Series 4

X5 = Time Series 5

n = Window Size

p = Threshold

m = Input Number

Discussion:

Sums up several first principal components that provide together not less than p % of the total variance. Returns the value of Xm filtered by removing all the other components. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

6-Dimensional PCA Filtering (Professional Only)

Abbreviation: PCA6Filter

Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close
Time Series #3		Close
Time Series #4		Close
Time Series #5		Close
Time Series #6		Close
Window Size	Int >= 6	50
Threshold	Real >= 0.0	30
Input Number	1 <= Int <= 6	1

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X1...X6, calculates all eigenvectors and eigenvalues. Calculates the projection of the latest time point to the direction determined by several first eigenvectors, and returns its mth component (filtered value of Xm). The number of eigenvectors taken into account is determined by the demand that the sum of eigenvalues of these eigenvectors is as small as possible provided that it is not less that p% of the sum of all eigenvalues. (Each eigenvalue is less than or equal to the preceding eigenvalue.)

where

X1 = Time Series 1

X2 = Time Series 2

X3 = Time Series 3

X4 = Time Series 4

X5 = Time Series 5

X6 = Time Series 6

n = Window Size

p = Threshold

m = Input Number

Discussion:

Sums up several first principal components that provide together not less than p % of the total variance. Returns the value of Xm filtered by removing all the other components. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

8-Dimensional PCA Filtering (Professional Only)

Abbreviation: PCA8Filter
Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close
Time Series #3		Close
Time Series #4		Close
Time Series #5		Close
Time Series #6		Close
Time Series #7		Close
Time Series #8		Close
Window Size	Int >= 8	50
Threshold	Real >= 0.0	30
Input Number	1 <= Int <= 8	1

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X1...X8, calculates all eigenvectors and eigenvalues. Calculates the projection of the latest time point to the direction determined by several first eigenvectors, and returns its mth component (filtered value of Xm). The number of eigenvectors taken into account is determined by the demand that the sum of eigenvalues of these eigenvectors is as small as possible provided that it is not less that p% of the sum of all eigenvalues. (Each eigenvalue is less than or equal to the preceding eigenvalue.)

w here

X1 = Time Series 1
X2 = Time Series 2
X3 = Time Series 3
X4 = Time Series 4
X5 = Time Series 5
X6 = Time Series 6
X7 = Time Series 7
X8 = Time Series 8
n = Window Size
p = Threshold
m = Input Number

Discussion:

Sums up several first principal components that provide together not less than p % of the total variance. Returns the value of Xm filtered by removing all the other components. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

10-Dimensional PCA Filtering (Professional Only)

Abbreviation: PCA10Filter

Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series #1		Close
Time Series #2		Close
Time Series #3		Close
Time Series #4		Close
Time Series #5		Close
Time Series #6		Close
Time Series #7		Close
Time Series #8		Close
Time Series #9		Close
Time Series #10		Close
Window Size	Int >= 10	50
Threshold	Real >= 0.0	30
Input Number	1 <= Int <= 10	1

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X1...X10, calculates all eigenvectors and eigenvalues. Calculates the projection of the latest time point to the direction determined by several first eigenvectors, and returns its mth component (filtered value of Xm). The number of eigenvectors taken into account is determined by the demand that the sum of eigenvalues of these eigenvectors is as small as possible provided that it is not less that p% of the sum of all eigenvalues. (Each eigenvalue is less than or equal to the preceding eigenvalue.)

w here

X1 = Time Series 1

X2 = Time Series 2

X3 = Time Series 3

X4 = Time Series 4

X5 = Time Series 5

X6 = Time Series 6

X7 = Time Series 7

X8 = Time Series 8

X9 = Time Series 9

X10 = Time Series 10

n = Window Size

p = Threshold

m = Input Number

Discussion:

Sums up several first principal components that provide together not less than p % of the total variance. Returns the value of Xm filtered by removing all the other components. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

Lagged PCA Filtering (Professional Only)

Abbreviation: PCALagFilter
Category: Principal Components Analysis (PCA)

Input Parameters:

Name	Range	Default
Time Series		Close
Window Size	Int >= Max Lag + 1	50
Threshold	Real >= 0.0	30
Input Number	1 <= Int <= Max Lag + 1	1
Max Lag	Int >= 0	25

Calculation:

Performs the Principal Component Analysis of the last n points in the space of X, Lag(X,1), Lag (X,2), ..., Lag(X,MaxLag), calculates all eigenvectors and eigenvalues. Calculates the projection of the latest time point to the direction determined by several first eigenvectors, and returns its mth component (filtered value of Lag(X,m-1). The number of eigenvectors taken into account is determined by the demand that the sum of eigenvalues of these eigenvectors is as small as possible provided that it is not less that p% of the sum of all eigenvalues. (Each eigenvalue is less than or equal to the preceding eigenvalue.)

where

X = Time Series
n = Window Size
p = Threshold
m = Input Number

Discussion:

Sums up several first principal components that provide together not less than p % of the total variance. Returns the value of Lag(X,m-1) filtered by removing all the other components. For more information on Principal Component Analysis refer to Principal Components Analysis (PCA) Discussion.

Fast Fourier Transform (FFT) Discussion (Professional Only)

Fourier analysis is a method of characterizing the cyclical behavior of a time series. The Fast Fourier Transform (FFT) is a simplified Fourier calculation that allow s for fast analysis on a computer. The FFT expresses a time series as the sum of sine w aves across a range of frequencies (1 / cycle length). Using the amplitude and phase of the sine w aves, calculations of a data streams pow er and amplitude can be made across a frequency range and calculation of a data streams angle, real part, and imaginary part can be made for a discreet frequency.

FFT Power (Professional Only)

Abbreviation: FFTPower
Category: Fast Fourier Transform (FFT)

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Min Cycle Len (periods)	Real > 2.0	3
Max Cycle Len (periods)	Real > 2.0 >= Min Cycle Len	5

Calculation:

Sum((Re(FFT(X,n)(F)))^2 + (Im(FFT(X,n)(F)))^2) over interval [Fmin,Fmax]

Calculates integral power of Fast Fourier Transform of X over the last n points in the frequency range Fmin...Fmax,

where

X = Time Series
n = 2 ^ Window Exponent
Fmin = n/Max Cycle Length = lower frequency boundary of the range
Fmax = n/Min Cycle Length = upper frequency boundary of the range

Discussion:
Min Cycle Length and Max Cycle Length correspond to minimal period and maximal period of the harmonics included in the calculation, measured in number of periods (points). The sense of this indicator is total energy in the specified frequency (cycle length) range. For more information on Fast Fourier Tranforms refer to Fast Fourier Transform (FFT) Discussion.

FFT Amplitude (Professional Only)

Abbreviation: FFTAmplitude
Category: Fast Fourier Transform (FFT)

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Min Cycle Len (periods)	Real > 2.0	3
Max Cycle Len (periods)	Real > 2.0 >= Min Cycle Len	5

Calculation:

Sum(sqrt(Re(FFT(X,n)(F)))^2 + (Im(FFT(X,n)(F)))^2) over interval [Fmin,Fmax]

Calculates sum of amplitudes of Fast Fourier Transform of X over the last n points in the frequency range Fmin...Fmax,

where

X = Time Series
n = 2 ^ Window Exponent
Fmin = n/Max Cycle Length = lower frequency boundary of the range
Fmax = n/Min Cycle Length = upper frequency boundary of the range

Discussion:
Min Cycle Length and Max Cycle Length correspond to minimal period and maximal period of the harmonics included in the calculation, measured in number of periods (points). The sense of this indicator is total FFT amplitude in the specified frequency (cycle length) range. For more information on Fast Fourier Tranforms refer to Fast Fourier Transform (FFT) Discussion.

FFT Real Part (Professional Only)

Abbreviation: FFTReal
Category: Fast Fourier Transform (FFT)

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Cycle Length (periods)	Real > 2.0	3

Calculation:

Re(FFT(X,n)(F))

Calculates real part of Fast Fourier Transform of X over the last n points at frequency F,

where

X = Time Series
n = 2 ^ Window Exponent
F = n/Cycle Length = frequency

Discussion:
Cycle Length corresponds to the period of the harmonic for which the calculation is performed, measured in number of periods (points). The sense of this indicator is FFT real part at the specified frequency (cycle length). For more information on Fast Fourier Tranforms refer to Fast Fourier Transform (FFT) Discussion.

FFT Imaginary Part (Professional Only)

Abbreviation: FFTImaginary
Category: Fast Fourier Transform (FFT)

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Cycle Length (periods)	Real > 2.0	3

Calculation:

Im(FFT(X,n)(F))

Calculates imaginary part of Fast Fourier Transform of X over the last n points at frequency F,

where

X = Time Series
n = 2 ^ Window Exponent
F = n/Cycle Length = frequency

Discussion:
Cycle Length corresponds to the period of the harmonic for which the calculation is performed, measured in number of periods (points). The sense of this indicator is FFT imaginary part at the specified frequency (cycle length). For more information on Fast Fourier Tranforms refer to Fast Fourier Transform (FFT) Discussion.

FFT Angle (Professional Only)

Abbreviation: FFTAngle
Category: Fast Fourier Transform (FFT)

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Cycle Length (periods)	Real > 2.0	3

Calculation:

arctg(Im(FFT(X,n)(F))/Re(FFT(X,n)(F)))

Calculates angle of Fast Fourier Transform of X over the last n points at frequency F,

where

X = Time Series
n = 2 ^ Window Exponent
F = n/Cycle Length = frequency

Discussion:
Cycle Length corresponds to the period of the harmonic for which the calculation is performed, measured in number of periods (points). The sense of this indicator is FFT angle at the specified frequency (cycle length). If both real and imaginary parts of the transform are equal to zero, the output of the indicator is set to *. For more information on Fast Fourier Tranforms refer to Fast Fourier Transform (FFT) Discussion.

FFT Filtering with Rectangle Filter (Professional Only)

Abbreviation: FFTFilteringRectangle

Category: Fast Fourier Transform (FFT)

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Min Cycle Len (periods)	Real >= 0.0	1
Max Cycle Len (periods)	Real > 2.0 >= Min Cycle Len	5

Calculation:

InverseFFT(RectangleFilter(FFT(X,n)))(X(-n/2))

Calculates direct Fast Fourier Transform of X over the last n points, applies rectangle filter to the result, and calculates inverse Fast Fourier Transform of the result of filtering. Returns the result of the inverse transform corresponding to the point n/2 periods ago. The filter has unit transmittance for all frequencies from Fmin to Fmax, and zero transmittance for all other frequencies.

where

X = Time Series

n = 2 ^ Window Exponent

Fmin = n/Max Cycle Length = lower frequency boundary of the filter

Fmax = n/Min Cycle Length = upper frequency boundary of the filter

To implement a low-frequency rectangular filter:

Max Cycle Length >= 2n -> this sets a frequency range Fmax to zero frequency.

To implement a high-frequency rectangular filter:

Min Cycle Length = 0 -> this sets a frequency range from Fmin to n/2 frequency.

Discussion:

Min Cycle Length and Max Cycle Length correspond to minimal period and maximal period of the harmonics transmitted by the filter, measured in number of periods (points). The output of this indicator is the input time series, filtered with the rectangle frequency filter and delayed for n/2 periods. For more information on Fast Fourier Tranforms refer to Fast Fourier Transform (FFT) Discussion.

FFT Filtering with Triangle Filter (Professional Only)

Abbreviation: FFTFilteringTriangle

Category: Fast Fourier Transform (FFT)

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Min Cycle Len (periods)	Real >= 0.0	1
Max Cycle Len (periods)	Real > 2.0 >= Min Cycle Len	5

Calculation:

InverseFFT(TriangleFilter(FFT(X,n)))(X(-n/2))

Calculates direct Fast Fourier Transform of X over the last n points, applies triangle filter to the result, and calculates inverse Fast Fourier Transform of the result of filtering. Returns the result of the inverse transform corresponding to the point n/2 periods ago. The filter has transmittance 0.5 at Fmin and at Fmax, and unit transmittance at (Fmin+Fmax)/2.

where

X = Time Series

n = 2 ^ Window Exponent

Fmin = n/Max Cycle Length = lower frequency boundary of the filter

Fmax = n/Min Cycle Length = upper frequency boundary of the filter

To implement a low-frequency triangular filter:

Max Cycle Length >= 2n -> this sets a frequency range from Fmax to zero frequency.

To implement a high-frequency triangular filter:

Min Cycle Length = 0 -> this sets a frequency range from Fmin to n/2 frequency.

Discussion:

Min Cycle Length and Max Cycle Length correspond to minimal period and maximal period of the harmonics transmitted by the filter, measured in number of periods (points). The output of this indicator is the input time series, filtered with the triangle frequency filter and delayed for n/2 periods. For more information on Fast Fourier Tranforms refer to Fast Fourier Transform (FFT) Discussion.

FFT Filtering with Trapezoid Filter (Professional Only)

Abbreviation: FFTFilteringTrapezoid

Category: Fast Fourier Transform (FFT)

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Min Cycle Len (periods)	Real >= 0.0	1
Max Cycle Len (periods)	Real > 2.0 >= Min Cycle Len	5

Calculation:

InverseFFT(TrapezoidFilter(FFT(X,n)))(X(-n/2))

Calculates direct Fast Fourier Transform of X over the last n points, applies trapezoid filter to the result, and calculates inverse Fast Fourier Transform of the result of filtering. Returns the result of the inverse transform corresponding to the point n/2 periods ago. The filter has transmittance 0.5 at Fmin and at Fmax, and unit transmittance for all frequencies from (3*Fmin+Fmax)/4 to (Fmin+3*Fmax)/4, i.e. the trapezoid plateau and each of its wings have equal width.

where

X = Time Series

n = 2 ^ Window Exponent

Fmin = n/Max Cycle Length = lower frequency boundary of the filter

Fmax = n/Min Cycle Length = upper frequency boundary of the filter

To implement a low-frequency trapezoid filter:

Max Cycle Length >= 2n -> this sets a frequency range from Fmax to zero frequency.

To implement a high-frequency trapezoid filter:

Min Cycle Length = 0 -> this sets a frequency range from Fmin to n/2 frequency.

Discussion:

Min Cycle Length and Max Cycle Length correspond to minimal period and maximal period of the harmonics transmitted by the filter, measured in number of periods (points). The output of this indicator is the input time series, filtered with the trapezoid frequency filter and delayed for n/2 periods. For more information on Fast Fourier Tranforms refer to Fast Fourier Transform (FFT) Discussion.

FFT Filtering with Gaussian Filter (Professional Only)

Abbreviation: FFTFilteringGauss
Category: Fast Fourier Transform (FFT)

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Min Cycle Len (periods)	Real >= 0.0	1
Max Cycle Len (periods)	Real > 2.0 >= Min Cycle Len	5

Calculation:

InverseFFT(GaussianFilter(FFT(X,n)))(X(-n/2))

Calculates direct Fast Fourier Transform of X over the last n points, applies Gaussian filter to the result, and calculates inverse Fast Fourier Transform of the result of filtering. Returns the result of the inverse transform corresponding to the point n/2 periods ago. The filter has transmittance 0.5 at Fmin and at Fmax, and unit transmittance at (Fmin+Fmax)/2.

where

X = Time Series
n = 2 ^ Window Exponent
Fmin = n/Max Cycle Length = lower frequency boundary of the filter
Fmax = n/Min Cycle Length = upper frequency boundary of the filter

To implement a low-frequency Gaussian filter:
  Max Cycle Length >= 2n -> this sets a frequency range from Fmax to zero frequency.

To implement a high-frequency Gaussian filter:
  Min Cycle Length = 0 -> this sets a frequency range from Fmin to n/2 frequency.

Discussion:
Min Cycle Length and Max Cycle Length correspond to minimal period and maximal period of the harmonics transmitted by the filter, measured in number of periods (points). The output of this indicator is the input time series, filtered with the Gaussian frequency filter and delayed for n/2 periods. For more information on Fast Fourier Tranforms refer to Fast Fourier Transform (FFT) Discussion.

FFT Filtering with Parabolic Filter (Professional Only)

Abbreviation: FFTFilteringParabola

Category: Fast Fourier Transform (FFT)

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Min Cycle Len (periods)	Real >= 0.0	1
Max Cycle Len (periods)	Real > 2.0 >= Min Cycle Len	5

Calculation:

InverseFFT(ParabolicFilter(FFT(X,n)))(X(-n/2))

Calculates direct Fast Fourier Transform of X over the last n points, applies parabolic filter to the result, and calculates inverse Fast Fourier Transform of the result of filtering. Returns the result of the inverse transform corresponding to the point n/2 periods ago. The filter has transmittance 0.5 at Fmin and at Fmax, and unit transmittance at (Fmin+Fmax)/2.

where

X = Time Series

n = 2 ^ Window Exponent

Fmin = n/Max Cycle Length = lower frequency boundary of the filter

Fmax = n/Min Cycle Length = upper frequency boundary of the filter

To implement a low-frequency parabolic filter:

Max Cycle Length >= 2n -> this sets a frequency range from Fmax to zero frequency.

To implement a high-frequency parabolic filter:

Min Cycle Length = 0 -> this sets a frequency range from Fmin to n/2 frequency.

Discussion:

Min Cycle Length and Max Cycle Length correspond to minimal period and maximal period of the harmonics transmitted by the filter, measured in number of periods (points). The output of this indicator is the input time series, filtered with the parabolic frequency filter and delayed for n/2 periods. For more information on Fast Fourier Tranforms refer to Fast Fourier Transform (FFT) Discussion.

Wavelet Discussion (Professional Only)

Wavelet analysis is similar to FFT analysis in that it expresses a time series as a sum of functions. Because the functions are not simple sine waves, wavelets are able to better handle time series that have many spikes and are discontinuous. Because wavelets are localized in both time and frequency, they are able to handle large and noisy data streams much better than FFT, which is localized in frequency only.

For more details, refer to *Wavelets and Filter Banks*, by Gilbert Strang and Truong Nguyen (Wellesley – Cambridge Press, 1996).

Haar Wavelet Coefficient Value Calculation (Professional Only)

Abbreviation: WaveletValHaar
Category: Wavelet

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Wavelet Number	1 <= Int <= 2^WinExponent	1

Calculation:

HaarWavelet(X,n)(W)

Calculates discrete Haar wavelet transform of X over the last n points. Returns value of Wth wavelet coefficient. W=1 returns the value of Smoothing (bias) coefficient,

where

X = Time Series
n = 2^Window Exponent
W = Wavelet Number

Discussion:
Wavelet transform performs decomposition of the time series into a row of wavelets, each with its own coefficient. Wavelets of different hierarchy levels (wavelets with numbers 1; 2; 3..4; 5..8; 9..16; ...; 2^(k-1)+1..2^k) describe different scale details in the decomposed time series, with level of detail increasing from level to level. For more information on Wavelets refer to Wavelet Discussion.

For more details, refer to *Wavelets and Filter Banks*, by Gilbert Strang and Truong Nguyen (Wellesley – Cambridge Press, 1996).

Daubechies-4 Wavelet Coefficient Value Calculation (Professional Only)

Abbreviation: WaveletValDaub4
Category: Wavelet

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Wavelet Number	1 <= Int <= 2^WinExponent	1

Calculation:

Daubechies4Wavelet(X,n)(W)

Calculates discrete Daubechies-4 wavelet transform of X over the last n points. Returns value of Wth wavelet coefficient. W=1 returns the value of Smoothing (bias) coefficient,

where

X = Time Series
n = 2^Window Exponent
W = Wavelet Number

Discussion:
Wavelet transform performs decomposition of the time series into a row of wavelets, each with its own coefficient. Wavelets of different hierarchy levels (wavelets with numbers 1; 2; 3..4; 5..8; 9..16; ...; 2^(k-1)+1..2^k) describe different scale details in the decomposed time series, with level of detail increasing from level to level. For more information on Wavelets refer to Wavelet Discussion.

For more details, refer to *Wavelets and Filter Banks*, by Gilbert Strang and Truong Nguyen (Wellesley – Cambridge Press, 1996).

Daubechies-12 Wavelet Coefficient Value Calculation (Professional Only)

Abbreviation: WaveletValDaub12
Category: Wavelet

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Wavelet Number	1 <= Int <= 2^WinExponent	1

Calculation:

Daubechies12Wavelet(X,n)(W)

Calculates discrete Daubechies-12 wavelet transform of X over the last n points. Returns value of Wth wavelet coefficient. W=1 returns the value of Smoothing (bias) coefficient,

where

X = Time Series
n = 2^Window Exponent
W = Wavelet Number

Discussion:
Wavelet transform performs decomposition of the time series into a row of wavelets, each with its own coefficient. Wavelets of different hierarchy levels (wavelets with numbers 1; 2; 3..4; 5..8; 9..16; ...; 2^(k-1)+1..2^k) describe different scale details in the decomposed time series, with level of detail increasing from level to level. For more information on Wavelets refer to Wavelet Discussion.

For more details, refer to *Wavelets and Filter Banks*, by Gilbert Strang and Truong Nguyen (Wellesley – Cambridge Press, 1996).

Daubechies-20 Wavelet Coefficient Value Calculation (Professional Only)

Abbreviation: WaveletValDaub20
Category: Wavelet

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Wavelet Number	1 <= Int <= 2^WinExponent	1

Calculation:

Daubechies20Wavelet(X,n)(W)

Calculates discrete Daubechies-20 wavelet transform of X over the last n points. Returns value of Wth wavelet coefficient. W=1 returns the value of Smoothing (bias) coefficient,

where

X = Time Series
n = 2^Window Exponent
W = Wavelet Number

Discussion:
Wavelet transform performs decomposition of the time series into a row of wavelets, each with its own coefficient. Wavelets of different hierarchy levels (wavelets with numbers 1; 2; 3..4; 5..8; 9..16; ...; 2^(k-1)+1..2^k) describe different scale details in the decomposed time series, with level of detail increasing from level to level. For more information on Wavelets refer to Wavelet Discussion.

For more details, refer to *Wavelets and Filter Banks*, by Gilbert Strang and Truong Nguyen (Wellesley – Cambridge Press, 1996).

Haar Wavelet Coefficient Value Calculation with Sorting (Professional Only)

Abbreviation: WaveletSortHaar
Category: Wavelet

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Sorted Wavelet Number	1 <= Int <= 2^WinExponent	1

Calculation:

SortDescending(HaarWavelet(X,n))(W)

Calculates discrete Haar wavelet transform of X over the last n points. Sorts the coefficients in descending order. Returns value of Wth largest wavelet coefficient. The value of Smoothing (bias) coefficient is not included in the sorting (as it has different nature) and it can be accessed through WaveletValueHaar (X,n,1).

where

X = Time Series
n = 2^Window Exponent
W = Sorted Wavelet Number

Discussion:
This indicator provides the possibility to estimate relative significance of several largest wavelets. For more information on Wavelets refer to Wavelet Discussion.

For more details, refer to *Wavelets and Filter Banks*, by Gilbert Strang and Truong Nguyen (Wellesley – Cambridge Press, 1996).

Daubechies-4 Wavelet Coefficient Value Calculation with Sorting (Professional Only)

Abbreviation: WaveletSortDaub4
Category: Wavelet

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Sorted Wavelet Number	1 <= Int <= 2^WinExponent	1

Calculation:

SortDescending(Daub4Wavelet(X,n))(W)

Calculates discrete Daubechies-4 wavelet transform of X over the last n points. Sorts the coefficients in descending order. Returns value of Wth largest wavelet coefficient. The value of Smoothing (bias) coefficient is not included in the sorting (as it has different nature) and it can be accessed through WaveletValueDaub4(X,n,1).

where

X = Time Series
n = 2^Window Exponent
W = Sorted Wavelet Number

Discussion:
This indicator provides the possibility to estimate relative significance of several largest wavelets. For more information on Wavelets refer to Wavelet Discussion.

For more details, refer to *Wavelets and Filter Banks*, by Gilbert Strang and Truong Nguyen (Wellesley – Cambridge Press, 1996).

Daubechies-12 Wavelet Coefficient Value Calculation with Sorting (Professional Only)

Abbreviation: WaveletSortDaub12
Category: Wavelet

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Sorted Wavelet Number	1 <= Int <= 2^WinExponent	1

Calculation:

SortDescending(Daub12Wavelet(X,n))(W)

Calculates discrete Daubechies-12 wavelet transform of X over the last n points. Sorts the coefficients in descending order. Returns value of Wth largest wavelet coefficient. The value of Smoothing (bias) coefficient is not included in the sorting (as it has different nature) and it can be accessed through WaveletValueDaub12(X,n,1).

where

X = Time Series
n = 2^Window Exponent
W = Sorted Wavelet Number

Discussion:
This indicator provides the possibility to estimate relative significance of several largest wavelets. For more information on Wavelets refer to Wavelet Discussion.

For more details, refer to *Wavelets and Filter Banks*, by Gilbert Strang and Truong Nguyen (Wellesley – Cambridge Press, 1996).

Daubechies-20 Wavelet Coefficient Value Calculation with Sorting (Professional Only)

Abbreviation: WaveletSortDaub20

Category: Wavelet

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Sorted Wavelet Number	1 <= Int <= 2^WinExponent	1

Calculation:

SortDescending(Daub20Wavelet(X,n))(W)

Calculates discrete Daubechies-20 wavelet transform of X over the last n points. Sorts the coefficients in descending order. Returns value of Wth largest wavelet coefficient. The value of Smoothing (bias) coefficient is not included in the sorting (as it has different nature) and it can be accessed through WaveletValueDaub20(X,n,1).

where

X = Time Series

n = 2^Window Exponent

W = Sorted Wavelet Number

Discussion:

This indicator provides the possibility to estimate relative significance of several largest wavelets. For more information on Wavelets refer to Wavelet Discussion.

For more details, refer to *Wavelets and Filter Banks*, by Gilbert Strang and Truong Nguyen (Wellesley – Cambridge Press, 1996).

Haar Wavelet Filtering (Professional Only)

Abbreviation: WaveletFilterHaar
Category: Wavelet

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Percent Threshold	0.0 <= Real <= 100.0	1

Calculation:

InverseHaarWavelet(ThresholdFilter(HaarWavelet(X,n),T))

Calculates direct Haar wavelet transform of X over the last n points. Applies threshold filter to the result (sets to zero all wavelet coefficients less than T% of the largest one except the Smoothing coefficient; the value of Smoothing (bias) coefficient is always set to zero). Calculates inverse Haar wavelet transform of the result of filtering. Returns the result of the inverse transform corresponding to the current time point.

where

X = Time Series
n = 2^Window Exponent
T = Percent Threshold

Discussion:
As the value of the Smoothing (bias) wavelet coefficient is always set to zero, if you call this indicator with Percent Threshold=0, you will get back the input Time Series with zero bias rather than this Time Series itself. Note that the bias is recalculated for each position of the n Periods sized moving window, so it is not a constant through the whole time series. Such type of filtering may be believed to make some internal features of the Time Series, revealed as a result of filtering, more pronounced. While the acceptable range for the Percent Threshold is from 0 to 100%, it is recommended to vary this value from 0 through such values as 0.001 or 0.1 or 0.5 or 1 or 2 up to about 10%. Usually there are only several wavelets with relatively large amplitudes (wavelet coefficients), and most of them are less than several % of the largest one. So, the changes in the filtered picture are most pronounced for low Threshold values. For more information on Wavelets refer to Wavelet Discussion.

For more details, refer to *Wavelets and Filter Banks*, by Gilbert Strang and Truong Nguyen (Wellesley – Cambridge Press, 1996).

Daubechies-4 Wavelet Filtering (Professional Only)

Abbreviation: WaveletFilterDaub4
Category: Wavelet

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Percent Threshold	0.0 <= Real <= 100.0	1

Calculation:

InverseDaub4Wavelet(ThresholdFilter(Daub4Wavelet(X,n),T))

Calculates direct Daubechies-4 w avelet transform of X over the last n points. Applies threshold filter to the result (sets to zero all w avelet coefficients less than T% of the largest one except the Smoothing coefficient; the value of Smoothing (bias) coefficient is alw ays set to zero). Calculates inverse Daubechies-4 w avelet transform of the result of filtering. Returns the result of the inverse transform corresponding to the current time point.

w here

X = Time Series
n = 2^Window Exponent
T = Percent Threshold

Discussion:
As the value of the Smoothing (bias) w avelet coefficient is alw ays set to zero, if you call this indicator w ith Percent Threshold=0, you w ill get back the input Time Series w ith zero bias rather than this Time Series itself. Note that the bias is recalculated for each position of the n Periods sized moving w indow , so it is not a constant through the w hole time series. Such type of filtering may be believed to make some internal features of the Time Series, revealed as a result of filtering, more pronounced. While the acceptable range for the Percent Threshold is from 0 to 100%, it is recommended to vary this value from 0 through such values as 0.001 or 0.1 or 0.5 or 1 or 2 up to about 10%. Usually there are only several w avelets w ith relatively large amplitudes (w avelet coefficients), and most of them are less than several % of the largest one. So, the changes in the filtered picture are most pronounced for low Threshold values. For more information on Wavelets refer to Wavelet Discussion.

For more details, refer to *Wavelets and Filter Banks*, by Gilbert Strang and Truong Nguyen (Wellesley – Cambridge Press, 1996).

Daubechies-12 Wavelet Filtering (Professional Only)

Abbreviation: WaveletFilterDaub12
Category: Wavelet

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Percent Threshold	0.0 <= Real <= 100.0	1

Calculation:

InverseDaub4Wavelet(ThresholdFilter(Daub12Wavelet(X,n),T))

Calculates direct Daubechies-12 wavelet transform of X over the last n points. Applies threshold filter to the result (sets to zero all wavelet coefficients less than T% of the largest one except the Smoothing coefficient; the value of Smoothing (bias) coefficient is always set to zero). Calculates inverse Daubechies-12 wavelet transform of the result of filtering. Returns the result of the inverse transform corresponding to the current time point.

where

X = Time Series
n = 2^Window Exponent
T = Percent Threshold

Discussion:
As the value of the Smoothing (bias) wavelet coefficient is always set to zero, if you call this indicator with Percent Threshold=0, you will get back the input Time Series with zero bias rather than this Time Series itself. Note that the bias is recalculated for each position of the n Periods sized moving window, so it is not a constant through the whole time series. Such type of filtering may be believed to make some internal features of the Time Series, revealed as a result of filtering, more pronounced. While the acceptable range for the Percent Threshold is from 0 to 100%, it is recommended to vary this value from 0 through such values as 0.001 or 0.1 or 0.5 or 1 or 2 up to about 10%. Usually there are only several wavelets with relatively large amplitudes (wavelet coefficients), and most of them are less than several % of the largest one. So, the changes in the filtered picture are most pronounced for low Threshold values. For more information on Wavelets refer to Wavelet Discussion.

For more details, refer to *Wavelets and Filter Banks*, by Gilbert Strang and Truong Nguyen (Wellesley – Cambridge Press, 1996).

Daubechies-20 Wavelet Filtering (Professional Only)

Abbreviation: WaveletFilterDaub20
Category: Wavelet

Input Parameters:

Name	Range	Default
Time Series		Close
Window Exponent	1 <= Int <= 10	6
Percent Threshold	0.0 <= Real <= 100.0	1

Calculation:

InverseDaub20Wavelet(ThresholdFilter(Daub20Wavelet(X,n),T))

Calculates direct Daubechies-20 wavelet transform of X over the last n points. Applies threshold filter to the result (sets to zero all wavelet coefficients less than T% of the largest one except the Smoothing coefficient; the value of Smoothing (bias) coefficient is always set to zero). Calculates inverse Daubechies-20 wavelet transform of the result of filtering. Returns the result of the inverse transform corresponding to the current time point.

where

X = Time Series
n = 2^Window Exponent
T = Percent Threshold

Discussion:
As the value of the Smoothing (bias) wavelet coefficient is always set to zero, if you call this indicator with Percent Threshold=0, you will get back the input Time Series with zero bias rather than this Time Series itself. Note that the bias is recalculated for each position of the n Periods sized moving window, so it is not a constant through the whole time series. Such type of filtering may be believed to make some internal features of the Time Series, revealed as a result of filtering, more pronounced. While the acceptable range for the Percent Threshold is from 0 to 100%, it is recommended to vary this value from 0 through such values as 0.001 or 0.1 or 0.5 or 1 or 2 up to about 10%. Usually there are only several wavelets with relatively large amplitudes (wavelet coefficients), and most of them are less than several % of the largest one. So, the changes in the filtered picture are most pronounced for low Threshold values. For more information on Wavelets refer to Wavelet Discussion.

For more details, refer to *Wavelets and Filter Banks*, by Gilbert Strang and Truong Nguyen (Wellesley – Cambridge Press, 1996).