

QuantShare Programming Language

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1. QuantShare Language

1.1 Application Info

1.1.1 NbGroups

NBGROUPS

Number of groups

Application Info

SYNTAX **NbGroups()**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of groups

ADDITIONAL
INFO

EXAMPLE NbGroups()

1.1.2 NbIndexes

NBINDEXES

Number of indices

Application Info

SYNTAX **NbIndexes()**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of indexes

ADDITIONAL
INFO

EXAMPLE NbIndexes()

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1.1.3 NbIndustries

NBINDUSTRIES
Number of industries

Application Info

SYNTAX	NbIndustries()
RETURNS	NUMERIC ARRAY
DESCRIPTION	Returns the number of industries
ADDITIONAL INFO	
EXAMPLE	NbIndustries()

1.1.4 NbInGroup

NBINGROUP

Application Info

Number of symbols in the specified group

SYNTAX **NbInGroup(ARRAY group name)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of symbols that are included in the specified group

ADDITIONAL
INFO

EXAMPLE NbInGroup("Stock")

1.1.5 NbInIndex

NBININDEX

Application Info

Number of symbols in the specified index

SYNTAX **NbInIndex(ARRAY index name)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of symbols that are included in the specified index

ADDITIONAL
INFO

EXAMPLE NbInIndex("SP500")

1.1.6 NbInIndustry

NBININDUSTRY

Application Info

Number of symbols in the specified industry

SYNTAX **NbInIndustry(ARRAY industry name)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of symbols that are included in the specified industry

ADDITIONAL
INFO

EXAMPLE NbInIndustry("Drug Stores")

1.1.7 NbInMarket

NBINMARKET

Application Info

Number of symbols in the specified market

SYNTAX **NbInMarket(ARRAY market name)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of symbols that are included in the specified market

ADDITIONAL
INFO

EXAMPLE NbInMarket("NASDAQ")

1.1.8 NbInSector

NBINSECTOR

Application Info

Number of symbols in the specified sector

SYNTAX **NbInSector(ARRAY sector name)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of symbols that are included in the specified sector

ADDITIONAL
INFO

EXAMPLE NbInSector("Services")

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1.1.9 NbMarkets

NBMARKETS

Number of markets

Application Info

SYNTAX **NbMarkets()**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of markets

ADDITIONAL
INFO

EXAMPLE NbMarkets()

1.1.10 NbSectors

NBSECTORS

Number of sectors

Application Info

SYNTAX **NbSectors()**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of sectors

ADDITIONAL
INFO

EXAMPLE NbSectors()

1.2 Candlestick Pattern

1.2.1 Cdl2crows (0)

CDL2CROWS

Two Crows

Candlestick Pattern

SYNTAX **Cdl2crows()**

RETURNS NUMERIC ARRAY

DESCRIPTION Two Crows, The Two Crows Pattern is a 3-day pattern.

ADDITIONAL INFO Signal: Bearish
Pattern: Reversal
Reliability: Medium
During an uptrend we see the market closing lower after an opening gap. Then we see a black day that fills the gap creating the Bearish Two Crows Pattern. It suggests the erosion of the uptrend, and warns about a possible trend reversal.

EXAMPLE Cdl2crows()

1.2.2 Cdl2crows (1)

CDL2CROWS

Two Crows

Candlestick Pattern

SYNTAX	Cdl2crows(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Two Crows, The Two Crows Pattern is a 3-day pattern.
ADDITIONAL INFO	Signal: Bearish Pattern: Reversal Reliability: Medium During an uptrend we see the market closing lower after an opening gap. Then we see a black day that fills the gap creating the Bearish Two Crows Pattern. It suggests the erosion of the uptrend, and warns about a possible trend reversal.
EXAMPLE	Cdl2crows(open, high, low, close)

1.2.3 Cdl3blackcrows (0)

CDL3BLACKCROWS

Candlestick Pattern

Three Black Crows

SYNTAX **Cdl3blackcrows()**

RETURNS NUMERIC ARRAY

DESCRIPTION Three Black Crows, The Three Black Crows got their name from the resemblance of three crows looking down from their perch from a tree.

ADDITIONAL Signal: Bearish
INFO Pattern: reversal
 Reliability: high
 Three long black days with each successive open being within the body of the previous day and each successive close being below the previous day's and near the day's low.

EXAMPLE Cdl3blackcrows()

1.2.4 Cdl3blackcrows (1)

CDL3BLACKCROWS

Candlestick Pattern

Three Black Crows

SYNTAX	Cdl3blackcrows(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Three Black Crows, The Three Black Crows got their name from the resemblance of three crows looking down from their perch from a tree.
ADDITIONAL INFO	Signal: Bearish Pattern: reversal Reliability: high Three long black days with each successive open being within the body of the previous day and each successive close being below the previous day's and near the day's low.
EXAMPLE	Cdl3blackcrows(open, high, low, close)

1.2.5 Cdl3inside (0)

CDL3INSIDE

Three Inside Up/Down

Candlestick Pattern

SYNTAX **Cdl3inside()**

RETURNS NUMERIC ARRAY

DESCRIPTION Three Inside Up/Down, Note that after the long candle day that is in the same direction of the trend that the Harami pattern occurs.

ADDITIONAL Signal: Bullish
INFO Pattern: reversal
 Reliability: high
 A bullish Harami pattern is followed by a white day that has a higher close than the second day.

EXAMPLE Cdl3inside()

1.2.6 Cdl3inside (1)

CDL3INSIDE

Candlestick Pattern

Three Inside Up/Down

SYNTAX	Cdl3inside(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Three Inside Up/Down, Note that after the long candle day that is in the same direction of the trend that the Harami pattern occurs.
ADDITIONAL INFO	Signal: Bullish Pattern: reversal Reliability: high A bullish Harami pattern is followed by a white day that has a higher close than the second day.
EXAMPLE	Cdl3inside(open, high, low, close)

1.2.7 Cdl3linestrike (0)

CDL3LINESTRIKE
Three-Line Strike

Candlestick Pattern

SYNTAX **Cdl3linestrike()**

RETURNS NUMERIC ARRAY

DESCRIPTION Three-Line Strike : This function is contained within the Pattern Recognition set of indicators.

ADDITIONAL Three Line Strike Bullish
INFO Signal: Bullish
 Pattern: continuation
 Reliability: low
 Identification
 Three long white days with consecutively higher closes are followed by a fourth day that gaps open in the direction of the trend and closes below the open of the first day.
 Three Line Strike Bearish
 Signal: Bearish
 Pattern: continuation
 Reliability: low
 Identification
 Three long black days with consecutively lower closes is followed by a fourth day that gaps in the direction of the trend and closes above the open of the first day.

EXAMPLE Cdl3linestrike()

1.2.8 Cdl3linestrike (1)

CDL3LINESTRIKE
Three-Line Strike

Candlestick Pattern

SYNTAX **Cdl3linestrike(ARRAY open, ARRAY high, ARRAY low, ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Three-Line Strike : This function is contained within the Pattern Recognition set of indicators.

ADDITIONAL INFO Three Line Strike Bullish
Signal: Bullish
Pattern: continuation
Reliability: low
Identification
Three long white days with consecutively higher closes are followed by a fourth day that gaps open in the direction of the trend and closes below the open of the first day.
Three Line Strike Bearish
Signal: Bearish
Pattern: continuation
Reliability: low
Identification
Three long black days with consecutively lower closes is followed by a fourth day that gaps in the direction of the trend and closes above the open of the first day.

EXAMPLE Cdl3linestrike(open, high, low, close)

1.2.9 Cdl3outside (0)

CDL3OUTSIDE

Three Outside Up/Down

Candlestick Pattern

SYNTAX **Cdl3outside()**

RETURNS NUMERIC ARRAY

DESCRIPTION Three Outside Up/Down : This function is contained within the Pattern Recognition set of indicators.

ADDITIONAL INFO Three Outside Down
Signal: Bearish
Pattern: reversal
Reliability: high
Identification
A bearish Engulfing pattern is followed by a black day whose close is lower than the second day.
Three Outside Up
Signal: Bullish
Pattern: reversal
Reliability: high
Identification
A bullish Engulfing pattern is followed by a white day whose close is higher than the second day.

EXAMPLE Cdl3outside()

1.2.10 Cdl3outside (1)

CDL3OUTSIDE

Candlestick Pattern

Three Outside Up/Down

SYNTAX **Cdl3outside(ARRAY open, ARRAY high, ARRAY low, ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Three Outside Up/Down : This function is contained within the Pattern Recognition set of indicators.

ADDITIONAL INFO Three Outside Down
Signal: Bearish
Pattern: reversal
Reliability: high
Identification
A bearish Engulfing pattern is followed by a black day whose close is lower than the second day.
Three Outside Up
Signal: Bullish
Pattern: reversal
Reliability: high
Identification
A bullish Engulfing pattern is followed by a white day whose close is higher than the second day.

EXAMPLE Cdl3outside(open, high, low, close)

1.2.11 Cdl3staRsinsouth (0)

CDL3STARSINSOUTH

Three Stars In The South

Candlestick Pattern

SYNTAX **Cdl3staRsinsouth()**

RETURNS NUMERIC ARRAY

DESCRIPTION Three Stars In The South, The slow down of the trend is visually obvious.

ADDITIONAL Signal: Bullish
INFO Pattern: reversal
 Reliability: moderate
 A long black day with a long lower shadow is followed by a similar but smaller
 black day whose lower shadow is shallower than the first day. The third day is
 a small Black Marubozu (open is the high of the day and the close is the low of
 the day) that lies within the second day's trading range.

EXAMPLE Cdl3staRsinsouth()

1.2.12 Cdl3staRsinsouth (1)

CDL3STARSINSOUTH

Three Stars In The South

Candlestick Pattern

SYNTAX	Cdl3staRsinsouth(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Three Stars In The South, The slow down of the trend is visually obvious.
ADDITIONAL INFO	Signal: Bullish Pattern: reversal Reliability: moderate A long black day with a long lower shadow is followed by a similar but smaller black day whose lower shadow is shallower than the first day. The third day is a small Black Marubozu (open is the high of the day and the close is the low of the day) that lies within the second day's trading range.
EXAMPLE	Cdl3staRsinsouth(open, high, low, close)

1.2.13 Cdl3whitesoldiers (0)

CDL3WHITESOLDIERS

Three Advancing White Soldiers

Candlestick Pattern

SYNTAX **Cdl3whitesoldiers()**

RETURNS NUMERIC ARRAY

DESCRIPTION Three Advancing White Soldiers, The Three White Soldiers (also known as The Advancing Three White Soldiers) is a healthy market reversal pattern.

ADDITIONAL INFO Signal: Bullish
Pattern: reversal
Reliability: high
Three long white days with each successive open being within the body of the previous day and each successive close being higher than the previous day and near the day's high.

EXAMPLE Cdl3whitesoldiers()

1.2.14 Cdl3whitesoldiers (1)

CDL3WHITESOLDIERS

Candlestick Pattern

Three Advancing White Soldiers

SYNTAX	Cdl3whitesoldiers(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Three Advancing White Soldiers, The Three White Soldiers (also known as The Advancing Three White Soldiers) is a healthy market reversal pattern.
ADDITIONAL INFO	Signal: Bullish Pattern: reversal Reliability: high Three long white days with each successive open being within the body of the previous day and each successive close being higher than the previous day and near the day's $\frac{1}{2}$ s high.
EXAMPLE	Cdl3whitesoldiers(open, high, low, close)

1.2.15 CdlAbandonedbaby (0)

CDLABANDONEDBABY

Candlestick Pattern

Abandoned Baby

SYNTAX	CdlAbandonedbaby(ARRAY penetration)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Abandoned Baby, A rare reversal pattern characterized by a gap followed by a Doji, which is then followed by another gap in the opposite direction.
ADDITIONAL INFO	Abandoned Baby Bearish Signal: Bearish Pattern: reversal Reliability: high Identification A long white day is followed by a Doji that gaps in the direction of the trend. Then a black day occurs gapping in the opposite direction with no overlapping shadows. Abandoned Baby Bullish Signal: Bullish Pattern: reversal Reliability: high Identification A long black day is followed by a Doji that gaps in the direction of the trend. Then a white day occurs gapping in the opposite direction with no overlapping shadows.
EXAMPLE	CdlAbandonedbaby(14)

1.2.16 CdlAbandonedbaby (1)

CDLABANDONEDBABY

Candlestick Pattern

Abandoned Baby

SYNTAX **CdlAbandonedbaby(ARRAY open, ARRAY high, ARRAY low, ARRAY close, ARRAY penetration)**

RETURNS NUMERIC ARRAY

DESCRIPTION Abandoned Baby, A rare reversal pattern characterized by a gap followed by a Doji, which is then followed by another gap in the opposite direction.

ADDITIONAL INFO Abandoned Baby Bearish
Signal: Bearish
Pattern: reversal
Reliability: high
Identification
A long white day is followed by a Doji that gaps in the direction of the trend. Then a black day occurs gapping in the opposite direction with no overlapping shadows.
Abandoned Baby Bullish
Signal: Bullish
Pattern: reversal
Reliability: high
Identification
A long black day is followed by a Doji that gaps in the direction of the trend. Then a white day occurs gapping in the opposite direction with no overlapping shadows.

EXAMPLE CdlAbandonedbaby(open, high, low, close, 14)

1.2.17 CdlAdvanceblock (0)

CDLADVANCEBLOCK

Candlestick Pattern

Advance Block

SYNTAX **CdlAdvanceblock()**

RETURNS NUMERIC ARRAY

DESCRIPTION Advance Block, The Advance Block is somewhat indicative as the Three White Soldiers but it is a bearish signal.

ADDITIONAL INFO Signal: Bearish
Pattern: reversal
Reliability: moderate
Three white days. Each successive day opens within the body of the previous day and closes above the previous day. The bodies of the candles get progressively smaller with the upper shadows of day 2 and 3 getting progressively longer.

EXAMPLE CdlAdvanceblock()

1.2.18 CdlAdvanceblock (1)

CDLADVANCEBLOCK

Candlestick Pattern

Advance Block

SYNTAX	CdlAdvanceblock(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Advance Block, The Advance Block is somewhat indicative as the Three White Soldiers but it is a bearish signal.
ADDITIONAL INFO	Signal: Bearish Pattern: reversal Reliability: moderate Three white days. Each successive day opens within the body of the previous day and closes above the previous day. The bodies of the candles get progressively smaller with the upper shadows of day 2 and 3 getting progressively longer.
EXAMPLE	CdlAdvanceblock(open, high, low, close)

1.2.19 CdlBelthold (0)

CDLBELTHOLD

Candlestick Pattern

Belt-hold

SYNTAX **CdlBelthold()**

RETURNS NUMERIC ARRAY

DESCRIPTION Belt-hold, The Belt Hold lines are formed by single candlesticks.

ADDITIONAL INFO

Belt Hold Bearish
Signal: Bearish
Pattern: reversal
Reliability: low
Identification
A black day occurs with no upper shadow and a close near the day's low.

Belt Hold Bullish
Signal: Bullish
Pattern: reversal
Reliability: low
Identification
A white day occurs with no lower shadow and a close near the day's high.

EXAMPLE CdlBelthold()

1.2.20 CdlBelthold (1)

CDLBELTHOLD

Candlestick Pattern

Belt-hold

SYNTAX **CdlBelthold(ARRAY open, ARRAY high, ARRAY low, ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Belt-hold, The Belt Hold lines are formed by single candlesticks.

ADDITIONAL Belt Hold Bearish
INFO Signal: Bearish
 Pattern: reversal
 Reliability: low
 Identification
 A black day occurs with no upper shadow and a close near the day's low.
 Belt Hold Bullish
 Signal: Bullish
 Pattern: reversal
 Reliability: low
 Identification
 A white day occurs with no lower shadow and a close near the day's high.

EXAMPLE CdlBelthold(open, high, low, close)

1.2.21 CdlBreakaway (0)

CDLBREAKAWAY

Candlestick Pattern

Breakaway

SYNTAX **CdlBreakaway()**

RETURNS NUMERIC ARRAY

DESCRIPTION Breakaway, If a trend has been evident, the breakaway pattern, whether bullish or bearish initially indicates the acceleration of that trend.

ADDITIONAL INFO Bullish Breakaway
Signal: Bullish
Pattern: Reversal
Reliability: Medium
Identification

There is a downtrend but we also see that the prices bottom out and level off now. The result is a long white candlestick that however does not close the initial downward gap of the first and second days. This suggests a short-term reversal.

Bearish Breakaway
Signal: Bearish
Pattern: Reversal
Reliability: Medium
Identification

We see this pattern during an uptrend marked with a bullish surge that eventually weakens. This weakening is illustrated by a long black candlestick that is unable to close the gap into the body of the first day. These events warn us about a short-term reversal.

EXAMPLE CdlBreakaway()

1.2.22 CdlBreakaway (1)

CDLBREAKAWAY

Candlestick Pattern

Breakaway

SYNTAX **CdlBreakaway(ARRAY open, ARRAY high, ARRAY low, ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Breakaway, If a trend has been evident, the breakaway pattern, whether bullish or bearish initially indicates the acceleration of that trend.

ADDITIONAL INFO
Bullish Breakaway
Signal: Bullish
Pattern: Reversal
Reliability: Medium
Identification

There is a downtrend but we also see that the prices bottom out and level off now. The result is a long white candlestick that however does not close the initial downward gap of the first and second days. This suggests a short-term reversal.

Bearish Breakaway
Signal: Bearish
Pattern: Reversal
Reliability: Medium
Identification

We see this pattern during an uptrend marked with a bullish surge that eventually weakens. This weakening is illustrated by a long black candlestick that is unable to close the gap into the body of the first day. These events warn us about a short-term reversal.

EXAMPLE CdlBreakaway(open, high, low, close)

1.2.23 CdlClosingmarubozu (0)

CDLCLOSINGMARUBOZU
Closing Marubozu

Candlestick Pattern

SYNTAX **CdlClosingmarubozu()**

RETURNS NUMERIC ARRAY

DESCRIPTION Closing Marubozu, a Closing Marubozu has no shadow at it's closing end.

ADDITIONAL Black Closing marubozu
INFO Signal: Bearish
 Pattern: Reversal/Continuation
 Reliability: Low
 Identification:
 The Black Closing Marubozu is a single candlestick pattern characterized by its
 long black body. It does not have a lower shadow but it has an upper shadow. It
 is an extremely strong bearish candlestick pattern.
 White Closing Marubozu
 Signal: Bullish
 Pattern: Reversal/Continuation
 Reliability: Low
 Identification:
 The White Closing Marubozu is a single candlestick pattern characterized by a
 long white body with no upper shadow. This is an extremely strong bullish
 candlestick pattern.

EXAMPLE CdlClosingmarubozu()

1.2.24 CdlClosingmarubozu (1)

CDLCLOSINGMARUBOZU
Closing Marubozu

Candlestick Pattern

SYNTAX	CdlClosingmarubozu(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Closing Marubozu, a Closing Marubozu has no shadow at it's closing end.
ADDITIONAL INFO	Black Closing marubozu Signal: Bearish Pattern: Reversal/Continuation Reliability: Low Identification: The Black Closing Marubozu is a single candlestick pattern characterized by its long black body. It does not have a lower shadow but it has an upper shadow. It is an extremely strong bearish candlestick pattern. White Closing Marubozu Signal: Bullish Pattern: Reversal/Continuation Reliability: Low Identification: The White Closing Marubozu is a single candlestick pattern characterized by a long white body with no upper shadow. This is an extremely strong bullish candlestick pattern.
EXAMPLE	CdlClosingmarubozu(open, high, low, close)

1.2.25 CdlConcealbabyswall (0)

CDLCONCEALBABYSWALL
Concealing Baby Swallow

Candlestick Pattern

SYNTAX **CdlConcealbabyswall()**

RETURNS NUMERIC ARRAY

DESCRIPTION Concealing Baby Swallow, The first two days of the signal, two Black Marubozus, demonstrate the continuation of the downtrend.

ADDITIONAL Signal: Bullish
INFO Pattern: reversal
 Reliability: high
 The first two days are Black Marubozu days (open is the high of the day and the close is the low of the day). The following day is a black day that gaps in the same direction but trades up into the body of the second day. The final day is a Black Marubozu that gaps up and sells off to engulf the third day.

EXAMPLE CdlConcealbabyswall()

1.2.26 CdlConcealbabyswall (1)

CDLCONCEALBABYSWALL
Concealing Baby Swallow

Candlestick Pattern

SYNTAX	CdlConcealbabyswall(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Concealing Baby Swallow, The first two days of the signal, two Black Marubozus, demonstrate the continuation of the downtrend.
ADDITIONAL INFO	Signal: Bullish Pattern: reversal Reliability: high The first two days are Black Marubozu days (open is the high of the day and the close is the low of the day). The following day is a black day that gaps in the same direction but trades up into the body of the second day. The final day is a Black Marubozu that gaps up and sells off to engulf the third day.
EXAMPLE	CdlConcealbabyswall(open, high, low, close)

1.2.27 CdlCounterattack (0)

CDLCOUNTERATTACK
Counterattack Lines

Candlestick Pattern

SYNTAX **CdlCounterattack()**

RETURNS NUMERIC ARRAY

DESCRIPTION Counterattack, Meeting Lines (or Counterattack Lines) are formed when opposite coloured bodies have the same closing price.

ADDITIONAL
INFO A counter attack pattern is formed when opposite colour candles share the same close.
This two candle pattern can be bullish or bearish depending where the pattern appears.
The counter attack pattern warns that the tide is turning.

EXAMPLE CdlCounterattack()

1.2.28 CdlCounterattack (1)

CDLCOUNTERATTACK
Counterattack Lines

Candlestick Pattern

SYNTAX	CdlCounterattack(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Counterattack, Meeting Lines (or Counterattack Lines) are formed when opposite coloured bodies have the same closing price.
ADDITIONAL INFO	A counter attack pattern is formed when opposite colour candles share the same clse. This two candle pattern can be bullish or bearish depending where the pattern appears. The counter attack pattern warns that the tide is turning.
EXAMPLE	CdlCounterattack(open, high, low, close)

1.2.29 CdlDarkcloudcover (0)

CDLDARKCLOUDCOVER

Dark Cloud Cover

Candlestick Pattern

SYNTAX	CdlDarkcloudcover(ARRAY penetration)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Dark Cloud Cover, The dark Cloud Cover is the bearish counterpart to the Piercing pattern.
ADDITIONAL INFO	Dark Cloud Cover Bearish Signal: Bearish Pattern: reversal Reliability: high Identification A long white day is followed by a black day which gaps above the high of the white candle and then closes below the midpoint of the first day's body.
EXAMPLE	CdlDarkcloudcover(14)

1.2.30 CdlDarkcloudcover (1)

CDLDARKCLOUDCOVER

Candlestick Pattern

Dark Cloud Cover

SYNTAX **CdlDarkcloudcover(ARRAY open, ARRAY high, ARRAY low, ARRAY close, ARRAY penetration)**

RETURNS NUMERIC ARRAY

DESCRIPTION Dark Cloud Cover, The dark Cloud Cover is the bearish counterpart to the Piercing pattern.

ADDITIONAL INFO Dark Cloud Cover Bearish
Signal: Bearish
Pattern: reversal
Reliability: high
Identification
A long white day is followed by a black day which gaps above the high of the white candle and then closes below the midpoint of the first day's body.

EXAMPLE CdlDarkcloudcover(open, high, low, close, 14)

1.2.31 CdlDoji (0)

CDLDOJI
Doji

Candlestick Pattern

SYNTAX **CdlDoji()**

RETURNS NUMERIC ARRAY

DESCRIPTION Doji, the Doji is one of the most important signals in candlestick analysis.

ADDITIONAL Doji
INFO Signal: Indecision
 Pattern: Reversal/Continuation
 Reliability: Low
 Identification:
 If a security has virtually equal opening and closing prices, this leads to a Doji.
 The length of the upper and lower shadows of a Doji can vary and
 consequently the resulting candlestick may look like a cross, inverted cross or a
 plus sign. Doji, taken alone, is a neutral pattern.

EXAMPLE CdlDoji()

1.2.32 CdlDoji (1)

CDLDOJI
Doji

Candlestick Pattern

SYNTAX **CdlDoji(ARRAY open, ARRAY high, ARRAY low, ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Doji, the Doji is one of the most important signals in candlestick analysis.

ADDITIONAL Doji
INFO Signal: Indecision
 Pattern: Reversal/Continuation
 Reliability: Low
 Identification:
 If a security has virtually equal opening and closing prices, this leads to a Doji.
 The length of the upper and lower shadows of a Doji can vary and
 consequently the resulting candlestick may look like a cross, inverted cross or a
 plus sign. Doji, taken alone, is a neutral pattern.

EXAMPLE CdlDoji(open, high, low, close)

1.2.33 CdlDojistar (0)

CDLDOJISTAR

Candlestick Pattern

Doji Star

SYNTAX **CdlDojistar()**

RETURNS NUMERIC ARRAY

DESCRIPTION Doji Star, Upon seeing a Doji in an overbought or oversold condition, an extremely high probability reversal situation becomes evident.

ADDITIONAL INFO Doji Star Bullish
Signal: Bullish
Pattern: reversal
Reliability: moderate
Identification
A long black day is followed by a Doji that gaps in the direction of the trend.
The shadows of the Doji should not be long.
Doji Star Bearish
Signal: Bearish
Pattern: reversal
Reliability: moderate
Identification
A long white day is followed by a Doji that gaps in the direction of the trend.
The shadows of the Doji should not be long.

EXAMPLE CdlDojistar()

1.2.34 CdlDojistar (1)

CDLDOJISTAR

Candlestick Pattern

Doji Star

SYNTAX	CdlDojistar(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Doji Star, Upon seeing a Doji in an overbought or oversold condition, an extremely high probability reversal situation becomes evident.
ADDITIONAL INFO	Doji Star Bullish Signal: Bullish Pattern: reversal Reliability: moderate Identification A long black day is followed by a Doji that gaps in the direction of the trend. The shadows of the Doji should not be long. Doji Star Bearish Signal: Bearish Pattern: reversal Reliability: moderate Identification A long white day is followed by a Doji that gaps in the direction of the trend. The shadows of the Doji should not be long.
EXAMPLE	CdlDojistar(open, high, low, close)

1.2.35 CdlDragonflydoji (0)

CDLDRAGONFLYDOJI

Candlestick Pattern

Dragonfly Doji

SYNTAX **CdlDragonflydoji()**

RETURNS NUMERIC ARRAY

DESCRIPTION Dragonfly Doji, The Dragonfly Doji occurs when trading opens, trades lower, then closes at the open price which is the high of the day.

ADDITIONAL INFO Dragonfly Doji Bearish
Signal: Bearish
Pattern: reversal
Reliability: low/moderate
Identification
A Doji forms at the upper end of a trading range with a long lower shadow (the longer the more bearish) with no, or almost no upper shadow.
Dragonfly Doji Bullish
Signal: Bullish
Pattern: reversal
Reliability: low/moderate
Identification
A Doji forms at the upper end of the trading range with a long lower shadow (the longer the more bullish).

EXAMPLE CdlDragonflydoji()

1.2.36 CdlDragonflydoji (1)

CDLDRAGONFLYDOJI

Candlestick Pattern

Dragonfly Doji

SYNTAX	CdlDragonflydoji(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Dragonfly Doji, The Dragonfly Doji occurs when trading opens, trades lower, then closes at the open price which is the high of the day.
ADDITIONAL INFO	Dragonfly Doji Bearish Signal: Bearish Pattern: reversal Reliability: low/moderate Identification A Doji forms at the upper end of a trading range with a long lower shadow (the longer the more bearish) with no, or almost no upper shadow. Dragonfly Doji Bullish Signal: Bullish Pattern: reversal Reliability: low/moderate Identification A Doji forms at the upper end of the trading range with a long lower shadow (the longer the more bullish).
EXAMPLE	CdlDragonflydoji(open, high, low, close)

1.2.37 CdlEngulfing (0)

CDLENGULFING
Engulfing Pattern

Candlestick Pattern

SYNTAX **CdlEngulfing()**

RETURNS NUMERIC ARRAY

DESCRIPTION Engulfing Pattern, Two of the most compelling candlestick signals are the Bullish Engulfing Pattern and Bearish Engulfing Pattern.

ADDITIONAL Engulfing Bullish
INFO Signal: Bullish
Pattern: reversal
Reliability: moderate
Identification
A black day is completely $\frac{1}{2}$ engulfed $\frac{1}{2}$ by a large white day that gaps below the black day's low and rallies to close above its high.
Engulfing Bearish
Signal: Bearish
Pattern: reversal
Reliability: moderate
Identification
A white day is then completely $\frac{1}{2}$ engulfed $\frac{1}{2}$ by a large black day which gaps above the white day's high and closes below its low.

EXAMPLE CdlEngulfing()

1.2.38 CdlEngulfing (1)

CDLENGULFING

Candlestick Pattern

Engulfing Pattern

SYNTAX **CdlEngulfing(ARRAY open, ARRAY high, ARRAY low, ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Engulfing Pattern, Two of the most compelling candlestick signals are the Bullish Engulfing Pattern and Bearish Engulfing Pattern.

ADDITIONAL INFO Engulfing Bullish
Signal: Bullish
Pattern: reversal
Reliability: moderate
Identification
A black day is completely $\frac{1}{2}$ engulfed $\frac{1}{2}$ by a large white day that gaps below the black day's low and rallies to close above its high.
Engulfing Bearish
Signal: Bearish
Pattern: reversal
Reliability: moderate
Identification
A white day is then completely $\frac{1}{2}$ engulfed $\frac{1}{2}$ by a large black day which gaps above the white day's high and closes below its low.

EXAMPLE CdlEngulfing(open, high, low, close)

1.2.39 CdlEveningdojistar (0)

CDLEVENINGDOJISTAR

Candlestick Pattern

Evening Doji Star

SYNTAX **CdlEveningdojistar(ARRAY penetration)**

RETURNS NUMERIC ARRAY

DESCRIPTION Evening Doji Star, A three day bearish reversal pattern similar to the Evening Star.

ADDITIONAL INFO Evening Doji Star Bearish
Signal: Bearish
Pattern: reversal
Reliability: high
Identification
A long white day is followed by a Doji that gaps in the direction of the trend.
The third day is a black day that closes in the bottom half of the white candle.

EXAMPLE CdlEveningdojistar(14)

1.2.40 CdlEveningdojistar (1)

CDLEVENINGDOJISTAR

Candlestick Pattern

Evening Doji Star

SYNTAX	CdlEveningdojistar(ARRAY open, ARRAY high, ARRAY low, ARRAY close, ARRAY penetration)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Evening Doji Star, A three day bearish reversal pattern similar to the Evening Star.
ADDITIONAL INFO	Evening Doji Star Bearish Signal: Bearish Pattern: reversal Reliability: high Identification A long white day is followed by a Doji that gaps in the direction of the trend. The third day is a black day that closes in the bottom half of the white candle.
EXAMPLE	CdlEveningdojistar(open, high, low, close, 14)

1.2.41 CdlEveningstar (0)

CDLEVENINGSTAR
Evening Star

Candlestick Pattern

SYNTAX **CdlEveningstar(ARRAY penetration)**

RETURNS NUMERIC ARRAY

DESCRIPTION Evening Star, The Evening Star pattern is a top reversal signal.

ADDITIONAL Evening Star Bearish
INFO Signal: Bearish
 Pattern: reversal
 Reliability: high
 Identification
 A long white day is followed by a small body that gaps in the direction of the trend. The third day is a black day that closes in the bottom half of the white candle.

EXAMPLE CdlEveningstar(14)

1.2.42 CdlEveningstar (1)

CDLEVENINGSTAR
Evening Star

Candlestick Pattern

SYNTAX	CdlEveningstar(ARRAY open, ARRAY high, ARRAY low, ARRAY close, ARRAY penetration)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Evening Star, The Evening Star pattern is a top reversal signal.
ADDITIONAL INFO	Evening Star Bearish Signal: Bearish Pattern: reversal Reliability: high Identification A long white day is followed by a small body that gaps in the direction of the trend. The third day is a black day that closes in the bottom half of the white candle.
EXAMPLE	CdlEveningstar(open, high, low, close, 14)

1.2.43 CdlGapsidesidewhite (0)

CDLGAPSIDESIDEWHITE

Candlestick Pattern

Up/Down-gap side-by-side white lines

SYNTAX **CdlGapsidesidewhite()**

RETURNS NUMERIC ARRAY

DESCRIPTION Up/Down-gap side-by-side white lines, The Up Side By Side White Lines Pattern appears in a bullish market.

ADDITIONAL INFO Side By Side White Lines Bearish
Signal: Bearish
Pattern: continuation
Reliability: moderate
Identification
A black day is followed by a white day that gaps in the direction of the trend. The third candle is also white and is almost identical to the previous day.
Side by Side White Lines Bullish
Signal: Bullish
Pattern: reversal
Reliability: high
Identification
A white day is followed by another white day that gaps in the direction of the trend. The third candle is also white and is almost identical to the previous day.

EXAMPLE CdlGapsidesidewhite()

1.2.44 CdlGapsidesidewhite (1)

CDLGAPSIDESIDEWHITE

Candlestick Pattern

p Side By Side White Lines

SYNTAX	CdlGapsidesidewhite(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Up/Down-gap side-by-side white lines, The Up Side By Side White Lines Pattern appears in a bullish market.
ADDITIONAL INFO	Side By Side White Lines Bearish Signal: Bearish Pattern: continuation Reliability: moderate Identification A black day is followed by a white day that gaps in the direction of the trend. The third candle is also white and is almost identical to the previous day. Side by Side White Lines Bullish Signal: Bullish Pattern: reversal Reliability: high Identification A white day is followed by another white day that gaps in the direction of the trend. The third candle is also white and is almost identical to the previous day.
EXAMPLE	CdlGapsidesidewhite(open, high, low, close)

1.2.45 CdlGravestonedoji (0)

CDLGRAVESTONEDOJI
Gravestone Doji

Candlestick Pattern

SYNTAX **CdlGravestonedoji()**

RETURNS NUMERIC ARRAY

DESCRIPTION Gravestone Doji, The Gravestone Doji is formed when the open and the close occur at the low end of the trading range.

ADDITIONAL INFO Gravestone Doji Bearish
Signal: Bearish
Pattern: reversal
Reliability: low/moderate
Identification
A Doji forms at the lower end of the trading range. The upper shadow is usually long while the lower shadow is small or almost nonexistent.
Gravestone Doji Bullish
Signal: Bullish
Pattern: reversal
Reliability: low/moderate
Identification
A Doji forms at the lower end of the trading range. The upper shadow is usually long while the lower shadow is small or almost nonexistent.

EXAMPLE CdlGravestonedoji()

1.2.46 CdlGravestonedoji (1)

CDLGRAVESTONEDOJI

Candlestick Pattern

Gravestone Doji

SYNTAX **CdlGravestonedoji(ARRAY open, ARRAY high, ARRAY low, ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Gravestone Doji, The Gravestone Doji is formed when the open and the close occur at the low end of the trading range.

ADDITIONAL Gravestone Doji Bearish

INFO Signal: Bearish

Pattern: reversal

Reliability: low/moderate

Identification

A Doji forms at the lower end of the trading range. The upper shadow is usually long while the lower shadow is small or almost nonexistent.

Gravestone Doji Bullish

Signal: Bullish

Pattern: reversal

Reliability: low/moderate

Identification

A Doji forms at the lower end of the trading range. The upper shadow is usually long while the lower shadow is small or almost nonexistent.

EXAMPLE CdlGravestonedoji(open, high, low, close)

1.2.47 CdlHammer (0)

CDLHAMMER
Hammer

Candlestick Pattern

SYNTAX **CdlHammer()**

RETURNS NUMERIC ARRAY

DESCRIPTION Hammer, The Hammer is comprised of one candle.

ADDITIONAL Hammer Bullish
INFO Signal: Bullish
 Pattern: reversal
 Reliability: low/moderate
 Identification
 A small real body forms at the upper end of a trading range with a long lower shadow (the longer the more bullish) with no, or almost no upper shadow.

EXAMPLE CdlHammer()

1.2.48 CdlHammer (1)

CDLHAMMER
Hammer

Candlestick Pattern

SYNTAX	CdlHammer(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Hammer, The Hammer is comprised of one candle.
ADDITIONAL INFO	Hammer Bullish Signal: Bullish Pattern: reversal Reliability: low/moderate Identification A small real body forms at the upper end of a trading range with a long lower shadow (the longer the more bullish) with no, or almost no upper shadow.
EXAMPLE	CdlHammer(open, high, low, close)

1.2.49 CdlHangingman (0)

CDLHANGINGMAN
Hanging Man

Candlestick Pattern

SYNTAX **CdlHangingman()**

RETURNS NUMERIC ARRAY

DESCRIPTION Hanging Man, The Hanging Man is also comprised of one candle.

ADDITIONAL Hanging Man Bearish
INFO Signal: Bearish
 Pattern: reversal
 Reliability: low/moderate
 Identification

A small real body forms at the upper end of the trading range with a long lower shadow (the longer the more bearish) with no, or almost no upper shadow.

EXAMPLE CdlHangingman()

1.2.50 CdlHangingman (1)

CDLHANGINGMAN
Hanging Man

Candlestick Pattern

SYNTAX	CdlHangingman(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Hanging Man, The Hanging Man is also comprised of one candle.
ADDITIONAL INFO	Hanging Man Bearish Signal: Bearish Pattern: reversal Reliability: low/moderate Identification A small real body forms at the upper end of the trading range with a long lower shadow (the longer the more bearish) with no, or almost no upper shadow.
EXAMPLE	CdlHangingman(open, high, low, close)

1.2.51 CdlHarami (0)

CDLHARAMI
Harami Pattern

Candlestick Pattern

SYNTAX **CdlHarami()**

RETURNS NUMERIC ARRAY

DESCRIPTION Harami Pattern, The Harami is an often seen formation.

ADDITIONAL Harami Bullish
INFO Signal: Bullish
 Pattern: reversal
 Reliability: low
 Identification
 A long black day is followed by a white day which gaps opposite the trend and
 is completely engulfed by the real body of the first day.

EXAMPLE CdlHarami()

1.2.52 CdlHarami (1)

CDLHARAMI
Harami Pattern

Candlestick Pattern

SYNTAX	CdlHarami(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Harami Pattern, The Harami is an often seen formation.
ADDITIONAL INFO	Harami Bullish Signal: Bullish Pattern: reversal Reliability: low Identification A long black day is followed by a white day which gaps opposite the trend and is completely engulfed by the real body of the first day.
EXAMPLE	CdlHarami(open, high, low, close)

1.2.53 CdlHaramicross (0)

CDLHARAMICROSS

Candlestick Pattern

Harami Cross Pattern

SYNTAX **CdlHaramicross()**

RETURNS NUMERIC ARRAY

DESCRIPTION Harami Cross Pattern, A two day pattern similar to the Harami (see CDLHARAMI()), the difference is that the last day is a Doji.

ADDITIONAL Harami Cross Bullish
INFO Signal: Bullish
 Pattern: reversal
 Reliability: low
 Identification
 A long black day is followed by a Doji which gaps opposite the trend and is completely engulfed by the real body of the first day.
 Harami Cross Bearish
 Signal: Bearish
 Pattern: reversal
 Reliability: moderate
 Identification
 A long white day is followed by a Doji that gaps down and is completely engulfed by the real body of the first day.

EXAMPLE CdlHaramicross()

1.2.54 CdlHaramicross (1)

CDLHARAMICROSS
Harami Cross Pattern

Candlestick Pattern

SYNTAX **CdlHaramicross(ARRAY open, ARRAY high, ARRAY low, ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Harami Cross Pattern, A two day pattern similar to the Harami (see CDLHARAMI()), the difference is that the last day is a Doji.

ADDITIONAL INFO Harami Cross Bullish
Signal: Bullish
Pattern: reversal
Reliability: low
Identification
A long black day is followed by a Doji which gaps opposite the trend and is completely engulfed by the real body of the first day.
Harami Cross Bearish
Signal: Bearish
Pattern: reversal
Reliability: moderate
Identification
A long white day is followed by a Doji that gaps down and is completely engulfed by the real body of the first day.

EXAMPLE CdlHaramicross(open, high, low, close)

1.2.55 CdlHighwave (0)

CDLHIGHWAVE
High-Wave Candle

Candlestick Pattern

SYNTAX **CdlHighwave()**

RETURNS NUMERIC ARRAY

DESCRIPTION High-Wave Candle : This function is contained within the Pattern Recognition set of indicators.

ADDITIONAL High Wave
INFO Signal: Indecision
 Pattern: Reversal
 Reliability: Medium
 Identification:
 High Wave is a type of candlestick characterized with either a very long upper or a lower shadow. It has only a short real body. A group of these patterns may signal a market turn.

EXAMPLE CdlHighwave()

1.2.56 CdlHighwave (1)

CDLHIGHWAVE
High-Wave Candle

Candlestick Pattern

SYNTAX	CdlHighwave(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	High-Wave Candle : This function is contained within the Pattern Recognition set of indicators.
ADDITIONAL INFO	High Wave Signal: Indecision Pattern: Reversal Reliability: Medium Identification: High Wave is a type of candlestick characterized with either a very long upper or a lower shadow. It has only a short real body. A group of these patterns may signal a market turn.
EXAMPLE	CdlHighwave(open, high, low, close)

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1.2.57 CdlHikkake (0)

CDLHIKKAKE

Hikkake Pattern

Candlestick Pattern

SYNTAX **CdlHikkake()**

RETURNS NUMERIC ARRAY

DESCRIPTION Hikkake Pattern

ADDITIONAL
INFO

EXAMPLE CdlHikkake()

1.2.58 CdlHikkake (1)

CDLHIKKAKE
Hikkake Pattern

Candlestick Pattern

SYNTAX **CdlHikkake(ARRAY open, ARRAY high, ARRAY low, ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Hikkake Pattern

ADDITIONAL
INFO

EXAMPLE CdlHikkake(open, high, low, close)

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1.2.59 CdlHikkakemod (0)

CDLHIKKAKEMOD
Modified Hikkake Pattern

Candlestick Pattern

SYNTAX	CdlHikkakemod()
RETURNS	NUMERIC ARRAY
DESCRIPTION	Modified Hikkake Pattern
ADDITIONAL INFO	
EXAMPLE	CdlHikkakemod()

1.2.60 CdlHikkakemod (1)

CDLHIKKAKEMOD
Modified Hikkake Pattern

Candlestick Pattern

SYNTAX **CdlHikkakemod(ARRAY open, ARRAY high, ARRAY low, ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Modified Hikkake Pattern

ADDITIONAL
INFO

EXAMPLE CdlHikkakemod(open, high, low, close)

1.2.61 CdlHomingpigeon (0)

CDLHOMINGPIGEON
Homing Pigeon

Candlestick Pattern

SYNTAX	CdlHomingpigeon()
RETURNS	NUMERIC ARRAY
DESCRIPTION	Homing Pigeon, The Homing Pigeon is the same as the Harami, except for the colour of the second day's body.
ADDITIONAL INFO	Homing Pigeon bullish Signal: Bullish Pattern: reversal Reliability: moderate Identification A long black day is followed by another black day which gaps opposite the trend and is completely engulfed by the real body of the first day.
EXAMPLE	CdlHomingpigeon()

1.2.62 CdlHomingpigeon (1)

CDLHOMINGPIGEON
Homing Pigeon

Candlestick Pattern

SYNTAX	CdlHomingpigeon(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Homing Pigeon, The Homing Pigeon is the same as the Harami, except for the colour of the second day's body.
ADDITIONAL INFO	Homing Pigeon bullish Signal: Bullish Pattern: reversal Reliability: moderate Identification A long black day is followed by another black day which gaps opposite the trend and is completely engulfed by the real body of the first day.
EXAMPLE	CdlHomingpigeon(open, high, low, close)

1.2.63 CdlIdentical3crows (0)

CDLIDENTICAL3CROWS

Candlestick Pattern

Identical Three Crows

SYNTAX **CdlIdentical3crows()**

RETURNS NUMERIC ARRAY

DESCRIPTION Identical Three Crows, The Three Identical Crows have the same criteria as the Three Black Crows.

ADDITIONAL Identical Three Crows Bearish
INFO Signal: Bearish
 Pattern: reversal
 Reliability: high
 Identification
 Three black days with each day opening where the previous day closed.

EXAMPLE CdlIdentical3crows()

1.2.64 CdlIdentical3crows (1)

CDLIDENTICAL3CROWS

Candlestick Pattern

Identical Three Crows

SYNTAX	CdlIdentical3crows(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Identical Three Crows, The Three Identical Crows have the same criteria as the Three Black Crows.
ADDITIONAL INFO	Identical Three Crows Bearish Signal: Bearish Pattern: reversal Reliability: high Identification Three black days with each day opening where the previous day closed.
EXAMPLE	CdlIdentical3crows(open, high, low, close)

1.2.65 CdlInneck (0)

CDLINNECK
In-Neck Pattern

Candlestick Pattern

SYNTAX	CdlInneck()
RETURNS	NUMERIC ARRAY
DESCRIPTION	In-Neck Pattern, The In Neck pattern is almost a Meeting Line pattern.
ADDITIONAL INFO	In Neck Bearish Signal: Bearish Pattern: continuation Reliability: moderate Identification A long black day is followed by a long white day that gaps down at the open and closes at the same price as the black day.
EXAMPLE	CdlInneck()

1.2.66 CdlInneck (1)

CDLINNECK
In-Neck Pattern

Candlestick Pattern

SYNTAX	CdlInneck(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	In-Neck Pattern, The In Neck pattern is almost a Meeting Line pattern.
ADDITIONAL INFO	In Neck Bearish Signal: Bearish Pattern: continuation Reliability: moderate Identification A long black day is followed by a long white day that gaps down at the open and closes at the same price as the black day.
EXAMPLE	CdlInneck(open, high, low, close)

1.2.67 CdlInvertedhammer (0)

CDLINVERTEDHAMMER

Candlestick Pattern

Inverted Hammer

SYNTAX **CdlInvertedhammer()**

RETURNS NUMERIC ARRAY

DESCRIPTION Inverted Hammer, The Inverted Hammer is comprised of one candle.

ADDITIONAL Inverted Hammer Bullish

INFO Signal: Bullish

Pattern: reversal

Reliability: low/moderate

Identification

A small real body forms at the lower end of the trading range. The upper shadow is usually no more than twice as long as the real body and there is no or almost no lower shadow.

EXAMPLE CdlInvertedhammer()

1.2.68 CdlInvertedhammer (1)

CDLINVERTEDHAMMER

Candlestick Pattern

Inverted Hammer

SYNTAX	CdlInvertedhammer(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Inverted Hammer, The Inverted Hammer is comprised of one candle.
ADDITIONAL INFO	Inverted Hammer Bullish Signal: Bullish Pattern: reversal Reliability: low/moderate Identification A small real body forms at the lower end of the trading range. The upper shadow is usually no more than twice as long as the real body and there is no or almost no lower shadow.
EXAMPLE	CdlInvertedhammer(open, high, low, close)

1.2.69 CdlKicking (0)

CDLKICKING
Kicking

Candlestick Pattern

SYNTAX **CdlKicking()**

RETURNS NUMERIC ARRAY

DESCRIPTION Kicking, The Kicker signal is the most powerful signal of all.

ADDITIONAL Kicking Bearish
INFO Signal: Bearish
 Pattern: reversal
 Reliability: high
 Identification
 A White Marubuzo (opens at low and closes at high) is followed by a Black
 Marubuzo (opens at high and closes at low) that gaps down.
 Kicking Bullish
 Signal: Bullish
 Pattern: reversal
 Reliability: high
 Identification:
 A Black Marubuzo (open is the high of the day and the close is the low of the
 day) day is followed by a White Marubuzo (open is the low of the day and the
 close is the high of the day) day that gaps in the opposite direction.

EXAMPLE CdlKicking()

1.2.70 CdlKicking (1)

CDLKICKING
Kicking

Candlestick Pattern

SYNTAX	CdlKicking(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Kicking, The Kicker signal is the most powerful signal of all.
ADDITIONAL INFO	Kicking Bearish Signal: Bearish Pattern: reversal Reliability: high Identification A White Marubuzo (opens at low and closes at high) is followed by a Black Marubuzo (opens at high and closes at low) that gaps down. Kicking Bullish Signal: Bullish Pattern: reversal Reliability: high Identification: A Black Marubuzo (open is the high of the day and the close is the low of the day) day is followed by a White Marubuzo (open is the low of the day and the close is the high of the day) day that gaps in the opposite direction.
EXAMPLE	CdlKicking(open, high, low, close)

1.2.71 CdlKickingbylength (0)

CDLKICKINGBYLENGTH

Candlestick Pattern

Kicking - bull/bear

SYNTAX **CdlKickingbylength()**

RETURNS NUMERIC ARRAY

DESCRIPTION Kicking - bull/bear determined by the longer marubozu, The Kicker signal is the most powerful signal of all.

ADDITIONAL
INFO

EXAMPLE CdlKickingbylength()

1.2.72 CdlKickingbylength (1)

CDLKICKINGBYLENGTH

Candlestick Pattern

Kicking - bull/bear

SYNTAX **CdlKickingbylength(ARRAY open, ARRAY high, ARRAY low, ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Kicking - bull/bear determined by the longer marubozu, The Kicker signal is the most powerful signal of all.

ADDITIONAL
INFO

EXAMPLE CdlKickingbylength(open, high, low, close)

1.2.73 CdlLadderbottom (0)

CDLLADDERBOTTOM

Candlestick Pattern

Ladder Bottom

SYNTAX **CdlLadderbottom()**

RETURNS NUMERIC ARRAY

DESCRIPTION Ladder Bottom, The downtrend is finishing with four consecutive black candles, each closing lower than the previous day.

ADDITIONAL Ladder Bottom Bullish
INFO Signal: Bullish

Pattern: reversal

Reliability: moderate

Identification

Three black days with successive lower opens and lower closes. Then a black day forms with some noticeably upper shadow. The final day is a white day that gaps against the trend and opens above the body of the fourth day.

EXAMPLE CdlLadderbottom()

1.2.74 CdlLadderbottom (1)

CDLLADDERBOTTOM

Candlestick Pattern

Ladder Bottom

SYNTAX	CdlLadderbottom(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Ladder Bottom, The downtrend is finishing with four consecutive black candles, each closing lower than the previous day.
ADDITIONAL INFO	Ladder Bottom Bullish Signal: Bullish Pattern: reversal Reliability: moderate Identification Three black days with successive lower opens and lower closes. Then a black day forms with some noticeably upper shadow. The final day is a white day that gaps against the trend and opens above the body of the fourth day.
EXAMPLE	CdlLadderbottom(open, high, low, close)

1.2.75 CdlLongleggeddoji (0)

CDLLONGLEGGEDDOJI

Candlestick Pattern

Long Legged Doji

SYNTAX **CdlLongleggeddoji()**

RETURNS NUMERIC ARRAY

DESCRIPTION Long Legged Doji, The Long-legged Doji is composed of long upper and lower shadows.

ADDITIONAL INFO Long Legged Doji
Signal: Indecision
Pattern: Reversal
Reliability: Medium
Identification:
Long Legged Doji is characterized by very long shadows. It is an important reversal signal.
Bullish Long Legged Doji
Signal: Bullish
Pattern: Reversal
Reliability: Medium
Identification:
Long Legged Doji is a doji characterized with very long shadows. It shows the indecision of the buyers and sellers. It is one of the important reversal signals.
Bearish Long Legged Doji
Signal: Bearish
Pattern: Reversal
Reliability: Medium
Identification:
Long Legged Doji is a doji characterized by very long shadows. It shows the indecision of the buyers and sellers and it is an important reversal signal.

EXAMPLE CdlLongleggeddoji()

1.2.76 CdlLongleggeddoji (1)

CDLLONGLEGGEDDOJI

Candlestick Pattern

Long Legged Doji

SYNTAX	CdlLongleggeddoji(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Long Legged Doji, The Long-legged Doji is composed of long upper and lower shadows.
ADDITIONAL INFO	Long Legged Doji Signal: Indecision Pattern: Reversal Reliability: Medium Identification: Long Legged Doji is characterized by very long shadows. It is an important reversal signal. Bullish Long Legged Doji Signal: Bullish Pattern: Reversal Reliability: Medium Identification: Long Legged Doji is a doji characterized with very long shadows. It shows the indecision of the buyers and sellers. It is one of the important reversal signals. Bearish Long Legged Doji Signal: Bearish Pattern: Reversal Reliability: Medium Identification: Long Legged Doji is a doji characterized by very long shadows. It shows the indecision of the buyers and sellers and it is an important reversal signal.
EXAMPLE	CdlLongleggeddoji(open, high, low, close)

1.2.77 CdlLongline (0)

CDLLONGLINE
Long Line Candle

Candlestick Pattern

SYNTAX **CdlLongline()**

RETURNS NUMERIC ARRAY

DESCRIPTION Long Line Candle, A long day (LONGLINE) represents a large price move from open to close.

ADDITIONAL Long Line Candle
INFO Signal: Indecision
 Pattern: Reversal
 Reliability: Low
 Identification:
 A long day (Long Line Candle) represents a large price move from open to close.

EXAMPLE CdlLongline()

1.2.78 CdlLongline (1)

CDLLONGLINE
Long Line Candle

Candlestick Pattern

SYNTAX	CdlLongline(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Long Line Candle, A long day (LONGLINE) represents a large price move from open to close.
ADDITIONAL INFO	Long Line Candle Signal: Indecision Pattern: Reversal Reliability: Low Identification: A long day (Long Line Candle) represents a large price move from open to close.
EXAMPLE	CdlLongline(open, high, low, close)

1.2.79 CdlMarubozu (0)

CDLMARUBOZU

Candlestick Pattern

Marubozu

SYNTAX **CdlMarubozu()**

RETURNS NUMERIC ARRAY

DESCRIPTION Marubozu, in Japanese, Marubozu means close cropped or close-cut.

ADDITIONAL INFO

Black Marubozu
Signal: Bearish
Pattern: Reversal/Continuation
Reliability: Low
Identification:
The Black Marubozu is a single candlestick pattern characterized by a long black body. It does not have any shadows on either end. It is an extremely strong bearish candlestick pattern.

White Marubozu
Signal: Bullish
Pattern: Reversal/Continuation
Reliability: Low
Identification:
The White Marubozu is a single candlestick pattern characterized with a long white body having no shadows on either end. It is an extremely strong bullish candlestick pattern.

EXAMPLE CdlMarubozu()

1.2.80 CdlMarubozu (1)

CDLMARUBOZU
Marubozu

Candlestick Pattern

SYNTAX **CdlMarubozu(ARRAY open, ARRAY high, ARRAY low, ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Marubozu, in Japanese, Marubozu means close cropped or close-cut.

ADDITIONAL INFO Black Marubozu
Signal: Bearish
Pattern: Reversal/Continuation
Reliability: Low
Identification:
The Black Marubozu is a single candlestick pattern characterized by a long black body. It does not have any shadows on either end. It is an extremely strong bearish candlestick pattern.
White Marubozu
Signal: Bullish
Pattern: Reversal/Continuation
Reliability: Low
Identification:
The White Marubozu is a single candlestick pattern characterized with a long white body having no shadows on either end. It is an extremely strong bullish candlestick pattern.

EXAMPLE CdlMarubozu(open, high, low, close)

1.2.81 CdlMatchinglow (0)

CDLMATCHINGLOW
Matching Low

Candlestick Pattern

SYNTAX **CdlMatchinglow()**

RETURNS NUMERIC ARRAY

DESCRIPTION Matching Low, The Matching Low pattern is similar to the Homing Pigeon patten, the exception being that the two days of the pattern close on their lows, at the same level.

ADDITIONAL Matching Low Bullish
INFO Signal: Bullish
 Pattern: reversal
 Reliability: high
 Identification
 A long black day is followed by another black day with equivalent closes both days.

EXAMPLE CdlMatchinglow()

1.2.82 CdlMatchinglow (1)

CDLMATCHINGLOW
Matching Low

Candlestick Pattern

SYNTAX	CdlMatchinglow(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Matching Low, The Matching Low pattern is similar to the Homing Pigeon patter, the exception being that the two days of the pattern close on their lows, at the same level.
ADDITIONAL INFO	Matching Low Bullish Signal: Bullish Pattern: reversal Reliability: high Identification A long black day is followed by another black day with equivalent closes both days.
EXAMPLE	CdlMatchinglow(open, high, low, close)

1.2.83 CdlMathold (0)

CDLMATHOLD

Candlestick Pattern

Mat Hold

SYNTAX **CdlMathold(ARRAY penetration)**

RETURNS NUMERIC ARRAY

DESCRIPTION Mat Hold, The pattern appears during an uptrend, which is further confirmed by the first long white candlestick.

ADDITIONAL INFO Mat Hold Bullish
Signal: Bullish
Pattern: continuation
Reliability: high
Identification
A long white day in an uptrend is followed by a relatively small black day that gaps in the direction of the trend. The next two days continue the brief pullback and are small days that stay within the range of the first day. The fifth day is a long white day that closes above the close of the first day and continues the uptrend.

EXAMPLE CdlMathold(14)

1.2.84 CdlMathold (1)

CDLMATHOLD
Mat Hold

Candlestick Pattern

SYNTAX	CdlMathold(ARRAY open, ARRAY high, ARRAY low, ARRAY close, ARRAY penetration)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Mat Hold, The pattern appears during an uptrend, which is further confirmed by the first long white candlestick.
ADDITIONAL INFO	Mat Hold Bullish Signal: Bullish Pattern: continuation Reliability: high Identification A long white day in an uptrend is followed by a relatively small black day that gaps in the direction of the trend. The next two days continue the brief pullback and are small days that stay within the range of the first day. The fifth day is a long white day that closes above the close of the first day and continues the uptrend.
EXAMPLE	CdlMathold(open, high, low, close, 14)

1.2.85 CdlMorningdojistar (0)

CDLMORNINGDOJISTAR

Candlestick Pattern

Morning Doji Star

SYNTAX	CdlMorningdojistar(ARRAY penetration)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Morning Doji Star, A three day bullish reversal pattern that is very similar to the Morning Star.
ADDITIONAL INFO	Morning Doji Star Bullish Signal: Bullish Pattern: reversal Reliability: high Identification A long black day is followed by a Doji that gaps in the direction of the trend. The third day is a white day which closes in the top half of the black day.
EXAMPLE	CdlMorningdojistar(14)

1.2.86 CdlMorningdojistar (1)

CDLMORNINGDOJISTAR

Candlestick Pattern

Morning Doji Star

SYNTAX	CdlMorningdojistar(ARRAY open, ARRAY high, ARRAY low, ARRAY close, ARRAY penetration)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Morning Doji Star, A three day bullish reversal pattern that is very similar to the Morning Star.
ADDITIONAL INFO	Morning Doji Star Bullish Signal: Bullish Pattern: reversal Reliability: high Identification A long black day is followed by a Doji that gaps in the direction of the trend. The third day is a white day which closes in the top half of the black day.
EXAMPLE	CdlMorningdojistar(open, high, low, close, 14)

1.2.87 CdlMorningstar (0)

CDLMORNINGSTAR
Morning Star

Candlestick Pattern

SYNTAX	CdlMorningstar(ARRAY penetration)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Morning Star, The Morning Star is a bottom reversal signal.
ADDITIONAL INFO	Morning Star Bullish Signal: Bullish Pattern: reversal Reliability: high Identification A long black day is followed by a small day that gaps in the direction of the trend. The third day is a white day which closes in the top half of the black day.
EXAMPLE	CdlMorningstar(14)

1.2.88 CdlMorningstar (1)

CDLMORNINGSTAR

Candlestick Pattern

Morning Star

SYNTAX	CdlMorningstar(ARRAY open, ARRAY high, ARRAY low, ARRAY close, ARRAY penetration)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Morning Star, The Morning Star is a bottom reversal signal.
ADDITIONAL INFO	Morning Star Bullish Signal: Bullish Pattern: reversal Reliability: high Identification A long black day is followed by a small day that gaps in the direction of the trend. The third day is a white day which closes in the top half of the black day.
EXAMPLE	CdlMorningstar(open, high, low, close, 14)

1.2.89 CdlOnneck (0)

CDLONNECK
On-Neck Pattern

Candlestick Pattern

SYNTAX **CdlOnneck()**

RETURNS NUMERIC ARRAY

DESCRIPTION On-Neck Pattern, The On Neck Line pattern is almost a 'meeting line pattern', but the critical term is 'almost'.

ADDITIONAL On Neck Bearish
INFO Signal: Bearish
Pattern: continuation
Reliability: moderate
Identification
A long black day is followed by a long white day that gaps down at the open and closes below the close of the black day.

EXAMPLE CdlOnneck()

1.2.90 CdlOnneck (1)

CDLONNECK
On-Neck Pattern

Candlestick Pattern

SYNTAX	CdlOnneck(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	On-Neck Pattern, The On Neck Line pattern is almost a 'meeting line pattern', but the critical term is 'almost'.
ADDITIONAL INFO	On Neck Bearish Signal: Bearish Pattern: continuation Reliability: moderate Identification A long black day is followed by a long white day that gaps down at the open and closes below the close of the black day.
EXAMPLE	CdlOnneck(open, high, low, close)

1.2.91 CdlPiercing (0)

CDLPIERCING
Piercing Pattern

Candlestick Pattern

SYNTAX **CdlPiercing()**

RETURNS NUMERIC ARRAY

DESCRIPTION Piercing Pattern, The Piercing Pattern is composed of a two-candle formation in a down trending market.

ADDITIONAL
INFO Piercing Line Bullish
Signal: Bullish
Pattern: reversal
Reliability: moderate
Identification
A long black day is followed by a white day that gaps below the black day's low and closes within and above the midpoint of the black day's body.

EXAMPLE CdlPiercing()

1.2.92 CdlPiercing (1)

CDLPIERCING
Piercing Pattern

Candlestick Pattern

SYNTAX	CdlPiercing(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Piercing Pattern, The Piercing Pattern is composed of a two-candle formation in a down trending market.
ADDITIONAL INFO	Piercing Line Bullish Signal: Bullish Pattern: reversal Reliability: moderate Identification A long black day is followed by a white day that gaps below the black day's low and closes within and above the midpoint of the black day's body.
EXAMPLE	CdlPiercing(open, high, low, close)

1.2.93 CdlRickshawman (0)

CDLRICKSHAWMAN

Rickshaw Man

Candlestick Pattern

SYNTAX **CdlRickshawman()**

RETURNS NUMERIC ARRAY

DESCRIPTION Rickshaw Man, Rickshaw man is a specific type of long-legged doji where the open and close are in the middle of the price range.

ADDITIONAL Rickshaw Man
INFO Signal: Indecision
Pattern: Reversal
Reliability: Medium
Identification:
Rickshaw man is a specific type of long-legged doji where the open and close are in the middle of the price range.

EXAMPLE CdlRickshawman()

1.2.94 CdlRickshawman (1)

CDLRICKSHAWMAN

Candlestick Pattern

Rickshaw Man

SYNTAX	CdlRickshawman(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Rickshaw Man, Rickshaw man is a specific type of long-legged doji where the open and close are in the middle of the price range.
ADDITIONAL INFO	Rickshaw Man Signal: Indecision Pattern: Reversal Reliability: Medium Identification: Rickshaw man is a specific type of long-legged doji where the open and close are in the middle of the price range.
EXAMPLE	CdlRickshawman(open, high, low, close)

1.2.95 CdlRisefall3methods (0)

CDLRISEFALL3METHODS

Candlestick Pattern

Rising/Falling Three Methods

SYNTAX **CdlRisefall3methods()**

RETURNS NUMERIC ARRAY

DESCRIPTION Rising/Falling Three Methods, The Falling Three Method is basically the opposite of the Rising Three Method, The market has been in a downtrend.

ADDITIONAL INFO Rising Three Methods Bullish
Signal: Bullish
Pattern: continuation
Reliability: high
Identification
A long white day in an uptrend is followed by three relatively small candles that move opposite the overall trend but stay within the range of the first day. The fifth day is a long white day that closes above the close of the first day and continues the uptrend.
Fallling Three Methods Bearish
Signal: Bearish
Pattern: continuation
Reliability: high
Identification
A long black day in a downtrend is followed by three relatively small candles that move opposite the overall trend but stay within the range of the first day. The fifth day is a long black day that closes below the close of the first day and continues the downtrend.

EXAMPLE CdlRisefall3methods()

1.2.96 CdlRisefall3methods (1)

CDLRISEFALL3METHODS

Candlestick Pattern

Rising/Falling Three Methods

SYNTAX	CdlRisefall3methods(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Rising/Falling Three Methods, The Falling Three Method is basically the opposite of the Rising Three Method, The market has been in a downtrend.
ADDITIONAL INFO	Rising Three Methods Bullish Signal: Bullish Pattern: continuation Reliability: high Identification A long white day in an uptrend is followed by three relatively small candles that move opposite the overall trend but stay within the range of the first day. The fifth day is a long white day that closes above the close of the first day and continues the uptrend. Falling Three Methods Bearish Signal: Bearish Pattern: continuation Reliability: high Identification A long black day in a downtrend is followed by three relatively small candles that move opposite the overall trend but stay within the range of the first day. The fifth day is a long black day that closes below the close of the first day and continues the downtrend.
EXAMPLE	CdlRisefall3methods(open, high, low, close)

1.2.97 CdlSeparatinglines (0)

CDLSEPARATINGLINES
Separating Lines

Candlestick Pattern

SYNTAX **CdlSeparatinglines()**

RETURNS NUMERIC ARRAY

DESCRIPTION Separating Lines, You can identify it from the following points: The first day is a long white candle.

ADDITIONAL INFO Separating Lines Bullish
Signal: Bullish
Pattern: continuation
Reliability: low
Identification
A black day is followed by a white day that has the same opening price.
Separating Lines Bearish
Signal: Bearish
Pattern: continuation
Reliability: low
Identification
A white day is followed by a black day that has the same opening price.

EXAMPLE CdlSeparatinglines()

1.2.98 CdlSeparatinglines (1)

CDLSEPARATINGLINES

Candlestick Pattern

Separating Lines

SYNTAX	CdlSeparatinglines(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Separating Lines, You can identify it from the following points: The first day is a long white candle.
ADDITIONAL INFO	Separating Lines Bullish Signal: Bullish Pattern: continuation Reliability: low Identification A black day is followed by a white day that has the same opening price. Separating Lines Bearish Signal: Bearish Pattern: continuation Reliability: low Identification A white day is followed by a black day that has the same opening price.
EXAMPLE	CdlSeparatinglines(open, high, low, close)

1.2.99 CdlShootingstar (0)

CDLSHOOTINGSTAR

Candlestick Pattern

Shooting Star

SYNTAX **CdlShootingstar()**

RETURNS NUMERIC ARRAY

DESCRIPTION Shooting Star, The Shooting Star is comprised of one candle.

ADDITIONAL Shooting Star Bearish

INFO Signal: Bearish

Pattern: reversal

Reliability: low/moderate

Identification

A small body forms at the lower end of the trading range. The upper shadow is usually long while the lower shadow is small or almost nonexistent.

EXAMPLE CdlShootingstar()

1.2.100 CdlShootingstar (1)

CDLSHOOTINGSTAR

Candlestick Pattern

Shooting Star

SYNTAX	CdlShootingstar(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Shooting Star, The Shooting Star is comprised of one candle.
ADDITIONAL INFO	Shooting Star Bearish Signal: Bearish Pattern: reversal Reliability: low/moderate Identification A small body forms at the lower end of the trading range. The upper shadow is usually long while the lower shadow is small or almost nonexistent.
EXAMPLE	CdlShootingstar(open, high, low, close)

1.2.101 CdlShortline (0)

CDLSHORTLINE
Short Line Candle

Candlestick Pattern

SYNTAX **CdlShortline()**

RETURNS NUMERIC ARRAY

DESCRIPTION Short Line Candle, Short days (SHORTLINES) can be interpreted by the same analytical process of the long candles.

ADDITIONAL Short Line Candle
INFO Signal: Indecision
 Pattern: Reversal
 Reliability: Low
 Identification:
 Short days (Short Line Candle) represents a small price move from open to close.

EXAMPLE CdlShortline()

1.2.102 CdlShortline (1)

CDLSHORTLINE
Short Line Candle

Candlestick Pattern

SYNTAX	CdlShortline(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Short Line Candle, Short days (SHORTLINES) can be interpreted by the same analytical process of the long candles.
ADDITIONAL INFO	Short Line Candle Signal: Indecision Pattern: Reversal Reliability: Low Identification: Short days (Short Line Candle) represents a small price move from open to close.
EXAMPLE	CdlShortline(open, high, low, close)

1.2.103 CdlSpinningtop (0)

CDLSPINNINGTOP

Candlestick Pattern

Spinning Top

SYNTAX **CdlSpinningtop()**

RETURNS NUMERIC ARRAY

DESCRIPTION Spinning Top, spinning Tops are depicted with small bodies relative to the shadows.

ADDITIONAL INFO
White Spinning Top
Signal: Indecision
Pattern: Reversal/Continuation
Reliability: Low
Identification:
The White Spinning Top is a single candlestick pattern. Its shape is a small white body with upper and lower shadows that have a greater length than the body's length.
Black Spinning Top
Signal: Indecision
Pattern: Reversal/Continuation
Reliability: Low
Identification:
The Black Spinning Top is a single candlestick pattern. Its shape is a small black body with upper and lower shadows having a greater length than the body's length.

EXAMPLE CdlSpinningtop()

1.2.104 CdlSpinningtop (1)

CDLSPINNINGTOP
Spinning Top

Candlestick Pattern

SYNTAX	CdlSpinningtop(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Spinning Top, spinning Tops are depicted with small bodies relative to the shadows.
ADDITIONAL INFO	White Spinning Top Signal: Indecision Pattern: Reversal/Continuation Reliability: Low Identification: The White Spinning Top is a single candlestick pattern. Its shape is a small white body with upper and lower shadows that have a greater length than the body's length. Black Spinning Top Signal: Indecision Pattern: Reversal/Continuation Reliability: Low Identification: The Black Spinning Top is a single candlestick pattern. Its shape is a small black body with upper and lower shadows having a greater length than the body's length.
EXAMPLE	CdlSpinningtop(open, high, low, close)

1.2.105 CdlStalledpattern (0)

CDLSTALLEDPATTERN
Stalled Pattern

Candlestick Pattern

SYNTAX **CdlStalledpattern()**

RETURNS NUMERIC ARRAY

DESCRIPTION Stalled Pattern, Another pattern close to the Three White Soldiers pattern is the Stalled Pattern (commonly known as the Deliberation pattern).

ADDITIONAL Stalled Pattern or Deliberation pattern
INFO Signal: Bearish
 Pattern: Reversal
 Reliability: Medium
 Identification:
 The Bearish Deliberation Pattern is a derivative of the Bearish Three White Soldiers Pattern. This pattern also shows a weakness similar to the Bearish Advance Block Pattern since it becomes weaker in a short period of time. However here the weakness occurs all at once on the third day. The small third body of the pattern shows that the rally is losing strength and a reversal is possible.

EXAMPLE CdlStalledpattern()

1.2.106 CdlStalledpattern (1)

CDLSTALLEDPATTERN
Stalled Pattern

Candlestick Pattern

SYNTAX	CdlStalledpattern(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Stalled Pattern, Another pattern close to the Three White Soldiers pattern is the Stalled Pattern (commonly known as the Deliberation pattern).
ADDITIONAL INFO	Stalled Pattern or Deliberation pattern Signal: Bearish Pattern: Reversal Reliability: Medium Identification: The Bearish Deliberation Pattern is a derivative of the Bearish Three White Soldiers Pattern. This pattern also shows a weakness similar to the Bearish Advance Block Pattern since it becomes weaker in a short period of time. However here the weakness occurs all at once on the third day. The small third body of the pattern shows that the rally is losing strength and a reversal is possible.
EXAMPLE	CdlStalledpattern(open, high, low, close)

1.2.107 CdlSticksandwich (0)

CDLSTICKSANDWICH

Candlestick Pattern

Stick Sandwich

SYNTAX **CdlSticksandwich()**

RETURNS NUMERIC ARRAY

DESCRIPTION Stick Sandwich, The Stick Sandwich looks somewhat like an ice cream sandwich.

ADDITIONAL Bullish Stick Sandwich
INFO Signal: Bullish

Pattern: Reversal

Reliability: Medium

Identification:

The Bullish Stick Sandwich Pattern is characterized by consecutive higher opens for three days, but results in an eventual close equal to the first day's close. It may warn that prices are now finding a support price. We may then see a reversal from this support level.

EXAMPLE CdlSticksandwich()

1.2.108 CdlSticksandwich (1)

CDLSTICKSANDWICH

Candlestick Pattern

Stick Sandwich

SYNTAX	CdlSticksandwich(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Stick Sandwich, The Stick Sandwich looks somewhat like an ice cream sandwich.
ADDITIONAL INFO	Bullish Stick Sandwich Signal: Bullish Pattern: Reversal Reliability: Medium Identification: The Bullish Stick Sandwich Pattern is characterized by consecutive higher opens for three days, but results in an eventual close equal to the first day's close. It may warn that prices are now finding a support price. We may then see a reversal from this support level.
EXAMPLE	CdlSticksandwich(open, high, low, close)

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1.2.109 CdlTakuri (0)

CDLTAKURI
Takuri

Candlestick Pattern

SYNTAX **CdlTakuri()**

RETURNS NUMERIC ARRAY

DESCRIPTION Takuri (Dragonfly Doji with very long lower shadow) : This function is contained within the Pattern Recognition set of indicators.

ADDITIONAL Dragonfly Doji with very long lower shadow
INFO

EXAMPLE CdlTakuri()

1.2.110 CdlTakuri (1)

CDLTAKURI
Takuri

Candlestick Pattern

SYNTAX	CdlTakuri(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Takuri (Dragonfly Doji with very long lower shadow) : This function is contained within the Pattern Recognition set of indicators.
ADDITIONAL INFO	Dragonfly Doji with very long lower shadow
EXAMPLE	CdlTakuri(open, high, low, close)

1.2.111 CdlTasukigap (0)

CDLTASUKIGAP

Candlestick Pattern

Tasuki Gap

SYNTAX **CdlTasukigap()**

RETURNS NUMERIC ARRAY

DESCRIPTION Tasuki Gap, The Upside Tasuki Gap is found in a rising trend.

ADDITIONAL Downside Tasuki Gap Bearish

INFO Signal: Bearish

Pattern: continuation

Reliability: moderate

Identification

A long black day is followed by a second long black day that gaps in the direction of the trend. The third day is white and opens within the body of the second day and closes within the gap.

Upside Tasuki Gap Bullish

Signal: Bullish

Pattern: continuation

Reliability: moderate

Identification

A long white day is followed by a second long white day that gaps in the direction of the trend. The third day is black and opens within the body of the second day and closes within the gap.

EXAMPLE CdlTasukigap()

1.2.112 CdlTasukigap (1)

CDLTASUKIGAP

Candlestick Pattern

Tasuki Gap

SYNTAX **CdlTasukigap(ARRAY open, ARRAY high, ARRAY low, ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Tasuki Gap, The Upside Tasuki Gap is found in a rising trend.

ADDITIONAL Downside Tasuki Gap Bearish

INFO Signal: Bearish

Pattern: continuation

Reliability: moderate

Identification

A long black day is followed by a second long black day that gaps in the direction of the trend. The third day is white and opens within the body of the second day and closes within the gap.

Upside Tasuki Gap Bullish

Signal: Bullish

Pattern: continuation

Reliability: moderate

Identification

A long white day is followed by a second long white day that gaps in the direction of the trend. The third day is black and opens within the body of the second day and closes within the gap.

EXAMPLE CdlTasukigap(open, high, low, close)

1.2.113 CdlThrusting (0)

CDLTHRUSTING
Thrusting Pattern

Candlestick Pattern

SYNTAX	CdlThrusting()
RETURNS	NUMERIC ARRAY
DESCRIPTION	Thrusting Pattern, The Thrusting pattern is almost an 'On Neck' or an 'In Neck' pattern and resembles the Meeting Line pattern, also.
ADDITIONAL INFO	Thrusting Bearish Signal: Bearish Pattern: continuation Reliability: low Identification A black day is followed by a white day which gaps in the direction of the trend and closes below the midpoint of the black day.
EXAMPLE	CdlThrusting()

1.2.114 CdlThrusting (1)

CDLTHRUSTING
Thrusting Pattern

Candlestick Pattern

SYNTAX	CdlThrusting(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Thrusting Pattern, The Thrusting pattern is almost an 'On Neck' or an 'In Neck' pattern and resembles the Meeting Line pattern, also.
ADDITIONAL INFO	Thrusting Bearish Signal: Bearish Pattern: continuation Reliability: low Identification A black day is followed by a white day which gaps in the direction of the trend and closes below the midpoint of the black day.
EXAMPLE	CdlThrusting(open, high, low, close)

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1.2.115 CdlTristar (0)

CDLTRISTAR

Tristar Pattern

Candlestick Pattern

SYNTAX **CdlTristar()**

RETURNS NUMERIC ARRAY

DESCRIPTION Tristar Pattern, The Tri Star pattern is relatively rare.

ADDITIONAL
INFO

EXAMPLE CdlTristar()

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1.2.116 CdlTristar (1)

CDLTRISTAR

Tristar Pattern

Candlestick Pattern

SYNTAX **CdlTristar(ARRAY open, ARRAY high, ARRAY low, ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Tristar Pattern, The Tri Star pattern is relatively rare.

ADDITIONAL
INFO

EXAMPLE CdlTristar(open, high, low, close)

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1.2.117 CdlUnique3river (0)

CDLUNIQUE3RIVER

Unique 3 River

Candlestick Pattern

SYNTAX **CdlUnique3river()**

RETURNS NUMERIC ARRAY

DESCRIPTION Unique 3 River, The Unique Three River Bottom is a bullish pattern, somewhat characteristic of the Morning Star Pattern.

ADDITIONAL Unique Three River Bottom Bullish
INFO Signal: Bullish
 Pattern: reversal
 Reliability: moderate
 Identification
 The first day is a long black day, followed by a Homing Pigeon whose lower shadow makes a new low. The last day is small and white, and closes below the second day's close.

EXAMPLE CdlUnique3river()

1.2.118 CdlUnique3river (1)

CDLUNIQUE3RIVER

Candlestick Pattern

Unique 3 River

SYNTAX	CdlUnique3river(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Unique 3 River, The Unique Three River Bottom is a bullish pattern, somewhat characteristic of the Morning Star Pattern.
ADDITIONAL INFO	Unique Three River Bottom Bullish Signal: Bullish Pattern: reversal Reliability: moderate Identification The first day is a long black day, followed by a Homing Pigeon whose lower shadow makes a new low. The last day is small and white, and closes below the second day's close.
EXAMPLE	CdlUnique3river(open, high, low, close)

1.2.119 CdlUpsidegap2crows (0)

CDLUPSIDEGAP2CROWS

Candlestick Pattern

Upside Gap Two Crows

SYNTAX **CdlUpsidegap2crows()**

RETURNS NUMERIC ARRAY

DESCRIPTION Upside Gap Two Crows, The Upside Gap Two Crows is a three-day pattern.

ADDITIONAL Upside Gap Two Crows Bearish

INFO Signal: Bearish

Pattern: reversal

Reliability: high

Identification

A long white day is followed by a black candle which gaps in the direction of the trend. The final day engulfs the small black day and closes within the gap of the first two days.

EXAMPLE CdlUpsidegap2crows()

1.2.120 CdlUpsidegap2crows (1)

CDLUPSIDEGAP2CROWS

Candlestick Pattern

Upside Gap Two Crows

SYNTAX	CdlUpsidegap2crows(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Upside Gap Two Crows, The Upside Gap Two Crows is a three-day pattern.
ADDITIONAL INFO	Upside Gap Two Crows Bearish Signal: Bearish Pattern: reversal Reliability: high Identification A long white day is followed by a black candle which gaps in the direction of the trend. The final day engulfs the small black day and closes within the gap of the first two days.
EXAMPLE	CdlUpsidegap2crows(open, high, low, close)

1.2.121 CdlXsidegap3methods (0)

CDLXSIDEGAP3METHODS

Candlestick Pattern

Upside/Downside Gap Three Methods

SYNTAX **CdlXsidegap3methods()**

RETURNS NUMERIC ARRAY

DESCRIPTION Upside/Downside Gap Three Methods, the Bullish Upside Gap Three Methods Pattern, the market is in a strong bullish mood.

ADDITIONAL INFO Upside Gap Three Methods Bullish
Signal: Bullish
Pattern: continuation
Reliability: moderate
Identification
A long white day is followed by a second long white day that gaps in the direction of the trend. The third day is black and fills the gap between the first two days.
Downside Gap Three Methods Bearish
Signal: Bearish
Pattern: continuation
Reliability: moderate
Identification
A long black day is followed by a second long black day that gaps in the direction of the trend. The third day is white and fills the gap between the first two days.

EXAMPLE CdlXsidegap3methods()

1.2.122 CdlXsidegap3methods (1)

CDLXSIDEGAP3METHODS

Candlestick Pattern

Upside/Downside Gap Three Methods

SYNTAX	CdlXsidegap3methods(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Upside/Downside Gap Three Methods, the Bullish Upside Gap Three Methods Pattern, the market is in a strong bullish mood.
ADDITIONAL INFO	Upside Gap Three Methods Bullish Signal: Bullish Pattern: continuation Reliability: moderate Identification A long white day is followed by a second long white day that gaps in the direction of the trend. The third day is black and fills the gap between the first two days. Downside Gap Three Methods Bearish Signal: Bearish Pattern: continuation Reliability: moderate Identification A long black day is followed by a second long black day that gaps in the direction of the trend. The third day is white and fills the gap between the first two days.
EXAMPLE	CdlXsidegap3methods(open, high, low, close)

1.3 Charting

1.3.1 Plot1

PLOT1

Charting

Plot

SYNTAX **Plot1(ARRAY array one, ARRAY array two, ARRAY description1, ARRAY description2, ENUM fillcolor, ENUM graphonecolor, ENUM graphtwocolor, ENUM chart type, ENUM style)**

RETURNS

DESCRIPTION Plot two time-series

**ADDITIONAL
INFO**

EXAMPLE Plot1(BbandsUpper(14, 2, 2, _MaSma), BbandSlower(14, 2, 2, _MaSma), "BB UP", "BB LOW", colorRed|20|colorRed|20|0, colorTransparent, colorTransparent, chartLine, StyleSymbolNone)

[\[TOP\]](#)

1.3.2 Plot (0)

PLOT

Charting

Plot

SYNTAX **Plot(ARRAY array, ARRAY description, ENUM color, ENUM chart type, ENUM style)**

RETURNS

DESCRIPTION Plot a time-series

ADDITIONAL
INFO

EXAMPLE Plot(rsi(14), "RSI", colorBlack, chartLine, styleOwnScale)

[\[TOP\]](#)

1.3.3 Plot (1)

PLOT

Charting

Plot

SYNTAX **Plot(ARRAY array, ARRAY description, ENUM color, ENUM chart type)**

RETURNS

DESCRIPTION Plot a time-series

ADDITIONAL
INFO

EXAMPLE Plot(rsi(14), "RSI", colorBlack, chartLine)

[\[TOP\]](#)

1.3.4 Plot (2)

PLOT

Plot

Charting

SYNTAX **Plot(ARRAY array, ARRAY description, ENUM color)**

RETURNS

DESCRIPTION Plot a time-series

ADDITIONAL
INFO

EXAMPLE Plot(rsi(14), "RSI", colorBlack)

[\[TOP\]](#)

1.3.5 Plot (3)

PLOT

Plot

Charting

SYNTAX **Plot(ARRAY array, ARRAY description)**

RETURNS

DESCRIPTION Plot a time-series

ADDITIONAL
INFO

EXAMPLE Plot(rsi(14), "RSI")

[\[TOP\]](#)

1.3.6 PlotArrow

PLOTARROW

Charting

Plot Arrow

SYNTAX **PlotArrow(ARRAY array, ARRAY information, ENUM topbottom, ENUM color)**

RETURNS

DESCRIPTION Draw an arrow when the value of an element of the ARRAY is different from 0

**ADDITIONAL
INFO**

EXAMPLE PlotArrow(volume > 2 * sma(volume, 20), "B", AboveHigh, colorRed)

[\[TOP\]](#)

1.3.7 PlotCandleStick1

PLOT CandleStick1

Plot CandleStick

Charting

SYNTAX **PlotCandleStick1(ARRAY open, ARRAY high, ARRAY low, ARRAY close, ARRAY description, ENUM color, ENUM style)**

RETURNS

DESCRIPTION Plot a symbol quotes

ADDITIONAL
INFO

EXAMPLE PlotCandleStick1(open, high, low, close, "CandleStick", colorBlack, StyleSymbolNone)

[\[TOP\]](#)

1.3.8 PlotCandleStick

PLOT CandleStick

Plot CandleStick

Charting

SYNTAX **PlotCandleStick(ARRAY description, ENUM color, ENUM style)**

RETURNS

DESCRIPTION Plot a symbol quotes

ADDITIONAL
INFO

EXAMPLE PlotCandleStick("CandleStick", colorBlack, StyleSymbolNone)

1.3.9 PlotFixed

PLOTFIXED
Plot Fixed Graph

Charting

SYNTAX **PlotFixed(ARRAY xaxisdata, ARRAY yaxisdata, ARRAY yaxislabel, ENUM function, ARRAY description, ENUM color, ENUM chart type, ENUM style)**

RETURNS

DESCRIPTION Draw a fixed graph (see tutorial)

**ADDITIONAL
INFO**

EXAMPLE PlotFixed(iff(GapUp(), 1, iff(GapDown(), 2, 0)), 1, "", iCount, "Number of No Gaps - Gap Up - Gap Down", colorBlack, ChartBar, StyleSymbolNone)

1.3.10 PlotSymbol

LOTSYMBOL

Charting

Plot Symbol

SYNTAX **PlotSymbol(ARRAY array, ARRAY information, ARRAY factor, ARRAY margin, ENUM topbottom, ENUM border color, ENUM back color, ENUM plot symbol)**

RETURNS

DESCRIPTION Draw a symbol when the value of an element of the ARRAY is different from 0

**ADDITIONAL
INFO**

EXAMPLE PlotSymbol(volume > 2 * sma(volume, 20), "B", 1, 1, AboveHigh, colorBlack, colorBlack, PlotSymbolCircle)

[\[TOP\]](#)

1.3.11 Print

PRINT

Print To Output

Charting

SYNTAX **Print(ARRAY text)**

RETURNS

DESCRIPTION Set the outpout window so it display text depending on the selected date

ADDITIONAL
INFO

EXAMPLE Print("Hello")

[\[TOP\]](#)

1.3.12 PrintChart

PRINTCHART

Charting

Print Chart

SYNTAX **PrintChart(ARRAY string to print, ARRAY description, ENUM coordinate, ENUM color, ENUM border color, ENUM back color, ARRAY alpha)**

RETURNS

DESCRIPTION Draw a string

ADDITIONAL
INFO

EXAMPLE PrintChart("Close", "Close Price", TopLeft, colorRed, colorBlack, colorBlack, 255)

[\[TOP\]](#)

1.3.13 SetHatchBrush

SETHATCHBRUSH

Set Hatch Brush

Charting

SYNTAX **SetHatchBrush(STRING hatch brush style, ENUM color)**

RETURNS

DESCRIPTION Set a hatch brush for the last graph

ADDITIONAL
INFO

EXAMPLE SetHatchBrush("BackwardDiagonal", colorRed)

[\[TOP\]](#)

1.3.14 SetMaxScale

SETMAXSCALE

Set the maximum chart scale

Charting

SYNTAX **SetMaxScale(ARRAY max)**

RETURNS

DESCRIPTION Set maximum chart scale

ADDITIONAL
INFO

EXAMPLE SetMaxScale(100)

[\[TOP\]](#)

1.3.15 SetMinScale

SETMINSCALE

Set the minimum chart scale

Charting

SYNTAX **SetMinScale(ARRAY min)**

RETURNS

DESCRIPTION Set minimum chart scale

ADDITIONAL
INFO

EXAMPLE SetMinScale(0)

[\[TOP\]](#)

1.3.16 SetPercentScale

SETPERCENTSCALE

Charting

Update chart scale by a percentage

SYNTAX **SetPercentScale(ARRAY decrease minimum by, ARRAY increase maximum by)**

RETURNS

DESCRIPTION Set chart scale

ADDITIONAL
INFO

EXAMPLE SetPercentScale(0, 0)

[\[TOP\]](#)

1.3.17 SetScale

SETSCALE

Set the chart scale

Charting

SYNTAX **SetScale(ARRAY min, ARRAY max)**

RETURNS

DESCRIPTION Set chart scale

ADDITIONAL
INFO

EXAMPLE SetScale(0, 100)

[\[TOP\]](#)

1.3.18 UpdateColor

UPDATECOLOR

Update Last Graph Color

Charting

SYNTAX **UpdateColor(ARRAY condition, ENUM color)**

RETURNS

DESCRIPTION Set a different color to each bar or line

ADDITIONAL
INFO

EXAMPLE UpdateColor(volume > 0, colorGreen)

[\[TOP\]](#)

1.3.19 UpdatePrintSettings

UPDATEPRINTSETTINGS

Charting

Update Print Settings

SYNTAX **UpdatePrintSettings(STRING printchart settings, ARRAY rule, ARRAY value)**

RETURNS

DESCRIPTION Update the last PrintChart function

ADDITIONAL
INFO

EXAMPLE UpdatePrintSettings("PositionX", 1, 0)

[\[TOP\]](#)

1.3.20 UpdateSettings

UPDATESettings

Update Pane Settings

Charting

SYNTAX **UpdateSettings(STRING pane settings, ARRAY value)**

RETURNS

DESCRIPTION Update the current pane settings

ADDITIONAL
INFO

EXAMPLE UpdateSettings("Full Pane", 0)

[\[TOP\]](#)

1.4 Columns

1.4.1 AddColumn (0)

ADDCOLUMN

Add column

Columns

SYNTAX **AddColumn(ARRAY column name, ARRAY variable)**

RETURNS

DESCRIPTION Creates a numeric column for the screener or the watch-list

ADDITIONAL
INFO

EXAMPLE AddColumn("Column1", rsi(14))

[\[TOP\]](#)

1.4.2 AddColumn (1)

ADDCOLUMN

Add column

Columns

SYNTAX **AddColumn(ARRAY column name, ARRAY variable)**

RETURNS

DESCRIPTION Creates a text column for the screener or the watch-list

ADDITIONAL
INFO

EXAMPLE AddColumn("Column1", Market())

[\[TOP\]](#)

1.4.3 SetColumnColor

SETCOLUMNCOLOR

Columns

Update column color

SYNTAX **SetColumnColor(ARRAY condition, STRING color)**

RETURNS

DESCRIPTION Updates the color of the last column depending on the specified condition

ADDITIONAL
INFO

EXAMPLE SetColumnColor(close > open, "colorRed")

1.5 Composite

1.5.1 AddComposite

ADDCOMPOSITE

Composite

Add composite

SYNTAX **AddComposite(ARRAY composite name, ARRAY variable, ENUM composite calculation type)**

RETURNS

DESCRIPTION Calculates a composite and stores it. This composite value can be used with the Composite Script tool.

**ADDITIONAL
INFO**

EXAMPLE AddComposite("composite1", close > ref(close, 1), _CompAverage)

[\[TOP\]](#)

1.5.2 Comp (0)

COMP

Composite

Create a composite

SYNTAX **Comp(ARRAY array, ENUM calculation method)**

RETURNS NUMERIC ARRAY

DESCRIPTION Creates a composite and returns the composite vector

ADDITIONAL
INFO

EXAMPLE Comp(close, "avg")

[\[TOP\]](#)

1.5.3 Comp (1)

COMP

Composite

Create a composite

SYNTAX **Comp(ARRAY array, ENUM calculation method, ARRAY group)**

RETURNS NUMERIC ARRAY

DESCRIPTION Creates a composite for each group defined by the rule in the 'group' parameter.

ADDITIONAL
INFO

EXAMPLE Comp(close, "avg", states(close, 30|20|10))

[\[TOP\]](#)

1.5.4 Comp (2)

COMP

Composite

Create a composite

SYNTAX **Comp(ARRAY array, ENUM calculation method, ARRAY group, ARRAY filter)**

RETURNS NUMERIC ARRAY

DESCRIPTION Creates a composite for each group defined by the rule in the 'group' parameter. Use the 'filter' parameter to filter symbols included in the composite calculation.

ADDITIONAL
INFO

EXAMPLE Comp(close, "avg", states(close, 30|20|10), close > 2)

[\[TOP\]](#)

1.5.5 Comp (3)

COMP

Composite

Create a composite

SYNTAX	Comp(ARRAY array, ENUM calculation method, ARRAY group, ARRAY filter, ARRAY symbols filter)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Creates a composite for each group defined by the rule in the 'group' parameter. Use the 'filter' parameter to filter symbols included in the composite calculation. Add a 'symbols filter' to specify which symbols to include in the calculation of the composite.
ADDITIONAL INFO	
EXAMPLE	Comp(close, "avg", states(close, 30 20 10), close > 2, "symbols filter name")

[\[TOP\]](#)

1.6 Database

1.6.1 GetData (0)

GETDATA

Database Field

Database

SYNTAX **GetData(STRING database name, STRING field name)**

RETURNS NUMERIC ARRAY

DESCRIPTION Get a database field data

ADDITIONAL
INFO

EXAMPLE GetData("database name", "field name")

[\[TOP\]](#)

1.6.2 GetData (1)

GETDATA
Database Field

Database

SYNTAX **GetData(STRING database name, STRING field name, ENUM type)**

RETURNS NUMERIC ARRAY

DESCRIPTION Get a database field data

ADDITIONAL
INFO

EXAMPLE GetData("database name", "field name", LastData)

[\[TOP\]](#)

1.6.3 GetData (2)

GETDATA

Database

Database Field

SYNTAX **GetData(STRING database name, STRING field name, ENUM type, ARRAY symbol)**

RETURNS NUMERIC ARRAY

DESCRIPTION Get a database field data for an external symbol

ADDITIONAL
INFO

EXAMPLE GetData("database name", "field name", LastData, "GOOG")

[\[TOP\]](#)

1.6.4 GetDataCount (0)

GETDATACOUNT
Database Field Count

Database

SYNTAX **GetDataCount(STRING database name, STRING field name)**

RETURNS NUMERIC ARRAY

DESCRIPTION Get the number of database elements data for each bar

ADDITIONAL
INFO

EXAMPLE GetDataCount("database name", "field name")

[\[TOP\]](#)

1.6.5 GetDataCount (1)

GETDATACOUNT
Database Field Count

Database

SYNTAX	GetDataCount(STRING database name, STRING field name, ARRAY symbol)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Get the number of database elements data for each bar for an external symbol
ADDITIONAL INFO	
EXAMPLE	GetDataCount("database name", "field name", "GOOG")

[\[TOP\]](#)

1.6.6 GetDataCountInside

GETDATACOUNTINSIDE

Database

Database Field Index Count Inside

SYNTAX	GetDataCountInside(STRING database name, STRING field name, ARRAY low, ARRAY high, ENUM periodtype)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Get the number of database field elements for each bar and for the specified limits
ADDITIONAL INFO	
EXAMPLE	GetDataCountInside("database name", "field name", 0, 10, P_Hour)

[\[TOP\]](#)

1.6.7 GetDataExtern

GETDATAEXTERN

Database

Database field for a specified symbol

SYNTAX **GetDataExtern(STRING database name, STRING field name, ARRAY type: 0 for lastdata; 1 for zero; and 2 for na, ARRAY symbol)**

RETURNS NUMERIC ARRAY

DESCRIPTION Get a database field data for a specified symbol

ADDITIONAL
INFO

EXAMPLE GetDataExtern("Fundamental", "Mktcap", 0, "A")

[\[TOP\]](#)

1.6.8 GetDataIndex

GETDATAINDEX
Database Field Index

Database

SYNTAX	GetDataIndex(STRING database name, STRING field name, ARRAY index, ENUM type)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Get an array from a database field, index parameter specify the index of the data (When using for example intraday database with an historical timeframe)
ADDITIONAL INFO	
EXAMPLE	GetDataIndex("database_name", "field name", 0, LastData)

[\[TOP\]](#)

1.6.9 GetDataIndexDP

GETDATAINDEXDP

Database

Database Field Index Time

SYNTAX **GetDataIndexDP(STRING database name, STRING field name, ARRAY index, ENUM periodtype)**

RETURNS NUMERIC ARRAY

DESCRIPTION Get an array representing Year or month or day or hour... for each database field item, index parameter specify the index of the data (When using for example intraday database with an historical timeframe)

**ADDITIONAL
INFO**

EXAMPLE GetDataIndexDP("database name", "field name", 0, P_Hour)

1.6.10 GetDataInside

GETDATAINSIDE

Database

Database Field Index Inside

SYNTAX **GetDataInside(STRING database name, STRING field name, ARRAY low, ARRAY high, ENUM periodtype, ENUM type)**

RETURNS NUMERIC ARRAY

DESCRIPTION Get an array from a database field (Accept only values which date are inside the specified limits)

**ADDITIONAL
INFO**

EXAMPLE GetDataInside("database name", "field name", 0, 10, P_Hour, LastData)

[\[TOP\]](#)

1.6.11 GetDataStringCount (0)

GETDATASTRINGCOUNT

Database

Database Field Count

SYNTAX **GetDataStringCount(STRING database name, STRING field name, ARRAY regular expression)**

RETURNS NUMERIC ARRAY

DESCRIPTION Get the number of database field elements for each bar and using the provided pattern

ADDITIONAL
INFO

EXAMPLE GetDataStringCount("database name", "field name", "buy")

1.6.12 GetDataStringCount (1)

GETDATASTRINGCOUNT

Database

Database Field Count

SYNTAX	GetDataStringCount(STRING database name, STRING field name, ARRAY regular expression, ARRAY symbol)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Get the number of database field elements for each bar, using the provided pattern and for an external symbol
ADDITIONAL INFO	
EXAMPLE	GetDataStringCount("database name", "field name", "buy", "GOOG")

1.6.13 GetDataStringCountInside

GETDATASTRINGCOUNTINSIDE

Database

Database Field Index Count Inside

SYNTAX **GetDataStringCountInside(STRING database name, STRING field name, ARRAY low, ARRAY high, ENUM periodtype, ARRAY regular expression)**

RETURNS NUMERIC ARRAY

DESCRIPTION Get the number of database field elements for each bar, for the specified limits and using the provided pattern

**ADDITIONAL
INFO**

EXAMPLE GetDataStringCountInside("database name", "field name", 0, 10, P_Hour, "buy")

[\[TOP\]](#)

1.6.14 IsDataExists

ISDATAEXISTS

Database

Is Database Field Exists

SYNTAX **IsDataExists(STRING database name, STRING field name)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns 1 if the provided database field name exists, returns 0 otherwise

ADDITIONAL
INFO

EXAMPLE IsDataExists("database_name", "field name")

[\[TOP\]](#)

1.7 Date-Time

1.7.1 Year

YEAR

Year

Date-time

SYNTAX **Year()**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the current bar's year

ADDITIONAL
INFO

EXAMPLE Year()

1.7.2 Date

DATE

Date

Date-time

SYNTAX	Date()
RETURNS	TEXT ARRAY
DESCRIPTION	Returns the bar's Date
ADDITIONAL INFO	
EXAMPLE	Date()

[\[TOP\]](#)

1.7.3 DateTicks

DATETICKS

Date-time

Date Ticks

SYNTAX **DateTicks()**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of ticks that represent the current date and time

ADDITIONAL
INFO

EXAMPLE DateTicks()

1.7.4 Day

DAY
Day

Date-time

SYNTAX	Day()
RETURNS	NUMERIC ARRAY
DESCRIPTION	Returns the current bar's day of the month
ADDITIONAL INFO	
EXAMPLE	Day()

[\[TOP\]](#)

1.7.5 DayOfWeek

DAYOFWEEK

Day of Week

Date-time

SYNTAX **DayOfWeek()**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the current bar's day of week (1 for Monday, 2 for Tuesday, 3 for Wednesday...)

ADDITIONAL
INFO

EXAMPLE DayOfWeek()

[\[TOP\]](#)

1.7.6 DayOfYear

DAYOFYEAR

Day of Year

Date-time

SYNTAX **DayOfYear()**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the current bar's day of the year

ADDITIONAL
INFO

EXAMPLE DayOfYear()

1.7.7 Hour

HOURL
Hour

Date-time

SYNTAX	Hour()
RETURNS	NUMERIC ARRAY
DESCRIPTION	Returns the current bar's hour
ADDITIONAL INFO	
EXAMPLE	Hour()

[\[TOP\]](#)

1.7.8 Interval

INTERVAL

Interval in ticks

Date-time

SYNTAX **Interval()**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of ticks between the current and previous bar date

ADDITIONAL
INFO

EXAMPLE Interval()

[\[TOP\]](#)

1.7.9 Minute

MINUTE
Minute

Date-time

SYNTAX	Minute()
RETURNS	NUMERIC ARRAY
DESCRIPTION	Returns the current bar's minute
ADDITIONAL INFO	
EXAMPLE	Minute()

1.7.10 Month

MONTH

Month

Date-time

SYNTAX	Month()
RETURNS	NUMERIC ARRAY
DESCRIPTION	Returns the current bar's month
ADDITIONAL INFO	
EXAMPLE	Month()

[\[TOP\]](#)

1.7.11 NbDays

NBDAYS

Number of days

Date-time

SYNTAX **NbDays(ARRAY period)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of days between the current bar and the bar referenced by the period value

ADDITIONAL
INFO

EXAMPLE NbDays(5)

1.7.12 Now

NOW

Now

Date-time

SYNTAX	Now()
RETURNS	TEXT ARRAY
DESCRIPTION	Returns the current Date
ADDITIONAL INFO	
EXAMPLE	Now()

[\[TOP\]](#)

1.7.13 Second

SECOND
Second

Date-time

SYNTAX	Second()
RETURNS	NUMERIC ARRAY
DESCRIPTION	Returns the current bar's second
ADDITIONAL INFO	
EXAMPLE	Second()

[\[TOP\]](#)

1.7.14 TimeTicks

TIMETICKS

Time Ticks

Date-time

SYNTAX **TimeTicks()**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of ticks that represent the current time

ADDITIONAL
INFO

EXAMPLE TimeTicks()

1.7.15 Week

WEEK

Week

Date-time

SYNTAX	Week()
RETURNS	NUMERIC ARRAY
DESCRIPTION	Returns the current bar's week
ADDITIONAL INFO	
EXAMPLE	Week()

1.8 Divers

1.8.1 GetSeries (0)

GETSERIES

Divers

Get another symbol data

SYNTAX **GetSeries(ARRAY symbol, ENUM arrayname, ENUM type)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns an array (close, open, high, low, volume, open-interest) for the specified symbol

ADDITIONAL
INFO

EXAMPLE GetSeries("A", close, LastData)

1.8.2 GetSeries (1)

GETSERIES

Divers

Get another symbol data

SYNTAX **GetSeries(ARRAY symbol, ENUM arrayname)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns an array (close, open, high, low, volume, open-interest) for the specified symbol

ADDITIONAL
INFO

EXAMPLE GetSeries("A", close)

[\[TOP\]](#)

1.8.3 Output

OUTPUT

Output text

Divers

SYNTAX **Output(ARRAY text)**

RETURNS

DESCRIPTION Set outpout window text

ADDITIONAL
INFO

EXAMPLE Output("Hello")

[\[TOP\]](#)

1.8.4 OutputList

OUTPUTLIST

Output list

Divers

SYNTAX **OutputList(ARRAY text)**

RETURNS

DESCRIPTION Add a text to the outpout list window

ADDITIONAL
INFO

EXAMPLE OutputList("Hello")

[\[TOP\]](#)

1.8.5 States

STATES

Divers

States

SYNTAX **States(ARRAY array, ARRAY states (ex : 70|50|30))**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns an array containing different states.
Example: States(perf(close, 20), 10|0|-10)
Returns 0 if the array element value is lower then -10, returns 1 if the array
element value is between -10 and 0 and returns 2 if the array element value is
higher than 10

ADDITIONAL
INFO

EXAMPLE States(rsi(14), 70|50|30)

[\[TOP\]](#)

1.8.6 Ticker

TICKER

Get another symbol data

Divers

SYNTAX **Ticker(ARRAY symbol, ENUM arrayname, ENUM type)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns an array (close, open, high, low, volume, open-interest) for the specified symbol

ADDITIONAL
INFO

EXAMPLE Ticker("A", close, LastData)

[\[TOP\]](#)

1.8.7 Ticker1

TICKER1

Divers

Get time-series for a different time-frame

SYNTAX **Ticker1(ARRAY symbol, ARRAY timeframe, ENUM arrayname, ENUM type)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns an array (close, open, high, low, volume, open-interest) for the specified symbol and for the specified time-frame

ADDITIONAL
INFO

EXAMPLE Ticker1("A", 1, close, LastData)

1.9 Indicators

1.9.1 Ad (0)

AD

Indicators

Chaikin A/D Line

SYNTAX **Ad()**

RETURNS NUMERIC ARRAY

DESCRIPTION Chaikin A/D Line

ADDITIONAL
INFO The Accumulation/Distribution Line was developed by Marc Chaikin to assess the cumulative flow of money into and out of a security.
A bullish signal is given when the Accumulation/Distribution Line forms a positive divergence (for more than a month of data).
The opposite for a bearish signal.

EXAMPLE Ad()

1.9.2 Ad (1)

AD

Indicators

Chaikin A/D Line

SYNTAX	Ad(ARRAY high, ARRAY low, ARRAY close, ARRAY volume)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Chaikin A/D Line
ADDITIONAL INFO	The Accumulation/Distribution Line was developed by Marc Chaikin to assess the cumulative flow of money into and out of a security. A bullish signal is given when the Accumulation/Distribution Line forms a positive divergence (for more than a month of data). The opposite for a bearish signal.
EXAMPLE	Ad(high, low, close, volume)

1.9.3 AdOsc (0)

ADOSC

Chaikin A/D Oscillator

Indicators

SYNTAX	AdOsc(ARRAY fastperiod, ARRAY slowperiod)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Chaikin A/D Oscillator
ADDITIONAL INFO	The Chaikin Oscillator is the Moving Average Convergence Divergence indicator (MACD) applied to the Accumulation/Distribution Line. A bullish signal happen when the price action develops a lower low into oversold zones and the oscillator diverges with a higher low and begins to rise. A bearish signal happen when the price action develops a higher high into overbought zones and the oscillator diverges with a lower high and begins to fall.
EXAMPLE	AdOsc(3, 10)

1.9.4 AdOsc (1)

ADOSC

Chaikin A/D Oscillator

Indicators

SYNTAX	AdOsc(ARRAY high, ARRAY low, ARRAY close, ARRAY volume, ARRAY fastperiod, ARRAY slowperiod)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Chaikin A/D Oscillator
ADDITIONAL INFO	The Chaikin Oscillator is the Moving Average Convergence Divergence indicator (MACD) applied to the Accumulation/Distribution Line. A bullish signal happen when the price action develops a lower low into oversold zones and the oscillator diverges with a higher low and begins to rise. A bearish signal happen when the price action develops a higher high into overbought zones and the oscillator diverges with a lower high and begins to fall.
EXAMPLE	AdOsc(high, low, close, volume, 3, 10)

1.9.5 Adx (0)

ADX

Indicators

Average Directional Movement Index

SYNTAX **Adx(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Average Directional Movement Index

ADDITIONAL The ADX is a Welles Wilder style moving average of the Directional
INFO Movement Index (DX).
 To interpret the ADX, consider a high number to be a strong trend, and a low
 number, a weak trend.

EXAMPLE Adx(14)

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1.9.6 Adx (1)

ADX

Indicators

Average Directional Movement Index

SYNTAX **Adx(ARRAY high, ARRAY low, ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Average Directional Movement Index

ADDITIONAL The ADX is a Welles Wilder style moving average of the Directional
INFO Movement Index (DX).
To interpret the ADX, consider a high number to be a strong trend, and a low
number, a weak trend.

EXAMPLE Adx(high, low, close, 14)

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1.9.7 Adxr (0)

ADX

Indicators

Average Directional Movement Index Rating

SYNTAX **Adxr(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Average Directional Movement Index Rating

ADDITIONAL The ADXR is the average of the two ADX values.
INFO The ADXR smoothes the ADX, and is therefore less responsive, however, the
 ADXR filters out excessive tops and bottoms.
 High ADXR value is bullish while low values is bearish.

EXAMPLE Adxr(14)

1.9.8 Adxr (1)

ADXR

Indicators

Average Directional Movement Index Rating

SYNTAX	Adxr(ARRAY high, ARRAY low, ARRAY close, ARRAY timeperiod)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Average Directional Movement Index Rating
ADDITIONAL INFO	The ADXR is the average of the two ADX values. The ADXR smoothes the ADX, and is therefore less responsive, however, the ADXR filters out excessive tops and bottoms. High ADXR value is bullish while low values is bearish.
EXAMPLE	Adxr(high, low, close, 14)

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1.9.9 Apo (0)

APO

Indicators

Absolute Price Oscillator

SYNTAX	Apo(ARRAY fastperiod, ARRAY slowperiod, ENUM movingaveragetype)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Absolute Price Oscillator
ADDITIONAL INFO	The Price Oscillator shows the difference between two moving averages. The Price Oscillator can use any time periods, unlike MACD indicator. A buy signal is generate when the Price Oscillator rises above zero, and a sell signal when the it falls below zero.
EXAMPLE	Apo(3, 10, _MaSma)

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1.9.10 Apo (1)

APO

Indicators

Absolute Price Oscillator

SYNTAX	Apo(ARRAY high, ARRAY fastperiod, ARRAY slowperiod, ENUM movingaveragetype)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Absolute Price Oscillator
ADDITIONAL INFO	The Price Oscillator shows the difference between two moving averages. The Price Oscillator can use any time periods, unlike MACD indicator. A buy signal is generate when the Price Oscillator rises above zero, and a sell signal when the it falls below zero.
EXAMPLE	Apo(high, 3, 10, _MaSma)

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1.9.11 AroonDown (0)

AROONDOWN

Aroon Down

Indicators

SYNTAX **AroonDown(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Aroon Down

ADDITIONAL
INFO

EXAMPLE AroonDown(14)

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1.9.12 AroonDown (1)

AROONDOWN

Aroon Down

Indicators

SYNTAX **AroonDown(ARRAY high, ARRAY low, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Aroon Down

ADDITIONAL
INFO

EXAMPLE AroonDown(high, low, 14)

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1.9.13 AroonOsc (0)

AROONOSC
Aroon Oscillator

Indicators

SYNTAX **AroonOsc(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Aroon Oscillator

ADDITIONAL
INFO

EXAMPLE AroonOsc(14)

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1.9.14 AroonOsc (1)

AROONOSC
Aroon Oscillator

Indicators

SYNTAX **AroonOsc(ARRAY high, ARRAY low, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Aroon Oscillator

ADDITIONAL
INFO

EXAMPLE AroonOsc(high, low, 14)

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1.9.15 AroonUp (0)

AROONUP

Aroon Up

Indicators

SYNTAX **AroonUp(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Aroon Up

ADDITIONAL
INFO

EXAMPLE AroonUp(14)

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1.9.16 AroonUp (1)

AROONUP

Aroon Up

Indicators

SYNTAX **AroonUp(ARRAY high, ARRAY low, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Aroon Up

ADDITIONAL
INFO

EXAMPLE AroonUp(high, low, 14)

1.9.17 Atr (0)

ATR

Indicators

Average True Range

SYNTAX **Atr(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Average True Range

ADDITIONAL The ATR is a measure of volatility. High ATR values indicate high volatility,
INFO and low values indicate low volatility.

EXAMPLE Atr(14)

1.9.18 Atr (1)

ATR

Indicators

Average True Range

SYNTAX	Atr(ARRAY high, ARRAY low, ARRAY close, ARRAY timeperiod)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Average True Range
ADDITIONAL INFO	The ATR is a measure of volatility. High ATR values indicate high volatility, and low values indicate low volatility.
EXAMPLE	Atr(high, low, close, 14)

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1.9.19 AvgPrice (0)

AVGPRICE

Average Price

Indicators

SYNTAX	AvgPrice()
RETURNS	NUMERIC ARRAY
DESCRIPTION	Average Price
ADDITIONAL INFO	
EXAMPLE	AvgPrice()

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1.9.20 AvgPrice (1)

AVGPRICE
Average Price

Indicators

SYNTAX **AvgPrice(ARRAY open, ARRAY high, ARRAY low, ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Average Price

ADDITIONAL
INFO

EXAMPLE AvgPrice(open, high, low, close)

1.9.21 BbandsLower (0)

BBANDSLOWER

Indicators

Bollinger Bands (Lower band)

SYNTAX	BbandsLower(ARRAY timeperiod, ARRAY nbdevdown, ENUM movingaveragetype)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Bollinger Bands (Lower band)
ADDITIONAL INFO	Bollinger Bands are plotted at 2 standard deviations above and below a 20-day exponential moving average. As standard deviation is a measure of volatility, the bands are self-adjusting: widening during volatile markets and contracting during calmer periods. The price are considered "overbought" when they touch the upper band and "oversold" when they touch the lower band. Statisticly 95% of price data should fall between the two tranding bands. A way to use Bollinger Bands is to use the upper and lower bands as price targets. If prices bounce off the lower band and cross above the 20 day average, then the upper band becomes the upper price target. Bollinger Bands was created by John Bollinger.
EXAMPLE	BbandsLower(14, 2, _MaSma)

1.9.22 BbandsLower (1)

BBANDSLOWER

Indicators

Bollinger Bands (Lower band)

SYNTAX	BbandsLower(ARRAY close, ARRAY timeperiod, ARRAY nbdevdown, ENUM movingaveragetype)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Bollinger Bands (Lower band)
ADDITIONAL INFO	Bollinger Bands are plotted at 2 standard deviations above and below a 20-day exponential moving average. As standard deviation is a measure of volatility, the bands are self-adjusting: widening during volatile markets and contracting during calmer periods. The price are considered "overbought" when they touch the upper band and "oversold" when they touch the lower band. Statisticly 95% of price data should fall between the two tranding bands. A way to use Bollinger Bands is to use the upper and lower bands as price targets. If prices bounce off the lower band and cross above the 20 day average, then the upper band becomes the upper price target. Bollinger Bands was created by John Bollinger.
EXAMPLE	BbandsLower(close, 15, 2, _MaSma)

1.9.23 BbandsMiddle (0)

BBANDSMIDDLE

Indicators

Bollinger Bands (Middle band)

SYNTAX **BbandsMiddle(ARRAY timeperiod, ENUM movingaveragetype)**

RETURNS NUMERIC ARRAY

DESCRIPTION Bollinger Bands (Middle band)

ADDITIONAL Bollinger Bands are plotted at 2 standard deviations above and below a 20-day
INFO exponential moving average. As standard deviation is a measure of volatility,
the bands are self-adjusting: widening during volatile markets and contracting
during calmer periods.

The price are considered "overbought" when they touch the upper band and
"oversold" when they touch the lower band.

Statisticly 95% of price data should fall between the two tranding bands.

A way to use Bollinger Bands is to use the upper and lower bands as price
targets. If prices bounce off the lower band and cross above the 20 day average,
then the upper band becomes the upper price target.

Bollinger Bands was created by John Bollinger.

EXAMPLE BbandsMiddle(14, _MaSma)

1.9.24 BbandsMiddle (1)

BBANDSMIDDLE

Indicators

Bollinger Bands (Middle band)

SYNTAX **BbandsMiddle(ARRAY close, ARRAY timeperiod, ENUM movingaveragetype)**

RETURNS NUMERIC ARRAY

DESCRIPTION Bollinger Bands (Middle band)

ADDITIONAL INFO Bollinger Bands are plotted at 2 standard deviations above and below a 20-day exponential moving average. As standard deviation is a measure of volatility, the bands are self-adjusting: widening during volatile markets and contracting during calmer periods.
The price are considered "overbought" when they touch the upper band and "oversold" when they touch the lower band.
Statisticly 95% of price data should fall between the two tranding bands.
A way to use Bollinger Bands is to use the upper and lower bands as price targets. If prices bounce off the lower band and cross above the 20 day average, then the upper band becomes the upper price target.
Bollinger Bands was created by John Bollinger.

EXAMPLE BbandsMiddle(close, 15, _MaSma)

1.9.25 BbandsUpper (0)

BBANDSUPPER

Indicators

Bollinger Bands (Upper band)

SYNTAX **BbandsUpper(ARRAY timeperiod, ARRAY nbdevup, ENUM movingaveragetype)**

RETURNS NUMERIC ARRAY

DESCRIPTION Bollinger Bands (Upper band)

ADDITIONAL INFO Bollinger Bands are plotted at 2 standard deviations above and below a 20-day exponential moving average. As standard deviation is a measure of volatility, the bands are self-adjusting: widening during volatile markets and contracting during calmer periods.
The price are considered "overbought" when they touch the upper band and "oversold" when they touch the lower band.
Statisticly 95% of price data should fall between the two tranding bands.
A way to use Bollinger Bands is to use the upper and lower bands as price targets. If prices bounce off the lower band and cross above the 20 day average, then the upper band becomes the upper price target.
Bollinger Bands was created by John Bollinger.

EXAMPLE BbandsUpper(14, 2, _MaSma)

1.9.26 BbandsUpper (1)

BBANDSUPPER

Indicators

Bollinger Bands (Upper band)

SYNTAX	BbandsUpper(ARRAY close, ARRAY timeperiod, ARRAY nbdevup, ENUM movingaveragetype)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Bollinger Bands (Upper band)
ADDITIONAL INFO	Bollinger Bands are plotted at 2 standard deviations above and below a 20-day exponential moving average. As standard deviation is a measure of volatility, the bands are self-adjusting: widening during volatile markets and contracting during calmer periods. The price are considered "overbought" when they touch the upper band and "oversold" when they touch the lower band. Statisticly 95% of price data should fall between the two tranding bands. A way to use Bollinger Bands is to use the upper and lower bands as price targets. If prices bounce off the lower band and cross above the 20 day average, then the upper band becomes the upper price target. Bollinger Bands was created by John Bollinger.
EXAMPLE	BbandsUpper(close, 15, 2, _MaSma)

1.9.27 Bop (0)

BOP

Balance Of Power

Indicators

SYNTAX **Bop()**

RETURNS NUMERIC ARRAY

DESCRIPTION Balance Of Power

ADDITIONAL
INFO The Balance of Market Power is an oscillator and supports price divergence, trends, and overbought-oversold levels. It can also help to determine market trends.
This indicator measures the velocity of the price trend.

EXAMPLE Bop()

1.9.28 Bop (1)

BOP

Indicators

Balance Of Power

SYNTAX	Bop(ARRAY open, ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Balance Of Power
ADDITIONAL INFO	The Balance of Market Power is an oscillator and supports price divergence, trends, and overbought-oversold levels. It can also help to determine market trends. This indicator measures the velocity of the price trend.
EXAMPLE	Bop(open, high, low, close)

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1.9.29 Cci (0)

CCI

Commodity Channel Index

Indicators

SYNTAX **Cci(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Commodity Channel Index

ADDITIONAL The CCI is designed to detect beginning and ending market trends.
INFO A price correction is expected when CCI is above +100 (overbought) and a
 rally when it is below -100 (oversold).
 You can also look for price divergence in the CCI.

EXAMPLE Cci(14)

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1.9.30 Cci (1)

CCI

Indicators

Commodity Channel Index

SYNTAX	Cci(ARRAY high, ARRAY low, ARRAY close, ARRAY timeperiod)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Commodity Channel Index
ADDITIONAL INFO	The CCI is designed to detect beginning and ending market trends. A price correction is expected when CCI is above +100 (overbought) and a rally when it is below -100 (oversold). You can also look for price divergence in the CCI.
EXAMPLE	Cci(high, low, close, 14)

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1.9.31 Cmo (0)

CMO

Chande Momentum Oscillator

Indicators

SYNTAX **Cmo(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Chande Momentum Oscillator

ADDITIONAL The Chande Momentum Indicator is a momentum indicator which use
INFO information from both up and down days.
 Bullish when this indicator is below level -50 and bearish when it is above
 level +50.

EXAMPLE Cmo(14)

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1.9.32 Cmo (1)

CMO

Chande Momentum Oscillator

Indicators

SYNTAX	Cmo(ARRAY close, ARRAY timeperiod)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Chande Momentum Oscillator
ADDITIONAL INFO	The Chande Momentum Indicator is a momentum indicator which use information from both up and down days. Bullish when this indicator is below level -50 and bearish when it is above level +50.
EXAMPLE	Cmo(close, 14)

1.9.33 Correl (0)

CORREL

Indicators

Correlation Analysis

SYNTAX **Correl(ARRAY array, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Correlation Analysis

ADDITIONAL
INFO Correlation Analysis compares two array or two samples of data to show you if one sample of data can predict the other.
You can analyse coorelation between a stock against another stock or a stock against an indicator...
Coorrelation between an indicator and a stock.
A value above +0.7 tell you that a change in the indicator will usually predict a change in the security's price.
A value below -0.7 tell you that a change in the indicator will usually predict a move of the stock price in the opposite direction.
A value near 0 tell you that there is no relationship between the security's price and the indicator.

EXAMPLE Correl(close, 100)

1.9.34 Correl (1)

CORREL

Indicators

Correlation Analysis

SYNTAX **Correl(ARRAY array, ARRAY array, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Correlation Analysis

ADDITIONAL
INFO Correlation Analysis compares two array or two samples of data to show you if one sample of data can predict the other.
You can analyse coorelation between a stock against another stock or a stock against an indicator...
Coorrelation between an indicator and a stock.
A value above +0.7 tell you that a change in the indicator will usually predict a change in the security's price.
A value below -0.7 tell you that a change in the indicator will usually predict a move of the stock price in the opposite direction.
A value near 0 tell you that there is no relationship between the security's price and the indicator.

EXAMPLE Correl(close, 0, 100)

1.9.35 Dema (0)

DEMA

Indicators

Double Exponential Moving Average

SYNTAX **Dema(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Double Exponential Moving Average

ADDITIONAL The DEMA is a smoothing indicator with less lag than a straight exponential
INFO moving average. DEMA is an acronym for Double Exponential Moving
Average, but the calculation is more complex than just a moving average of a
moving average.

EXAMPLE Dema(14)

1.9.36 Dema (1)

DEMA

Indicators

Double Exponential Moving Average

SYNTAX **Dema(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Double Exponential Moving Average

ADDITIONAL The DEMA is a smoothing indicator with less lag than a straight exponential
INFO moving average. DEMA is an acronym for Double Exponential Moving
Average, but the calculation is more complex than just a moving average of a
moving average.

EXAMPLE Dema(close, 14)

1.9.37 Dx (0)

DX

Indicators

Directional Movement Index

SYNTAX **Dx(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Directional Movement Index

ADDITIONAL
INFO

Directional Movement can be used either as a system on its own or as a filter on a trend-following system.

It help trader find if a particular stock is trending or not.

Two lines are generated in a DMI study, +DI and -DI. The first line measures positive (upward) movement and the second number measures negative (downward) movement.

A buy signal is given when the +DI line crosses over the - DI line while a sell signal is generated when the +DI line crosses below the - DI line.

A low ADX value (generally less than 20) can indicate a non-trending market with low volumes whereas a cross above 20 may indicate the start of a trend (either up or down). If the ADX is over 40 and begins to fall, it can indicate the slowdown of a current trend. This indicator can also be used to identify non-trending markets, or a deterioration of an ongoing trend.

Directional Movement Index was developed by Welles Wilder and explained in his book, New Concepts in Technical Trading Systems.

EXAMPLE Dx(14)

1.9.38 Dx (1)

DX

Indicators

Directional Movement Index

SYNTAX	Dx(ARRAY high, ARRAY low, ARRAY close, ARRAY timeperiod)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Directional Movement Index
ADDITIONAL INFO	Directional Movement can be used either as a system on its own or as a filter on a trend-following system. It help trader find if a particular stock is trending or not. Two lines are generated in a DMI study, +DI and -DI. The first line measures positive (upward) movement and the second number measures negative (downward) movement. A buy signal is given when the +DI line crosses over the - DI line while a sell signal is generated when the +DI line crosses below the - DI line. A low ADX value (generally less than 20) can indicate a non-trending market with low volumes whereas a cross above 20 may indicate the start of a trend (either up or down). If the ADX is over 40 and begins to fall, it can indicate the slowdown of a current trend. This indicator can also be used to identify non-trending markets, or a deterioration of an ongoing trend. Directional Movement Index was developed by Welles Wilder and explained in his book, New Concepts in Technical Trading Systems.
EXAMPLE	Dx(high, low, close, 14)

1.9.39 Ema (0)

EMA

Indicators

Exponential Moving Average

SYNTAX **Ema(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Exponential Moving Average

ADDITIONAL
INFO In a Simple Moving Average, each value in the time period carries equal weight, and values outside of the time period are not included in the average. However, the Exponential Moving Average is a cumulative calculation, including all data. Past values have a diminishing contribution to the average, while more recent values have a greater contribution. This method allows the moving average to be more responsive to changes in the data.

EXAMPLE Ema(14)

1.9.40 Ema (1)

EMA

Indicators

Exponential Moving Average

SYNTAX **Ema(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Exponential Moving Average

ADDITIONAL In a Simple Moving Average, each value in the time period carries equal
INFO weight, and values outside of the time period are not included in the average. However, the Exponential Moving Average is a cumulative calculation, including all data. Past values have a diminishing contribution to the average, while more recent values have a greater contribution. This method allows the moving average to be more responsive to changes in the data.

EXAMPLE Ema(close, 14)

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1.9.41 Fama (0)

FAMA

Indicators

Following Adaptive Moving Average

SYNTAX **Fama(ARRAY fastlimit, ARRAY slowlimit)**

RETURNS NUMERIC ARRAY

DESCRIPTION Following Adaptive Moving Average

ADDITIONAL FAMA stands for Following Adaptive Moving Average, and is a
INFO complimentary indicator to MAMA.

EXAMPLE Fama(0.2, 0.5)

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1.9.42 Fama (1)

FAMA

Indicators

Following Adaptive Moving Average

SYNTAX **Fama(ARRAY array, ARRAY fastlimit, ARRAY slowlimit)**

RETURNS NUMERIC ARRAY

DESCRIPTION Following Adaptive Moving Average

ADDITIONAL FAMA stands for Following Adaptive Moving Average, and is a
INFO complimentary indicator to MAMA.

EXAMPLE Fama((high + low) / 2, 0.2, 0.5)

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1.9.43 GapDown

GAPDOWN

Gap Down

Indicators

SYNTAX **GapDown()**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns 1, when a down gap happen

ADDITIONAL
INFO

EXAMPLE GapDown()

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1.9.44 GapUp

GAPUP

Gap Up

Indicators

SYNTAX	GapUp()
RETURNS	NUMERIC ARRAY
DESCRIPTION	Returns 1, when an up gap happen
ADDITIONAL INFO	
EXAMPLE	GapUp()

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1.9.45 Hhv (0)

HHV
Highest

Indicators

SYNTAX	Hhv(ARRAY timeperiod)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Highest value over a specified period
ADDITIONAL INFO	
EXAMPLE	Hhv(14)

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1.9.46 Hhv (1)

HHV
Highest

Indicators

SYNTAX **Hhv(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Highest value over a specified period

ADDITIONAL
INFO

EXAMPLE Hhv(close, 14)

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1.9.47 Ht_Dcperiod (0)

HT_DCPERIOD

Indicators

Hilbert Transform - Dominant Cycle Period

SYNTAX **Ht_Dcperiod()**

RETURNS NUMERIC ARRAY

DESCRIPTION Hilbert Transform - Dominant Cycle Period

ADDITIONAL
INFO

EXAMPLE Ht_Dcperiod()

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1.9.48 Ht_Dcperiod (1)

HT_DCPERIOD

Indicators

Hilbert Transform - Dominant Cycle Period

SYNTAX **Ht_Dcperiod(ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Hilbert Transform - Dominant Cycle Period

ADDITIONAL
INFO

EXAMPLE Ht_Dcperiod(close)

1.9.49 Ht_Dcphase (0)

HT_DCPHASE

Indicators

Hilbert Transform - Dominant Cycle Phase

SYNTAX **Ht_Dcphase()**

RETURNS NUMERIC ARRAY

DESCRIPTION Hilbert Transform - Dominant Cycle Phase

ADDITIONAL The Hilbert Transform is a technique used to generate inphase and quadrature
INFO components of a de-trended real-valued "analytic-like" signal (such as a Price
Series) in order to analyze variations of the instantaneous phase and amplitude..
HTDCPhase returns the Hilbert Transform Phase of the Dominant Cycle. The
Dominant Cycle Phase lies in the range of 0 to 360 degrees.
The DC Phase at a specific bar gives the phase position from 0 to 360 degrees
within the current Hilbert Transform Period instantaneously measured at that
bar. It is meaningful only during a cyclic period of the analytic signal
waveform (price series) being measured. Its transition from 360 degrees to 0
degrees can be used to designate the start of a new cycle. It can also be utilized
to signal the start or end of trending or cyclic periods. Departure from a
constant rate change of phase is a sensitive way to detect the end of a cycle
mode. See the examples.

EXAMPLE Ht_Dcphase()

1.9.50 Ht_Dcphase (1)

HT_DCPHASE

Indicators

Hilbert Transform - Dominant Cycle Phase

SYNTAX **Ht_Dcphase(ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Hilbert Transform - Dominant Cycle Phase

ADDITIONAL The Hilbert Transform is a technique used to generate inphase and quadrature
INFO components of a de-trended real-valued "analytic-like" signal (such as a Price
Series) in order to analyze variations of the instantaneous phase and amplitude..
HTDCPhase returns the Hilbert Transform Phase of the Dominant Cycle. The
Dominant Cycle Phase lies in the range of 0 to 360 degrees.
The DC Phase at a specific bar gives the phase position from 0 to 360 degrees
within the current Hilbert Transform Period instantaneously measured at that
bar. It is meaningful only during a cyclic period of the analytic signal
waveform (price series) being measured. Its transition from 360 degrees to 0
degrees can be used to designate the start of a new cycle. It can also be utilized
to signal the start or end of trending or cyclic periods. Departure from a
constant rate change of phase is a sensitive way to detect the end of a cycle
mode. See the examples.

EXAMPLE Ht_Dcphase(close)

1.9.51 Ht_Leadsine (0)

HT_LEADSINE

Indicators

Hilbert Transform - SineWave

SYNTAX **Ht_Leadsine()**

RETURNS NUMERIC ARRAY

DESCRIPTION Hilbert Transform - SineWave

ADDITIONAL The Hilbert Transform is a technique used to generate inphase and quadrature
INFO components of a de-trended real-valued "analytic-like" signal (such as a Price
Series) in order to analyze variations of the instantaneous phase and amplitude..
HTDCPhase returns the Hilbert Transform Phase of the Dominant Cycle. The
Dominant Cycle Phase lies in the range of 0 to 360 degrees. The Hilbert
Transform Lead Sine is just the sine of the DC Phase advanced by 45 degrees.
The DC Phase at a specific bar gives the phase position from 0 to 360 degrees
within the current Hilbert Transform Period instantaneously measured at that
bar. The HTLeadSin is the sine of the DC Phase at a specific bar. It is most
often used in conjunction with the HTSin indicator to identify cyclic turning
points. Quoting from Market Mode Strategies.doc by John Ehlers from MESA
Software, "A clear, unequivocal cycle mode indicator can be generated by
plotting the Sine of the measured phase angle advanced by 45 degrees. This
leading signal crosses the sinewave 1/8th of a cycle BEFORE the peaks and
valleys of the cyclic turning points, enabling you to make your trading decision
in time to profit from the entire amplitude swing of the cycle. A significant
additional advantage is that the two indicator lines don't cross except at cyclic
turning points, avoiding the false whipsaw signals of most "oscillators" when
the market is in a Trend Mode. The two lines don't cross because the phase rate
of change is nearly zero in a trend mode. Since the phase is not changing, the
two lines separated by 45 degrees in phase never get the opportunity to cross."
See the examples.

EXAMPLE Ht_Leadsine()

1.9.52 Ht_Leadsine (1)

HT_LEADSINE

Indicators

Hilbert Transform - SineWave

SYNTAX **Ht_Leadsine(ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Hilbert Transform - SineWave

ADDITIONAL The Hilbert Transform is a technique used to generate inphase and quadrature
INFO components of a de-trended real-valued "analytic-like" signal (such as a Price
Series) in order to analyze variations of the instantaneous phase and amplitude..
HTDCPhase returns the Hilbert Transform Phase of the Dominant Cycle. The
Dominant Cycle Phase lies in the range of 0 to 360 degrees. The Hilbert
Transform Lead Sine is just the sine of the DC Phase advanced by 45 degrees.
The DC Phase at a specific bar gives the phase position from 0 to 360 degrees
within the current Hilbert Transform Period instantaneously measured at that
bar. The HTLeadSin is the sine of the DC Phase at a specific bar. It is most
often used in conjunction with the HTSin indicator to identify cyclic turning
points. Quoting from Market Mode Strategies.doc by John Ehlers from MESA
Software, "A clear, unequivocal cycle mode indicator can be generated by
plotting the Sine of the measured phase angle advanced by 45 degrees. This
leading signal crosses the sinewave 1/8th of a cycle BEFORE the peaks and
valleys of the cyclic turning points, enabling you to make your trading decision
in time to profit from the entire amplitude swing of the cycle. A significant
additional advantage is that the two indicator lines don't cross except at cyclic
turning points, avoiding the false whipsaw signals of most "oscillators" when
the market is in a Trend Mode. The two lines don't cross because the phase rate
of change is nearly zero in a trend mode. Since the phase is not changing, the
two lines separated by 45 degrees in phase never get the opportunity to cross."
See the examples.

EXAMPLE Ht_Leadsine(close)

1.9.53 Ht_Phase (0)

HT_PHASORPHASE

Indicators

Hilbert Transform - Instantaneous Trendline

SYNTAX **Ht_Phase()**

RETURNS NUMERIC ARRAY

DESCRIPTION Hilbert Transform - Instantaneous Trendline

ADDITIONAL
INFO The Hilbert Transform is a technique used to generate inphase and quadrature components of a de-trended real-valued "analytic-like" signal (such as a Price Series) in order to analyze variations of the instantaneous phase and amplitude. HTInPhase returns the Hilbert Transform generated InPhase component of the input Price Series.
The InPhase component is used in conjunction with the Quadrature component to generate the phase of the analytic signal (using the ArcTan function) at a specific bar or for the entire Price Series.

EXAMPLE Ht_Phase()

1.9.54 Ht_Phase (1)

HT_PHASE

Indicators

Hilbert Transform - Instantaneous Trendline

SYNTAX **Ht_Phase(ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Hilbert Transform - Instantaneous Trendline

ADDITIONAL The Hilbert Transform is a technique used to generate inphase and quadrature
INFO components of a de-trended real-valued "analytic-like" signal (such as a Price
Series) in order to analyze variations of the instantaneous phase and amplitude.
HTInPhase returns the Hilbert Transform generated InPhase component of the
input Price Series.
The InPhase component is used in conjunction with the Quadrature component
to generate the phase of the analytic signal (using the ArcTan function) at a
specific bar or for the entire Price Series.

EXAMPLE Ht_Phase(close)

1.9.55 Ht_Phasequadrature (0)

HT_PHASEQUADRATURE

Indicators

Hilbert Transform - Trend vs Cycle Mode

SYNTAX **Ht_Phasequadrature()**

RETURNS NUMERIC ARRAY

DESCRIPTION Hilbert Transform - Trend vs Cycle Mode

ADDITIONAL The Hilbert Transform is a technique used to generate inphase and quadrature
INFO components of a de-trended real-valued "analytic-like" signal (such as a Price
Series) in order to analyze variations of the instantaneous phase and amplitude.
HTQuadrature returns the Hilbert Transform generated Quadrature component
of the input Price Series.
The Quadrature component is used in conjunction with the InPhase component
to generate the phase of the analytic signal (using the ArcTan function) at a
specific bar or for the entire Price Series.

EXAMPLE Ht_Phasequadrature()

1.9.56 Ht_Phasequadrature (1)

HT_PHASEQUADRATURE

Indicators

Hilbert Transform - Trend vs Cycle Mode

SYNTAX **Ht_Phasequadrature(ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Hilbert Transform - Trend vs Cycle Mode

ADDITIONAL The Hilbert Transform is a technique used to generate inphase and quadrature
INFO components of a de-trended real-valued "analytic-like" signal (such as a Price
Series) in order to analyze variations of the instantaneous phase and amplitude.
HTQuadrature returns the Hilbert Transform generated Quadrature component
of the input Price Series.
The Quadrature component is used in conjunction with the InPhase component
to generate the phase of the analytic signal (using the ArcTan function) at a
specific bar or for the entire Price Series.

EXAMPLE Ht_Phasequadrature(close)

1.9.57 Ht_Sine (0)

HT_SINE

Indicators

Hilbert Transform - SineWave

SYNTAX **Ht_Sine()**

RETURNS NUMERIC ARRAY

DESCRIPTION Hilbert Transform - SineWave

ADDITIONAL INFO The Hilbert Transform is a technique used to generate inphase and quadrature components of a de-trended real-valued "analytic-like" signal (such as a Price Series) in order to analyze variations of the instantaneous phase and amplitude.. HTDCPhase returns the Hilbert Transform Phase of the Dominant Cycle. The Dominant Cycle Phase lies in the range of 0 to 360 degrees. The Hilbert Transform Sine is just the sine of the DC Phase.

The DC Phase at a specific bar gives the phase position from 0 to 360 degrees within the current Hilbert Transform Period instantaneously measured at that bar. The HTSin is the sine of the DC Phase at a specific bar. It is most often used in conjunction with the HTLeadSin indicator to identify cyclic turning points. Quoting from Market Mode Strategies.doc by John Ehlers from MESA Software, "A clear, unequivocal cycle mode indicator can be generated by plotting the Sine of the measured phase angle advanced by 45 degrees. This leading signal crosses the sinewave 1/8th of a cycle BEFORE the peaks and valleys of the cyclic turning points, enabling you to make your trading decision in time to profit from the entire amplitude swing of the cycle. A significant additional advantage is that the two indicator lines don't cross except at cyclic turning points, avoiding the false whipsaw signals of most "oscillators" when the market is in a Trend Mode. The two lines don't cross because the phase rate of change is nearly zero in a trend mode. Since the phase is not changing, the two lines separated by 45 degrees in phase never get the opportunity to cross."

EXAMPLE Ht_Sine()

1.9.58 Ht_Sine (1)

HT_SINE

Indicators

Hilbert Transform - SineWave

SYNTAX **Ht_Sine(ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Hilbert Transform - SineWave

ADDITIONAL The Hilbert Transform is a technique used to generate inphase and quadrature
INFO components of a de-trended real-valued "analytic-like" signal (such as a Price
Series) in order to analyze variations of the instantaneous phase and amplitude..
HTDCPhase returns the Hilbert Transform Phase of the Dominant Cycle. The
Dominant Cycle Phase lies in the range of 0 to 360 degrees. The Hilbert
Transform Sine is just the sine of the DC Phase.
The DC Phase at a specific bar gives the phase position from 0 to 360 degrees
within the current Hilbert Transform Period instantaneously measured at that
bar. The HTSin is the sine of the DC Phase at a specific bar. It is most often
used in conjunction with the HTLeadSin indicator to identify cyclic turning
points. Quoting from Market Mode Strategies.doc by John Ehlers from MESA
Software, "A clear, unequivocal cycle mode indicator can be generated by
plotting the Sine of the measured phase angle advanced by 45 degrees. This
leading signal crosses the sinewave 1/8th of a cycle BEFORE the peaks and
valleys of the cyclic turning points, enabling you to make your trading decision
in time to profit from the entire amplitude swing of the cycle. A significant
additional advantage is that the two indicator lines don't cross except at cyclic
turning points, avoiding the false whipsaw signals of most "oscillators" when
the market is in a Trend Mode. The two lines don't cross because the phase rate
of change is nearly zero in a trend mode. Since the phase is not changing, the
two lines separated by 45 degrees in phase never get the opportunity to cross."

EXAMPLE Ht_Sine(close)

1.9.59 Ht_Trendline (0)

HT_TRENDLINE

Indicators

Hilbert Transform - Phasor Components

SYNTAX **Ht_Trendline()**

RETURNS NUMERIC ARRAY

DESCRIPTION Hilbert Transform - Phasor Components

ADDITIONAL The Hilbert Transform is a technique used to generate inphase and quadrature
INFO components of a de-trended real-valued "analytic-like" signal (such as a Price
Series) in order to analyze variations of the instantaneous phase and amplitude. HTTrendline (or MESA Instantaneous Trendline) returns the Price Series value after the Dominant Cycle of the analytic signal as generated by the Hilbert Transform has been removed. The Dominant Cycle can be thought of as being the "most likely" period (in the range of 10 to 40) of a sine function of the Price Series.

The HTTrendline at a specific bar gives the current Hilbert Transform Trendline as instantaneously measured at that bar. In its Series form, the Instantaneous Trendline appears much like a Moving Average, but with minimal lag compared with the lag normally associated with such averages for equivalent periods. The HTTrendline is formed by removing the Dominant Cycle from the Price Series. See the examples.

EXAMPLE Ht_Trendline()

1.9.60 Ht_Trendline (1)

HT_TRENDLINE

Indicators

Hilbert Transform - Phasor Components

SYNTAX **Ht_Trendline(ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Hilbert Transform - Phasor Components

ADDITIONAL The Hilbert Transform is a technique used to generate inphase and quadrature
INFO components of a de-trended real-valued "analytic-like" signal (such as a Price
Series) in order to analyze variations of the instantaneous phase and amplitude.
HTTrendline (or MESA Instantaneous Trendline) returns the Price Series value
after the Dominant Cycle of the analytic signal as generated by the Hilbert
Transform has been removed. The Dominant Cycle can be thought of as being
the "most likely" period (in the range of 10 to 40) of a sine function of the Price
Series.

The HTTrendline at a specific bar gives the current Hilbert Transform
Trendline as instantaneously measured at that bar. In its Series form, the
Instantaneous Trendline appears much like a Moving Average, but with
minimal lag compared with the lag normally associated with such averages for
equivalent periods. The HTTrendline is formed by removing the Dominant
Cycle from the Price Series. See the examples.

EXAMPLE Ht_Trendline(close)

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1.9.61 Ht_Trendmode (0)

HT_TRENDMODE

Indicators

Hilbert Transform - Phasor Components

SYNTAX **Ht_Trendmode()**

RETURNS NUMERIC ARRAY

DESCRIPTION Hilbert Transform - Phasor Components

ADDITIONAL
INFO

EXAMPLE Ht_Trendmode()

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1.9.62 Ht_Trendmode (1)

HT_TRENDMODE

Indicators

Hilbert Transform - Phasor Components

SYNTAX **Ht_Trendmode(ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Hilbert Transform - Phasor Components

ADDITIONAL
INFO

EXAMPLE Ht_Trendmode(close)

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1.9.63 Inside

INSIDE

Inside

Indicators

SYNTAX

Inside()

RETURNS

NUMERIC ARRAY

DESCRIPTION Returns 1, when an inside day occurs

ADDITIONAL INFO

EXAMPLE

Inside()

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1.9.64 Kama (0)

KAMA

Indicators

Kaufman Adaptive Moving Average

SYNTAX **Kama(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Kaufman Adaptive Moving Average

ADDITIONAL KAMA is an adaptive moving average, and uses the noise level of the market
INFO to determine the length of the trend required to calculate the average.

EXAMPLE Kama(14)

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1.9.65 Kama (1)

KAMA

Indicators

Kaufman Adaptive Moving Average

SYNTAX **Kama(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Kaufman Adaptive Moving Average

ADDITIONAL KAMA is an adaptive moving average, and uses the noise level of the market
INFO to determine the length of the trend required to calculate the average.

EXAMPLE Kama(close, 14)

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1.9.66 LinearReg (0)

LINEARREG
Linear Regression

Indicators

SYNTAX **LinearReg(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Linear Regression

ADDITIONAL In statistics, linear regression is a regression method of modeling the
INFO conditional expected value of one variable y given the values of some other
 variable or variables x.

EXAMPLE LinearReg(14)

1.9.67 LinearReg (1)

LINEARREG
Linear Regression

Indicators

SYNTAX **LinearReg(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Linear Regression

ADDITIONAL In statistics, linear regression is a regression method of modeling the
INFO conditional expected value of one variable y given the values of some other
 variable or variables x.

EXAMPLE LinearReg(close, 14)

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1.9.68 LinearReg_Angle (0)

LINEARREG_ANGLE

Linear Regression Angle

Indicators

SYNTAX **LinearReg_Angle(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Linear Regression Angle

ADDITIONAL
INFO

EXAMPLE LinearReg_Angle(14)

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1.9.69 LinearReg_Angle (1)

LINEARREG_ANGLE

Linear Regression Angle

Indicators

SYNTAX **LinearReg_Angle(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Linear Regression Angle

ADDITIONAL
INFO

EXAMPLE LinearReg_Angle(close, 14)

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1.9.70 LinearReg_Intercept (0)

LINEARREG_INTERCEPT

Linear Regression Intercept

Indicators

SYNTAX **LinearReg_Intercept(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Linear Regression Intercept

ADDITIONAL
INFO

EXAMPLE LinearReg_Intercept(14)

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1.9.71 LinearReg_Intercept (1)

LINEARREG_INTERCEPT

Linear Regression Intercept

Indicators

SYNTAX **LinearReg_Intercept(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Linear Regression Intercept

ADDITIONAL
INFO

EXAMPLE LinearReg_Intercept(close, 14)

1.9.72 LinearReg_Slope (0)

LINEARREG_SLOPE
Linear Regression Slope

Indicators

SYNTAX	LinearReg_Slope(ARRAY timeperiod)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Linear Regression Slope
ADDITIONAL INFO	Linear Regression Slope returns the slope of the Linear Regression line of the specified period. It return the slope of a line that best fits the stock price over the specified period. Linear Regression Slope indicator is a statistical indicator. An up sloping Linear Regression line indicates that prices have been rising while a down sloping line indicates that prices have been falling.
EXAMPLE	LinearReg_Slope(14)

1.9.73 LinearReg_Slope (1)

LINEARREG_SLOPE
Linear Regression Slope

Indicators

SYNTAX	LinearReg_Slope(ARRAY close, ARRAY timeperiod)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Linear Regression Slope
ADDITIONAL INFO	Linear Regression Slope returns the slope of the Linear Regression line of the specified period. It return the slope of a line that best fits the stock price over the specified period. Linear Regression Slope indicator is a statistical indicator. An up sloping Linear Regression line indicates that prices have been rising while a down sloping line indicates that prices have been falling.
EXAMPLE	LinearReg_Slope(close, 14)

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1.9.74 Llv (0)

LLV
Lowest

Indicators

SYNTAX	Llv(ARRAY timeperiod)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Lowest value over a specified period
ADDITIONAL INFO	
EXAMPLE	Llv(14)

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1.9.75 Llv (1)

LLV
Lowest

Indicators

SYNTAX **Llv(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Lowest value over a specified period

ADDITIONAL
INFO

EXAMPLE Llv(close, 14)

1.9.76 Ma (0)

MA
Moving Average

Indicators

SYNTAX	Ma(ARRAY timeperiod, ENUM movingaveragetype)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Moving Average
ADDITIONAL INFO	Differents type of moving average : Double Exponential Moving Average Exponential Moving Average Kaufman Adaptive Moving Average MESA Adaptive Moving Average Simple Moving Average T3 Triple Exponential Moving Average Triangular Moving Average Weighted Moving Average
EXAMPLE	Ma(15, _MaSma)

1.9.77 Ma (1)

MA
Moving Average

Indicators

SYNTAX	Ma(ARRAY close, ARRAY timeperiod, ENUM movingaveragetype)
RETURNS	NUMERIC ARRAY
DESCRIPTION	All Moving Average
ADDITIONAL INFO	Differents type of moving average : Double Exponential Moving Average Exponential Moving Average Kaufman Adaptive Moving Average MESA Adaptive Moving Average Simple Moving Average T3 Triple Exponential Moving Average Triangular Moving Average Weighted Moving Average
EXAMPLE	Ma(close, 14, _MaSma)

1.9.78 Macd (0)

MACD

Indicators

Moving Average Convergence/Divergence

SYNTAX **Macd()**

RETURNS NUMERIC ARRAY

DESCRIPTION Moving Average Convergence/Divergence

ADDITIONAL MACD returns the Moving Average Convergence Divergence indicator.
INFO MACD is a momentum oscillator, yet its primary use is to trade trends.
 MACD has two lines, one called MACD line or fast line and the other MACD
 signal or slow line.
 Differents interpretation can be made using MACD.

EXAMPLE Macd()

1.9.79 Macd (1)

MACD

Indicators

Moving Average Convergence/Divergence

SYNTAX **Macd(ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Moving Average Convergence/Divergence

ADDITIONAL MACD returns the Moving Average Convergence Divergence indicator.
INFO MACD is a momentum oscillator, yet its primary use is to trade trends.
 MACD has two lines, one called MACD line or fast line and the other MACD
 signal or slow line.
 Differents interpretation can be made using MACD.

EXAMPLE Macd(close)

1.9.80 MacdExt (0)

MACDEXT

Indicators

MACD with controllable MA type

SYNTAX	MacdExt(ARRAY fastperiod, ENUM fastmovingaveragetype, ARRAY slowperiod, ENUM slowmovingaveragetype)
RETURNS	NUMERIC ARRAY
DESCRIPTION	MACD with controllable MA type
ADDITIONAL INFO	MACD returns the Moving Average Convergence Divergence indicator. MACD is a momentum oscillator, yet its primary use is to trade trends. MACD has two lines, one called MACD line or fast line and the other MACD signal or slow line. Moving Average Convergence/Divergence with controllable MA type let you choose the Moving average type to use in MACD calculations.
EXAMPLE	MacdExt(5, _MaSma, 3, _MaSma)

1.9.81 MacdExt (1)

MACDEXT

Indicators

MACD with controllable MA type

SYNTAX **MacdExt(ARRAY close, ARRAY fastperiod, ENUM fastmovingaveragetype, ARRAY slowperiod, ENUM slowmovingaveragetype)**

RETURNS NUMERIC ARRAY

DESCRIPTION MACD with controllable MA type

ADDITIONAL MACD returns the Moving Average Convergence Divergence indicator.
INFO MACD is a momentum oscillator, yet its primary use is to trade trends.
 MACD has two lines, one called MACD line or fast line and the other MACD
 signal or slow line.
 Moving Average Convergence/Divergence with controllable MA type let you
 choose the Moving average type to use in MACD calculations.

EXAMPLE MacdExt(close, 5, _MaSma, 3, _MaSma)

1.9.82 MacdExtHist (0)

MACDEXTHIST

Indicators

MACD Historigramme with controllable MA type

SYNTAX	MacdExtHist(ARRAY fastperiod, ENUM fastmovingaveragetype, ARRAY slowperiod, ENUM slowmovingaveragetype, ARRAY signalperiod, ENUM signalmovingaveragetype)
RETURNS	NUMERIC ARRAY
DESCRIPTION	MACD Historigramme with controllable MA type
ADDITIONAL INFO	The MACD Histogram show the divergence between the MACD and its reference line (the 9-day Exponential Moving Average). The MACD Histogram with controllable MA type let you choose the Moving average type to use in MACD Histogram calculations.
EXAMPLE	MacdExtHist(5, _MaSma, 3, _MaSma, 15, _MaSma)

1.9.83 MacdExtHist (1)

MACDEXTHIST

Indicators

MACD Historigramme with controllable MA type

SYNTAX	MacdExtHist(ARRAY close, ARRAY fastperiod, ENUM fastmovingaveragetype, ARRAY slowperiod, ENUM slowmovingaveragetype, ARRAY signalperiod, ENUM signalmovingaveragetype)
RETURNS	NUMERIC ARRAY
DESCRIPTION	MACD Historigramme with controllable MA type
ADDITIONAL INFO	The MACD Histogram show the divergence between the MACD and its reference line (the 9-day Exponential Moving Average). The MACD Histogram with controllable MA type let you choose the Moving average type to use in MACD Histogram calculations.
EXAMPLE	MacdExtHist(close, 5, _MaSma, 3, _MaSma, 15, _MaSma)

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1.9.84 MacdExtSignal (0)

MACDEXTSIGNAL

Indicators

MACD Signal with controllable MA type

SYNTAX **MacdExtSignal(ARRAY fastperiod, ENUM fastmovingaveragetype, ARRAY slowperiod, ENUM slowmovingaveragetype, ARRAY signalperiod, ENUM signalmovingaveragetype)**

RETURNS NUMERIC ARRAY

DESCRIPTION MACD Signal with controllable MA type

ADDITIONAL
INFO

EXAMPLE MacdExtSignal(5, _MaSma, 3, _MaSma, 15, _MaSma)

1.9.85 MacdExtSignal (1)

MACDEXTSIGNAL

Indicators

MACD Signal with controllable MA type

SYNTAX **MacdExtSignal(ARRAY close, ARRAY fastperiod, ENUM fastmovingaveragetype, ARRAY slowperiod, ENUM slowmovingaveragetype, ARRAY signalperiod, ENUM signalmovingaveragetype)**

RETURNS NUMERIC ARRAY

DESCRIPTION MACD Signal with controllable MA type

ADDITIONAL
INFO

EXAMPLE MacdExtSignal(close, 5, _MaSma, 3, _MaSma, 15, _MaSma)

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1.9.86 MacdHist (0)

MACDHIST

MACD Historigramme

Indicators

SYNTAX **MacdHist(ARRAY signalperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION MACD Historigramme

ADDITIONAL The MACD Histogram show the divergence between the MACD and its
INFO reference line (the 9-day Exponential Moving Average).

EXAMPLE MacdHist(15)

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1.9.87 MacdHist (1)

MACDHIST

MACD Historigramme

Indicators

SYNTAX	MacdHist(ARRAY close, ARRAY signalperiod)
RETURNS	NUMERIC ARRAY
DESCRIPTION	MACD Historigramme
ADDITIONAL INFO	The MACD Histogram show the divergence between the MACD and its reference line (the 9-day Exponential Moving Average).
EXAMPLE	MacdHist(close, 15)

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1.9.88 MacdSignal (0)

MACDSIGNAL
MACD Signal

Indicators

SYNTAX **MacdSignal(ARRAY signalperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION MACD Signal

ADDITIONAL
INFO

EXAMPLE MacdSignal(15)

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1.9.89 MacdSignal (1)

MACDSIGNAL
MACD Signal

Indicators

SYNTAX **MacdSignal(ARRAY close, ARRAY signalperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION MACD Signal

ADDITIONAL
INFO

EXAMPLE MacdSignal(close, 15)

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1.9.90 Mama (0)

MAMA

MESA Adaptive Moving Average

Indicators

SYNTAX	Mama(ARRAY fastlimit, ARRAY slowlimit)
RETURNS	NUMERIC ARRAY
DESCRIPTION	MESA Adaptive Moving Average
ADDITIONAL INFO	MAMA stands for MESA Adaptive Moving Average.
EXAMPLE	Mama(0.2, 0.5)

1.9.91 Mama (1)

MAMA

Indicators

MESA Adaptive Moving Average

SYNTAX **Mama(ARRAY array, ARRAY fastlimit, ARRAY slowlimit)**

RETURNS NUMERIC ARRAY

DESCRIPTION MESA Adaptive Moving Average

ADDITIONAL MAMA stands for MESA Adaptive Moving Average.
INFO

EXAMPLE Mama((high + low) / 2, 0.2, 0.5)

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1.9.92 MedPrice (0)

MEDPRICE
Median Price

Indicators

SYNTAX **MedPrice()**

RETURNS NUMERIC ARRAY

DESCRIPTION Median Price

ADDITIONAL The Median Price function calculates the midpoint between the high and low
INFO prices for the day.
 The median price (called also mean or average price) provides a simplified
 view of the trading prices for the day.

EXAMPLE MedPrice()

1.9.93 MedPrice (1)

MEDPRICE
Median Price

Indicators

SYNTAX **MedPrice(ARRAY high, ARRAY low)**

RETURNS NUMERIC ARRAY

DESCRIPTION Median Price

ADDITIONAL The Median Price function calculates the midpoint between the high and low
INFO prices for the day.
 The median price (called also mean or average price) provides a simplified
 view of the trading prices for the day.

EXAMPLE MedPrice(high, low)

1.9.94 Mfi (0)

MFI

Indicators

Money Flow Index

SYNTAX **Mfi(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Money Flow Index

ADDITIONAL The Money Flow Index is another momentum indicator illustrating the strength
INFO of money flowing into and out of a security.
 The essential difference between the Money Flow and others momentum
 indicator is that the money flow incorporates volume in addition to pricing
 information.

EXAMPLE Mfi(14)

1.9.95 Mfi (1)

MFI

Indicators

Money Flow Index

SYNTAX	Mfi(ARRAY high, ARRAY low, ARRAY close, ARRAY volume, ARRAY timeperiod)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Money Flow Index
ADDITIONAL INFO	The Money Flow Index is another momentum indicator illustrating the strength of money flowing into and out of a security. The essential difference between the Money Flow and others momentum indicator is that the money flow incorporates volume in addition to pricing information.
EXAMPLE	Mfi(high, low, close, volume, 14)

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1.9.96 MidPoint (0)

MIDPOINT
MidPoint

Indicators

SYNTAX	MidPoint(ARRAY timeperiod)
RETURNS	NUMERIC ARRAY
DESCRIPTION	MidPoint over period
ADDITIONAL INFO	Simply (highest value + lowest value)/2.
EXAMPLE	MidPoint(14)

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1.9.97 MidPoint (1)

MIDPOINT
MidPoint

Indicators

SYNTAX **MidPoint(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION MidPoint over period

ADDITIONAL Simply (highest value + lowest value)/2.
INFO

EXAMPLE MidPoint(close, 14)

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1.9.98 MidPrice (0)

MIDPRICE
MidPoint Price

Indicators

SYNTAX	MidPrice(ARRAY timeperiod)
RETURNS	NUMERIC ARRAY
DESCRIPTION	MidPoint Price over period
ADDITIONAL INFO	Midpoint Price over period Simply (highest high + lowest low)/2
EXAMPLE	MidPrice(14)

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1.9.99 MidPrice (1)

MIDPRICE
MidPoint Price

Indicators

SYNTAX	MidPrice(ARRAY high, ARRAY low, ARRAY timeperiod)
RETURNS	NUMERIC ARRAY
DESCRIPTION	MidPoint Price over period
ADDITIONAL INFO	Midpoint Price over period Simply (highest high + lowest low)/2
EXAMPLE	MidPrice(high, low, 14)

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1.9.100 Minus_Di (0)

MINUS_DI

Minus Directional Indicator

Indicators

SYNTAX **Minus_Di(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Minus Directional Indicator

ADDITIONAL
INFO

EXAMPLE Minus_Di(14)

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1.9.101 Minus_Di (1)

MINUS_DI

Indicators

Minus Directional Indicator

SYNTAX **Minus_Di(ARRAY high, ARRAY low, ARRAY close, ARRAY
timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Minus Directional Indicator

ADDITIONAL
INFO

EXAMPLE Minus_Di(high, low, close, 14)

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1.9.102 Minus_Dm (0)

MINUS_DM

Minus Directional Movement

Indicators

SYNTAX **Minus_Dm(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Minus Directional Movement

ADDITIONAL
INFO

EXAMPLE Minus_Dm(14)

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1.9.103 Minus_Dm (1)

MINUS_DM

Minus Directional Movement

Indicators

SYNTAX **Minus_Dm(ARRAY high, ARRAY low, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Minus Directional Movement

ADDITIONAL
INFO

EXAMPLE Minus_Dm(high, low, 14)

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1.9.104 Mom (0)

MOM
Momentum

Indicators

SYNTAX **Mom(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Momentum

ADDITIONAL The Momentum indicator provides an indication of a market's velocity
INFO The Momentum indicator is used as a trend-following oscillator similar to the
 MACD
 This indicator is bullish when it bottoms and turns up and bearish when it
 peaks and turns down.

EXAMPLE Mom(14)

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1.9.105 Mom (1)

MOM
Momentum

Indicators

SYNTAX **Mom(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Momentum

ADDITIONAL The Momentum indicator provides an indication of a market's velocity
INFO The Momentum indicator is used as a trend-following oscillator similar to the
 MACD
 This indicator is bullish when it bottoms and turns up and bearish when it
 peaks and turns down.

EXAMPLE Mom(close, 14)

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1.9.106 Natr (0)

NATR

Indicators

Normalized Average True Range

SYNTAX **Natr(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Normalized Average True Range

ADDITIONAL
INFO

EXAMPLE Natr(14)

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1.9.107 Natr (1)

NATR

Indicators

Normalized Average True Range

SYNTAX **Natr(ARRAY high, ARRAY low, ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Normalized Average True Range

ADDITIONAL
INFO

EXAMPLE Natr(high, low, close, 14)

1.9.108 Obv (0)

OBV

On Balance Volume

Indicators

SYNTAX **Obv()**

RETURNS NUMERIC ARRAY

DESCRIPTION On Balance Volume

ADDITIONAL On Balance Volume is a momentum indicator that relates volume to price
INFO change.

On Balance Volume keeps a running total of volume flowing into or out of a security.

When the security closes higher than the previous close, all of the day's volume is considered up-volume.

A close lower than the previous day's results in all of the day's volume considered down-volume.

Rising trends is considered bullish, while falling trends is bearish.

EXAMPLE Obv()

1.9.109 Obv (1)

OBV

On Balance Volume

Indicators

SYNTAX **Obv(ARRAY close, ARRAY volume)**

RETURNS NUMERIC ARRAY

DESCRIPTION On Balance Volume

ADDITIONAL On Balance Volume is a momentum indicator that relates volume to price
INFO change.

On Balance Volume keeps a running total of volume flowing into or out of a security.

When the security closes higher than the previous close, all of the day's volume is considered up-volume.

A close lower than the previous day's results in all of the day's volume considered down-volume.

Rising trends is considered bullish, while falling trends is bearish.

EXAMPLE Obv(close, volume)

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1.9.110 Outside

OUTSIDE
Outside

Indicators

SYNTAX	Outside()
RETURNS	NUMERIC ARRAY
DESCRIPTION	Returns 1, when an outside day occurs
ADDITIONAL INFO	
EXAMPLE	Outside()

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1.9.111 Plus_Di (0)

PLUS_DI

Plus Directional Indicator

Indicators

SYNTAX **Plus_Di(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Plus Directional Indicator

ADDITIONAL
INFO

EXAMPLE Plus_Di(14)

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1.9.112 Plus_Di (1)

PLUS_DI

Indicators

Plus Directional Indicator

SYNTAX **Plus_Di(ARRAY high, ARRAY low, ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Plus Directional Indicator

ADDITIONAL
INFO

EXAMPLE Plus_Di(high, low, close, 14)

[\[TOP\]](#)

1.9.113 Plus_Dm (0)

PLUS_DM

Plus Directional Movement

Indicators

SYNTAX **Plus_Dm(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Plus Directional Movement

ADDITIONAL
INFO

EXAMPLE Plus_Dm(14)

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1.9.114 Plus_Dm (1)

PLUS_DM

Plus Directional Movement

Indicators

SYNTAX **Plus_Dm(ARRAY high, ARRAY low, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Plus Directional Movement

ADDITIONAL
INFO

EXAMPLE Plus_Dm(high, low, 14)

1.9.115 Ppo (0)

PPO

Indicators

Percentage Price Oscillator

SYNTAX **Ppo(ARRAY fastperiod, ARRAY slowperiod, ENUM movingaveragetype)**

RETURNS NUMERIC ARRAY

DESCRIPTION Percentage Price Oscillator

ADDITIONAL
INFO The Percentage Price Oscillator indicator shows the variation in percentage among two moving averages for the price of a security.
When the short-term moving average or price rises above the longer-term moving average it is considered bullish.
Bearish for the opposite (Short-term moving average or price drop below the longer-term moving average).

EXAMPLE Ppo(3, 10, _MaSma)

1.9.116 Ppo (1)

PPO

Indicators

Percentage Price Oscillator

SYNTAX	Ppo(ARRAY close, ARRAY fastperiod, ARRAY slowperiod, ENUM movingaveragetype)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Percentage Price Oscillator
ADDITIONAL INFO	The Percentage Price Oscillator indicator shows the variation in percentage among two moving averages for the price of a security. When the short-term moving average or price rises above the longer-term moving average it is considered bullish. Bearish for the opposite (Short-term moving average or price drop below the longer-term moving average).
EXAMPLE	Ppo(close, 3, 10, _MaSma)

1.9.117 Roc (0)

ROC

Indicators

Rate of change

SYNTAX **Roc(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Rate of change

ADDITIONAL
INFO The Rate of Change is an oscillator that displays the difference between the current price and the price x-time periods ago.
The Rate of change indicator show overbought/oversold areas like many others indicators.
Overbought means that the stock price is expected to fall while oversold means that the stock price is expected to fall.
But, often extremely overbought/oversold readings usually imply a continuation of the current trend.
Formula : $((\text{price}/\text{prevPrice})-1)*100$

EXAMPLE Roc(14)

1.9.118 Roc (1)

ROC

Indicators

Rate of change

SYNTAX **Roc(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Rate of change

ADDITIONAL
INFO The Rate of Change is an oscillator that displays the difference between the current price and the price x-time periods ago.
The Rate of change indicator show overbought/oversold areas like many others indicators.
Overbought means that the stock price is expected to fall while oversold means that the stock price is expected to fall.
But, often extremely overbought/oversold readings usually imply a continuation of the current trend.
Formula : $((\text{price}/\text{prevPrice})-1)*100$

EXAMPLE Roc(close, 14)

1.9.119 Rocp (0)

ROCP

Indicators

Rate of change Percentage

SYNTAX **Rocp(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Rate of change Percentage

ADDITIONAL
INFO The Rate of Change Percentage is an oscillator that displays the difference in percentage between the current price and the price x-time periods ago.
The Rate of change indicator show overbought/oversold areas like many others indicators.
Overbought means that the stock price is expected to fall while oversold means that the stock price is expected to fall.
But, often extremely overbought/oversold readings usually imply a continuation of the current trend.
Formula : $(\text{price} - \text{prevPrice}) / \text{prevPrice}$

EXAMPLE Rocp(14)

1.9.120 Rocp (1)

ROCP

Indicators

Rate of change Percentage

SYNTAX **Rocp(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Rate of change Percentage

ADDITIONAL The Rate of Change Percentage is an oscillator that displays the difference in
INFO percentage between the current price and the price x-time periods ago.
The Rate of change indicator show overbought/oversold areas like many others
indicators.
Overbought means that the stock price is expected to fall while oversold means
that the stock price is expected to fall.
But, often extremely overbought/oversold readings usually imply a
continuation of the current trend.
Formula : $(\text{price} - \text{prevPrice}) / \text{prevPrice}$

EXAMPLE Rocp(close, 14)

1.9.121 Rocr100 (0)

ROCR100

Indicators

Rate of change ratio (scale 100)

SYNTAX **Rocr100(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Rate of change ratio (scale 100)

ADDITIONAL The Rate of Change ratio 100 scale is an oscillator that displays the difference
INFO (in a scale of 100) between the current price and the price x-time periods ago.
The Rate of change indicator show overbought/oversold areas like many others
indicators.
Overbought means that the stock price is expected to fall while oversold means
that the stock price is expected to fall.
But, often extremely overbought/oversold readings usually imply a
continuation of the current trend.
Formula : $(\text{price}/\text{prevPrice}) * 100$

EXAMPLE Rocr100(14)

1.9.122 Rocr100 (1)

ROCR100

Indicators

Rate of change ratio (scale 100)

SYNTAX **Rocr100(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Rate of change ratio (scale 100)

ADDITIONAL The Rate of Change ratio 100 scale is an oscillator that displays the difference
INFO (in a scale of 100) between the current price and the price x-time periods ago.
 The Rate of change indicator show overbought/oversold areas like many others
 indicators.
 Overbought means that the stock price is expected to fall while oversold means
 that the stock price is expected to fall.
 But, often extremely overbought/oversold readings usually imply a
 continuation of the current trend.
 Formula : $(\text{price}/\text{prevPrice}) * 100$

EXAMPLE Rocr100(close, 14)

1.9.123 Rocr (0)

ROCR

Indicators

Rate of change ratio

SYNTAX **Rocr(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Rate of change ratio

ADDITIONAL INFO The Rate of Change ratio is an oscillator that displays the difference (ratio) between the current price and the price x-time periods ago.
The Rate of change indicator show overbought/oversold areas like many others indicators.
Overbought means that the stock price is expected to fall while oversold means that the stock price is expected to fall.
But, often extremely overbought/oversold readings usually imply a continuation of the current trend.
Formula : (price/prevPrice)

EXAMPLE Rocr(14)

1.9.124 Rocr (1)

ROCR

Indicators

Rate of change ratio

SYNTAX **Rocr(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Rate of change ratio

ADDITIONAL The Rate of Change ratio is an oscillator that displays the difference (ratio)
INFO between the current price and the price x-time periods ago.
 The Rate of change indicator show overbought/oversold areas like many others
 indicators.
 Overbought means that the stock price is expected to fall while oversold means
 that the stock price is expected to fall.
 But, often extremely overbought/oversold readings usually imply a
 continuation of the current trend.
 Formula : (price/prevPrice)

EXAMPLE Rocr(close, 14)

1.9.125 Rsi (0)

RSI

Indicators

Relative Strength Index

SYNTAX **Rsi(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Relative Strength Index

ADDITIONAL The Wilder's Relative Strength Index is a rate of change oscillator.
INFO Relative Strength Index does not compare the relative performance of one stock to another, instead it compares the price of a stock to itself.
A reading of 70% or higher is generally an overbought position. Conversely, values near the 30% level should be considered an indication the situation has become oversold.
When the stock price is trending, use Relative Strength Index to trade strictly with the trend.
The Wilder's Relative Strength Index was developed by J. Welles Wilder, Jr.

EXAMPLE Rsi(14)

1.9.126 Rsi (1)

RSI

Indicators

Relative Strength Index

SYNTAX **Rsi(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Relative Strength Index

ADDITIONAL The Wilder's Relative Strength Index is a rate of change oscillator.
INFO Relative Strength Index does not compare the relative performance of one stock to another, instead it compares the price of a stock to itself.
A reading of 70% or higher is generally an overbought position. Conversely, values near the 30% level should be considered an indication the situation has become oversold.
When the stock price is trending, use Relative Strength Index to trade strictly with the trend.
The Wilder's Relative Strength Index was developed by J. Welles Wilder, Jr.

EXAMPLE Rsi(close, 14)

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1.9.127 Sar (0)

SAR

Parabolic SAR

Indicators

SYNTAX	Sar(ARRAY acceleration, ARRAY maximum)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Parabolic SAR
ADDITIONAL INFO	The Parabolic SAR sets trailing price stops for long or short positions Parabolic SAR was described by Welles Wilder in his 1978 book, "New Concepts in Technical Trading Systems".
EXAMPLE	Sar(0.02, 0.2)

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1.9.128 Sar (1)

SAR

Indicators

Parabolic SAR

SYNTAX	Sar(ARRAY high, ARRAY low, ARRAY acceleration, ARRAY maximum)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Parabolic SAR
ADDITIONAL INFO	The Parabolic SAR sets trailing price stops for long or short positions Parabolic SAR was described by Welles Wilder in his 1978 book, "New Concepts in Technical Trading Systems".
EXAMPLE	Sar(high, low, 0.02, 0.2)

1.9.129 SarExt (0)

SAREXT

Indicators

Parabolic SAR - Extended

SYNTAX	SarExt(ARRAY startvalue, ARRAY offsetonreverse, ARRAY accelerationinitlong, ARRAY accelerationlong, ARRAY accelerationmaxlong, ARRAY accelerationinitshort, ARRAY accelerationshort, ARRAY accelerationmaxshort)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Parabolic SAR - Extended
ADDITIONAL INFO	The Parabolic SAR sets trailing price stops for long or short positions Parabolic SAR was described by Welles Wilder in his 1978 book, "New Concepts in Technical Trading Systems".
EXAMPLE	SarExt(0, 0, 0.02, 0.02, 0.2, 0.02, 0.02, 0.2)

1.9.130 SarExt (1)

SAREXT

Indicators

Parabolic SAR - Extended

SYNTAX	SarExt(ARRAY high, ARRAY low, ARRAY startvalue, ARRAY offsetonreverse, ARRAY accelerationinitlong, ARRAY accelerationlong, ARRAY accelerationmaxlong, ARRAY accelerationinitshort, ARRAY accelerationshort, ARRAY accelerationmaxshort)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Parabolic SAR - Extended
ADDITIONAL INFO	The Parabolic SAR sets trailing price stops for long or short positions Parabolic SAR was described by Welles Wilder in his 1978 book, "New Concepts in Technical Trading Systems".
EXAMPLE	SarExt(high, low, 0, 0, 0.02, 0.02, 0.2, 0.02, 0.02, 0.2)

1.9.131 Sma (0)

SMA

Indicators

Simple Moving Average

SYNTAX **Sma(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Simple Moving Average

ADDITIONAL The Simple Moving Average is calculated by summing the closing prices of the
INFO security for a period of time and then dividing this total by the number of time
 periods. the SMA is basically the average stock price over time.
 One of the moving average use is to show the trend direction of a security
 price.

EXAMPLE Sma(14)

1.9.132 Sma (1)

SMA

Indicators

Simple Moving Average

SYNTAX **Sma(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Simple Moving Average

ADDITIONAL The Simple Moving Average is calculated by summing the closing prices of the
INFO security for a period of time and then dividing this total by the number of time
 periods. the SMA is basically the average stock price over time.
 One of the moving average use is to show the trend direction of a security
 price.

EXAMPLE Sma(close, 14)

1.9.133 Stddev (0)

STDDEV
Standard Deviation

Indicators

SYNTAX **Stddev(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Standard Deviation

ADDITIONAL Standard Deviation is a statistical measurement of volatility. It measures how
INFO widely values range from the average value.
 High standard deviation means high volatility and large difference between the
 closing prices and the average closing price.

EXAMPLE Stddev(100)

1.9.134 Stddev (1)

STDDEV
Standard Deviation

Indicators

SYNTAX **Stddev(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Standard Deviation

ADDITIONAL
INFO Standard Deviation is a statistical measurement of volatility. It measures how widely values range from the average value.
High standard deviation means high volatility and large difference between the closing prices and the average closing price.

EXAMPLE Stddev(close, 100)

1.9.135 StochFastd (0)

STOCHFASD
Stochastic Fast D

Indicators

SYNTAX **StochFastd(ARRAY fastk_period, ARRAY fastd_period, ENUM fastd_movingaveragetype)**

RETURNS NUMERIC ARRAY

DESCRIPTION Stochastic Fast D

ADDITIONAL
INFO

EXAMPLE StochFastd(5, 5, _MaSma)

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1.9.136 StochFastd (1)

STOCHFASD
Stochastic Fast D

Indicators

SYNTAX **StochFastd(ARRAY high, ARRAY low, ARRAY close, ARRAY fastk_period, ARRAY fastd_period, ENUM fastd_movingaveragetype)**

RETURNS **NUMERIC ARRAY**

DESCRIPTION **Stochastic Fast D**

**ADDITIONAL
INFO**

EXAMPLE **StochFastd(high, low, close, 5, 5, _MaSma)**

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1.9.137 StochFastk (0)

STOCHFASK
Stochastic Fast K

Indicators

SYNTAX **StochFastk(ARRAY fastk_period)**

RETURNS NUMERIC ARRAY

DESCRIPTION Stochastic Fast K

ADDITIONAL
INFO

EXAMPLE StochFastk(5)

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1.9.138 StochFastk (1)

STOCHFASK
Stochastic Fast K

Indicators

SYNTAX **StochFastk(ARRAY high, ARRAY low, ARRAY close, ARRAY
fastk_period)**

RETURNS NUMERIC ARRAY

DESCRIPTION Stochastic Fast K

ADDITIONAL
INFO

EXAMPLE StochFastk(high, low, close, 5)

1.9.139 StochRsiFastd (0)

STOCHRSIFASTD

Indicators

Stochastic Relative Strength Index Fast D

SYNTAX **StochRsiFastd(ARRAY timeperiod, ARRAY fastk_period, ARRAY fastd_period, ENUM fastd_movingaveragetype)**

RETURNS NUMERIC ARRAY

DESCRIPTION Stochastic Relative Strength Index Fast D

ADDITIONAL
INFO

EXAMPLE StochRsiFastd(15, 5, 5, _MaSma)

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1.9.140 StochRsiFastd (1)

STOCHRSIFASTD

Indicators

Stochastic Relative Strength Index Fast D

SYNTAX **StochRsiFastd(ARRAY close, ARRAY timeperiod, ARRAY fastk_period, ARRAY fastd_period, ENUM fastd_movingaveragetype)**

RETURNS NUMERIC ARRAY

DESCRIPTION Stochastic Relative Strength Index Fast D

ADDITIONAL
INFO

EXAMPLE StochRsiFastd(close, 15, 5, 5, _MaSma)

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1.9.141 StochRsiFastk (0)

STOCHRSIFASTK

Indicators

Stochastic Relative Strength Index Fast K

SYNTAX **StochRsiFastk(ARRAY timeperiod, ARRAY fastk_period)**

RETURNS NUMERIC ARRAY

DESCRIPTION Stochastic Relative Strength Index Fast K

ADDITIONAL
INFO

EXAMPLE StochRsiFastk(15, 5)

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1.9.142 StochRsiFastk (1)

STOCHRSIFASTK

Indicators

Stochastic Relative Strength Index Fast K

SYNTAX **StochRsiFastk(ARRAY close, ARRAY timeperiod, ARRAY fastk_period)**

RETURNS NUMERIC ARRAY

DESCRIPTION Stochastic Relative Strength Index Fast K

ADDITIONAL
INFO

EXAMPLE StochRsiFastk(close, 15, 5)

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1.9.143 StochSlowd (0)

STOCHSLOWD
Stochastic Slow D

Indicators

SYNTAX **StochSlowd(ARRAY fastk_period, ARRAY slowk_period, ENUM
slowk_movingaveragetype, ARRAY slowd_period, ENUM
slowd_movingaveragetype)**

RETURNS NUMERIC ARRAY

DESCRIPTION Stochastic Slow D

**ADDITIONAL
INFO**

EXAMPLE StochSlowd(5, 3, _MaSma, 3, _MaSma)

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1.9.144 StochSlowd (1)

STOCHSLOWD
Stochastic Slow D

Indicators

SYNTAX	StochSlowd(ARRAY high, ARRAY low, ARRAY close, ARRAY volume, ARRAY fastk_period, ARRAY slowk_period, ENUM slowk_movingaveragetype, ARRAY slowd_period, ENUM slowd_movingaveragetype)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Stochastic Slow D
ADDITIONAL INFO	
EXAMPLE	StochSlowd(high, low, close, volume, 5, 3, _MaSma, 3, _MaSma)

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1.9.145 StochSlowk (0)

STOCHSLOWK
Stochastic Slow K

Indicators

SYNTAX **StochSlowk(ARRAY fastk_period, ARRAY slowk_period, ENUM
slowk_movingaveragetype)**

RETURNS NUMERIC ARRAY

DESCRIPTION Stochastic Slow K

**ADDITIONAL
INFO**

EXAMPLE StochSlowk(5, 3, _MaSma)

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1.9.146 StochSlowk (1)

STOCHSLOWK
Stochastic Slow K

Indicators

SYNTAX	StochSlowk(ARRAY high, ARRAY low, ARRAY close, ARRAY volume, ARRAY fastk_period, ARRAY slowk_period, ENUM slowk_movingaveragetype)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Stochastic Slow K
ADDITIONAL INFO	
EXAMPLE	StochSlowk(high, low, close, volume, 5, 3, _MaSma)

1.9.147 T3 (0)

T3

Indicators

Triple Exponential Moving Average (T3)

SYNTAX **T3(ARRAY timeperiod, ARRAY vfactor)**

RETURNS NUMERIC ARRAY

DESCRIPTION Triple Exponential Moving Average (T3)

ADDITIONAL The T3 is a type of moving average, or smoothing function. It use the DEMA
INFO in its calculations; the DEMA which use the MA in its proper calculations.

EXAMPLE T3(14, 1)

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1.9.148 T3 (1)

T3

Indicators

Triple Exponential Moving Average (T3)

SYNTAX **T3(ARRAY close, ARRAY timeperiod, ARRAY vfactor)**

RETURNS NUMERIC ARRAY

DESCRIPTION Triple Exponential Moving Average (T3)

ADDITIONAL The T3 is a type of moving average, or smoothing function. It use the DEMA
INFO in its calculations; the DEMA which use the MA in its proper calculations.

EXAMPLE T3(close, 14, 1)

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1.9.149 Tema (0)

TEMA

Indicators

Triple Exponential Moving Average

SYNTAX **Tema(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Triple Exponential Moving Average

ADDITIONAL INFO The TEMA is a smoothing indicator with less lag than a straight exponential moving average.

EXAMPLE Tema(14)

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1.9.150 Tema (1)

TEMA

Indicators

Triple Exponential Moving Average

SYNTAX **Tema(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Triple Exponential Moving Average

ADDITIONAL The TEMA is a smoothing indicator with less lag than a straight exponential
INFO moving average.

EXAMPLE Tema(close, 14)

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1.9.151 Trange (0)

TRANGE

True Range

Indicators

SYNTAX **Trange()**

RETURNS NUMERIC ARRAY

DESCRIPTION True Range

ADDITIONAL INFO The True Range function is used to determine the normal trading range of a stock or commodity.

EXAMPLE Trange()

1.9.152 Trange (1)

TRANGE

True Range

Indicators

SYNTAX **Trange(ARRAY high, ARRAY low, ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION True Range

ADDITIONAL The True Range function is used to determine the normal trading range of a
INFO stock or commodity.

EXAMPLE Trange(high, low, close)

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1.9.153 Trima (0)

TRIMA

Triangular Moving Average

Indicators

SYNTAX **Trima(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Triangular Moving Average

ADDITIONAL The Triangular Moving Average is equivalent to a Simple Moving Average of
INFO a Simple Moving Average.

EXAMPLE Trima(14)

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1.9.154 Trima (1)

TRIMA

Triangular Moving Average

Indicators

SYNTAX **Trima(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Triangular Moving Average

ADDITIONAL The Triangular Moving Average is equivalent to a Simple Moving Average of
INFO a Simple Moving Average.

EXAMPLE Trima(close, 14)

1.9.155 Trix (0)

TRIX

Indicators

Trix

SYNTAX **Trix(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION 1-day Rate-Of-Change (ROC) of a Triple Smooth EMA

ADDITIONAL TRIX is an indicator that correspond to a percent rate-of-change of a triple-
INFO smoothed exponential moving average of a closing price.
It is a momentum indicator which moves up over and under a zero line. A
movement above is bullish, while a movement below is bearish.

EXAMPLE Trix(14)

1.9.156 Trix (1)

TRIX

Indicators

Trix

SYNTAX	Trix(ARRAY close, ARRAY timeperiod)
RETURNS	NUMERIC ARRAY
DESCRIPTION	1-day Rate-Of-Change (ROC) of a Triple Smooth EMA
ADDITIONAL INFO	TRIX is an indicator that correspond to a percent rate-of-change of a triple-smoothed exponential moving average of a closing price. It is a momentum indicator which moves up over and under a zero line. A movement above is bullish, while a movement below is bearish.
EXAMPLE	Trix(close, 14)

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1.9.157 Tsf (0)

TSF

Indicators

Time Series Forecast

SYNTAX **Tsf(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Time Series Forecast

ADDITIONAL The Time Series Forecast function displays the statistical trend of a security's
INFO price over a specified time period based on linear regression analysis.

EXAMPLE Tsf(14)

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1.9.158 Tsf (1)

TSF
Time Series Forecast

Indicators

SYNTAX	Tsf(ARRAY close, ARRAY timeperiod)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Time Series Forecast
ADDITIONAL INFO	The Time Series Forecast function displays the statistical trend of a security's price over a specified time period based on linear regression analysis.
EXAMPLE	Tsf(close, 14)

1.9.159 TypPrice (0)

TYPPRICE
Typical Price

Indicators

SYNTAX **TypPrice(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Typical Price

ADDITIONAL
INFO The Typical Price function calculates the average of the high, low, and closing prices for the day.
Its an interesting function as it include in one line information for the entire trading day.
You can also compare this line to its moving average to determine if a security is trending.

EXAMPLE TypPrice(14)

1.9.160 TypPrice (1)

TYPPRICE
Typical Price

Indicators

SYNTAX **TypPrice(ARRAY high, ARRAY low, ARRAY close)**

RETURNS NUMERIC ARRAY

DESCRIPTION Typical Price

ADDITIONAL
INFO The Typical Price function calculates the average of the high, low, and closing prices for the day.
Its an interesting function as it include in one line information for the entire trading day.
You can also compare this line to its moving average to determine if a security is trending.

EXAMPLE TypPrice(high, low, close)

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1.9.161 UltOsc (0)

ULTOSC
Ultimate Oscillator

Indicators

SYNTAX	UltOsc(ARRAY timeperiod1, ARRAY timeperiod2, ARRAY timeperiod3)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Ultimate Oscillator
ADDITIONAL INFO	The Ultimate Oscillator combines a stock's price action during three different time frames into one oscillator. Oversold territory is below 30 while overbought territory is above 70. The Ultimate Oscillator was developed by Larry Williams.
EXAMPLE	UltOsc(7, 14, 28)

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1.9.162 UltOsc (1)

ULTOSC
Ultimate Oscillator

Indicators

SYNTAX	UltOsc(ARRAY high, ARRAY low, ARRAY close, ARRAY timeperiod1, ARRAY timeperiod2, ARRAY timeperiod3)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Ultimate Oscillator
ADDITIONAL INFO	The Ultimate Oscillator combines a stock's price action during three different time frames into one oscillator. Oversold territory is below 30 while overbought territory is above 70. The Ultimate Oscillator was developed by Larry Williams.
EXAMPLE	UltOsc(high, low, close, 7, 14, 28)

1.9.163 Var (0)

VAR

Indicators

Variance

SYNTAX **Var(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Variance

ADDITIONAL The variance is a statistical measure of the dispersion of values around the
INFO expected value.
 The standard deviation is the square root of the variance.

EXAMPLE Var(100)

1.9.164 Var (1)

VAR

Indicators

Variance

SYNTAX	Var(ARRAY close, ARRAY timeperiod)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Variance
ADDITIONAL INFO	The variance is a statistical measure of the dispersion of values around the expected value. The standard deviation is the square root of the variance.
EXAMPLE	Var(close, 100)

[\[TOP\]](#)

1.9.165 WclPrice (0)

WCLPRICE

Weighted Close Price

Indicators

SYNTAX **WclPrice()**

RETURNS NUMERIC ARRAY

DESCRIPTION Weighted Close Price

ADDITIONAL The Weighted Close indicator calculates an average of each day's price.
INFO the Weighted Close provides a simplified view of the day.

EXAMPLE WclPrice()

[\[TOP\]](#)

1.9.166 WclPrice (1)

WCLPRICE

Weighted Close Price

Indicators

SYNTAX	WclPrice(ARRAY high, ARRAY low, ARRAY close)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Weighted Close Price
ADDITIONAL INFO	The Weighted Close indicator calculates an average of each day's price. the Weighted Close provides a simplified view of the day.
EXAMPLE	WclPrice(high, low, close)

1.9.167 Willr (0)

WILLR

Williams' %R

Indicators

SYNTAX **Willr(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Williams' %R

ADDITIONAL
INFO Williams %R is a momentum indicator that is designed to identify overbought and oversold areas in a nontrending market.
A bullish signal happen when the indicator is in an oversold area and the price change direction to the upward.
The opposite for the bearish signal.
Williams %R was developed by Larry Williams.

EXAMPLE Willr(14)

1.9.168 Willr (1)

WILLR

Indicators

Williams' %R

SYNTAX **Willr(ARRAY high, ARRAY low, ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Williams' %R

ADDITIONAL INFO Williams %R is a momentum indicator that is designed to identify overbought and oversold areas in a nontrending market.
A bullish signal happen when the indicator is in an oversold area and the price change direction to the upward.
The opposite for the bearish signal.
Williams %R was developed by Larry Williams.

EXAMPLE Willr(high, low, close, 14)

[\[TOP\]](#)

1.9.169 Wma (0)

WMA

Weighted Moving Average

Indicators

SYNTAX **Wma(ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Weighted Moving Average

ADDITIONAL A Weighted Moving Average is a Moving Average indicator that shows the
INFO average value of a security's price over a period of time with special emphasis
 on the more recent portions of the time period under analysis.

EXAMPLE Wma(14)

[\[TOP\]](#)

1.9.170 Wma (1)

WMA

Indicators

Weighted Moving Average

SYNTAX **Wma(ARRAY close, ARRAY timeperiod)**

RETURNS NUMERIC ARRAY

DESCRIPTION Weighted Moving Average

ADDITIONAL A Weighted Moving Average is a Moving Average indicator that shows the
INFO average value of a security's price over a period of time with special emphasis
 on the more recent portions of the time period under analysis.

EXAMPLE Wma(close, 14)

1.10 Math

1.10.1 Absolute

ABSOLUTE
Absolute Value

Math

SYNTAX **Absolute(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculate the absolute value of each element in the array

ADDITIONAL
INFO

EXAMPLE Absolute(-1)

[\[TOP\]](#)

1.10.2 Atan

ATAN

Atan

Math

SYNTAX **Atan(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculate the arc tangent of each element in the array

ADDITIONAL
INFO

EXAMPLE Atan(1)

[\[TOP\]](#)

1.10.3 Avg (0)

AVG
Average

Math

SYNTAX **Avg(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculates the average of the ARRAY for all the lookback periods (current bar is included)

ADDITIONAL
INFO

EXAMPLE Avg(close)

[\[TOP\]](#)

1.10.4 Avg (1)

AVG
Average

Math

SYNTAX **Avg(ARRAY array, ARRAY period)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculates the average of the ARRAY for the specified number of lookback periods (current bar is included)

ADDITIONAL
INFO

EXAMPLE Avg(close, 10)

[\[TOP\]](#)

1.10.5 Ceil

CEIL
Ceiling

Math

SYNTAX **Ceil(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION For each element in the array, calculate the lowest integer greater than or equal to the element value

ADDITIONAL
INFO

EXAMPLE Ceil(1.2)

[\[TOP\]](#)

1.10.6 Cos

COS

Math

Cos

SYNTAX **Cos(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculate the cosinus of each element in the array

ADDITIONAL
INFO

EXAMPLE Cos(1)

[\[TOP\]](#)

1.10.7 Cosh

COSH

Cosh

Math

SYNTAX **Cosh(**ARRAY** array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculate the hyperbolic cosine of each element in the array

ADDITIONAL
INFO

EXAMPLE Cosh(1)

[\[TOP\]](#)

1.10.8 DivRem

DIVREM

DivRem

Math

SYNTAX **DivRem(ARRAY array, ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION For each element in the array, calculate the quotient

ADDITIONAL
INFO

EXAMPLE DivRem(1, 1)

[\[TOP\]](#)

1.10.9 Exp

EXP

Math

Exp

SYNTAX **Exp(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION For each element in the array, calculate 'e' raised to the element value

ADDITIONAL
INFO

EXAMPLE Exp(1)

[\[TOP\]](#)

1.10.10 Floor

FLOOR

Math

Floor

SYNTAX **Floor(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION For each element in the array, calculate the largest integer less than or equal to the element value

ADDITIONAL
INFO

EXAMPLE Floor(1.2)

[\[TOP\]](#)

1.10.11 Frac

FRAC

Math

Frac

SYNTAX **Frac(*ARRAY* array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculate the fractional part of each element in the array

ADDITIONAL
INFO

EXAMPLE Frac(1.2)

[\[TOP\]](#)

1.10.12 IeeeRemainder

IEEEREMAINDER

Math

IeeeRemainder

SYNTAX **IeeeRemainder(ARRAY array, ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION For each element in the array, calculate the remainder resulting from the division of the element value by the specified number

ADDITIONAL
INFO

EXAMPLE IeeeRemainder(1, 1)

[\[TOP\]](#)

1.10.13 Int

INT

Math

Int

SYNTAX **Int(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculate the integer part of each element in the array

ADDITIONAL
INFO

EXAMPLE Int(1.2)

[\[TOP\]](#)

1.10.14 Log10

LOG10

Log10

Math

SYNTAX **Log10(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculate the base 10 logarithm of each element in the array

ADDITIONAL
INFO

EXAMPLE Log10(10)

[\[TOP\]](#)

1.10.15 Log

LOG

Math

Log

SYNTAX **Log(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculate the natural logarithm (ln) of each element in the array

ADDITIONAL
INFO

EXAMPLE Log(1)

[\[TOP\]](#)

1.10.16 Max

MAX

Max

Math

SYNTAX **Max(ARRAY array, ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION For each bar of the ARRAY, returns the largest one

ADDITIONAL
INFO

EXAMPLE Max(perf(close, 10), 0)

[\[TOP\]](#)

1.10.17 Min

MIN
Min

Math

SYNTAX **Min(ARRAY array, ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION For each bar of the ARRAY, returns the smallest one

ADDITIONAL
INFO

EXAMPLE Min(perf(close, 10), 0)

[\[TOP\]](#)

1.10.18 Pow

POW

Math

Pow

SYNTAX **Pow(ARRAY array, ARRAY power)**

RETURNS NUMERIC ARRAY

DESCRIPTION For each element in the array, raise the element value to the specified power

ADDITIONAL
INFO

EXAMPLE Pow(2, 2)

[\[TOP\]](#)

1.10.19 Random

RANDOM

Random Number

Math

SYNTAX **Random(ARRAY min, ARRAY max)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns a random number between min and max

ADDITIONAL
INFO

EXAMPLE Random(0, 100)

[\[TOP\]](#)

1.10.20 Round

ROUND
Round

Math

SYNTAX **Round(ARRAY array, ARRAY decimals)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculate the rounded value of each element in the array

ADDITIONAL
INFO

EXAMPLE Round(1.222, 2)

1.10.21 Sharpe

SHARPE

Sharpe

Math

SYNTAX	Sharpe(ARRAY array, ARRAY period)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Returns the sharpe ratio for the specified array and period
ADDITIONAL INFO	
EXAMPLE	Sharpe(close, 30)

[\[TOP\]](#)

1.10.22 Sign

SIGN
Sign

Math

SYNTAX **Sign(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculate the sign of each element in the array

ADDITIONAL
INFO

EXAMPLE Sign(1)

[\[TOP\]](#)

1.10.23 Sin

SIN
Sin

Math

SYNTAX **Sin(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculate the sinus of each element in the array

ADDITIONAL
INFO

EXAMPLE Sin(1)

[\[TOP\]](#)

1.10.24 Sinh

SINH
Sinh

Math

SYNTAX **Sinh(**ARRAY** array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculate the hyperbolic sine of each element in the array

ADDITIONAL
INFO

EXAMPLE Sinh(1)

[\[TOP\]](#)

1.10.25 Sqrt

SQRT
Sqrt

Math

SYNTAX **Sqrt(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculate the square root of each element in the array

ADDITIONAL
INFO

EXAMPLE Sqrt(4)

[\[TOP\]](#)

1.10.26 Sum (0)

SUM
Sum

Math

SYNTAX **Sum(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculates a cumulative sum of the ARRAY for all the lookback periods
(current bar is included)

ADDITIONAL
INFO

EXAMPLE Sum(perf(close, 10) > 0)

[\[TOP\]](#)

1.10.27 Sum (1)

SUM
Sum

Math

SYNTAX **Sum(ARRAY array, ARRAY period)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculates a cumulative sum of the ARRAY for the specified number of
lookback periods (current bar is included)

ADDITIONAL
INFO

EXAMPLE Sum(perf(close, 10) > 0, 20)

[\[TOP\]](#)

1.10.28 Tan

TAN
Tan

Math

SYNTAX **Tan(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculate the tangent of each element in the array

ADDITIONAL
INFO

EXAMPLE Tan(1)

[\[TOP\]](#)

1.10.29 Tanh

TANH

Tanh

Math

SYNTAX **Tanh(**ARRAY** array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculate the hyperbolic tangent of each element in the array

ADDITIONAL
INFO

EXAMPLE Tanh(1)

1.11 Optimal Signal

1.11.1 BSignal

BSIGNAL

Optimal Signal

Optimal signal

SYNTAX **BSignal(ARRAY min profit, ARRAY max drawdown, ARRAY minimum days, ARRAY maximum days)**

RETURNS NUMERIC ARRAY

DESCRIPTION Gives you the best long and short entries and exits depending on the parameters you choose
Example if you choose a minimum profit of 20 percent, a maximum drawdown of 10 percent, a minimum number of bars equal to 10 and a maximum number of bars equal to 100
The system will give you the most profitable trades that meet these criteria
Plot the returned array in a graph that contains CandleStick data to see entries and exits arrows
Click on those arrows to see additional information

ADDITIONAL INFO

EXAMPLE BSignal(30, -10, -1, 300)

1.11.2 BSignalLong

BSIGNALLONG

Optimal Signal

Optimal long signal

SYNTAX **BSignalLong(ARRAY min profit, ARRAY max drawdown, ARRAY minimum days, ARRAY maximum days)**

RETURNS NUMERIC ARRAY

DESCRIPTION Gives you the best long entries and exits depending on the parameters you choose
Example if you choose a minimum profit of 20 percent, a maximum drawdown of 10 percent,
a minimum number of bars equal to 10 and a maximum number of bars equal to 100
The system will give you the most profitable trades that meet these criteria
Plot the returned array in a graph that contains CandleStick data to see entries and exits arrows
Click on those arrows to see additional information

**ADDITIONAL
INFO**

EXAMPLE BSignalLong(30, -10, -1, 300)

1.11.3 BSignalShort

BSIGNALSHORT

Optimal Signal

Optimal short signal

SYNTAX **BSignalShort(ARRAY min profit, ARRAY max drawdown, ARRAY minimum days, ARRAY maximum days)**

RETURNS NUMERIC ARRAY

DESCRIPTION Gives you the best short entries and exits depending on the parameters you choose
Example if you choose a minimum profit of 20 percent, a maximum drawdown of 10 percent,
a minimum number of bars equal to 10 and a maximum number of bars equal to 100
The system will give you the most profitable trades that meet these criteria
Plot the returned array in a graph that contains CandleStick data to see entries and exits arrows
Click on those arrows to see additional information

**ADDITIONAL
INFO**

EXAMPLE BSignalShort(30, -10, -1, 300)

1.11.4 EntryLongProfit

ENTRYLONGPROFIT

Optimal Signal

SYNTAX	EntryLongProfit(ARRAY max drawdown, ARRAY maximum days)
RETURNS	NUMERIC ARRAY
DESCRIPTION	For each bar in the 'close' array, calculates the performance of a system that buy the current symbol at the next open bar and sell it when the system drawdown becomes higher than the specified number or the maximum number of bar is reached
ADDITIONAL INFO	
EXAMPLE	EntryLongProfit(-10, -1)

1.11.5 EntryLongProfitCond

ENTRYLONGPROFITCOND

Optimal Signal

SYNTAX	EntryLongProfitCond(ARRAY condition, ARRAY max drawdown, ARRAY maximum days)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Calculates the performance of a system that buy the current symbol at the next open bar and sell it when the system drawdown becomes higher than the specified number or the maximum number of bar is reached , then move to the bar number (next bar number + last trade holding period)
ADDITIONAL INFO	
EXAMPLE	EntryLongProfitCond(1, -10, -1)

1.11.6 EntryLongProfitCondExitRule

ENTRYLONGPROFITCONDEXITRULE

Optimal Signal

SYNTAX **EntryLongProfitCondExitRule(ARRAY condition, ARRAY exit, ARRAY max drawdown, ARRAY maximum days)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculates the performance of a system that buy the current symbol at the next open bar and sell it when the system drawdown becomes higher than the specified number or the maximum number of bar is reached or the exit rule is TRUE, then move to the bar number (next bar number + last trade holding period)

ADDITIONAL
INFO

EXAMPLE EntryLongProfitCondExitRule(1, 1, -10, -1)

1.11.7 EntryLongProfitExitRule

ENTRYLONGPROFITEXITRULE

Optimal Signal

SYNTAX	EntryLongProfitExitRule(ARRAY exit, ARRAY max drawdown, ARRAY maximum days)
RETURNS	NUMERIC ARRAY
DESCRIPTION	For each bar in the 'close' array, calculates the performance of a system that buy the current symbol at the next open bar and sell it when the system drawdown becomes higher than the specified number or the maximum number of bar is reached or the exit rule is TRUE
ADDITIONAL INFO	
EXAMPLE	EntryLongProfitExitRule(1, -10, -1)

[\[TOP\]](#)

1.11.8 EntryLongProfitPerBar

ENTRYLONGPROFITPERBAR

Optimal Signal

SYNTAX **EntryLongProfitPerBar(ARRAY max drawdown, ARRAY maximum days)**

RETURNS NUMERIC ARRAY

DESCRIPTION For each bar in the 'close' array, calculates the performance PER BAR of a system that buy the current symbol at the next open bar and sell it when the system drawdown becomes higher than the specified number or the maximum number of bar is reached

ADDITIONAL
INFO

EXAMPLE EntryLongProfitPerBar(-10, -1)

[\[TOP\]](#)

1.11.9 EntryLongProfitPerBarCond

ENTRYLONGPROFITPERBARCOND

Optimal Signal

SYNTAX **EntryLongProfitPerBarCond(ARRAY condition, ARRAY max
drawdown, ARRAY maximum days)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculates the performance PER BAR of a system that buy the current symbol
at the next open bar and sell it when the system drawdown becomes
higher than the specified number or the maximum number of bar is reached ,
then move to the bar number (next bar number + last trade holding period)

ADDITIONAL
INFO

EXAMPLE EntryLongProfitPerBarCond(1, -10, -1)

1.11.10 EntryLongProfitPerBarCondExitRule

ENTRYLONGPROFITPERBARCONDEXITRULE

Optimal Signal

SYNTAX **EntryLongProfitPerBarCondExitRule(ARRAY condition, ARRAY exit, ARRAY max drawdown, ARRAY maximum days)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculates the performance PER BAR of a system that buy the current symbol at the next open bar and sell it when the system drawdown becomes higher than the specified number or the maximum number of bar is reached or the exit rule is TRUE,
then move to the bar number (next bar number + last trade holding period)

ADDITIONAL
INFO

EXAMPLE EntryLongProfitPerBarCondExitRule(1, 1, -10, -1)

1.11.11 EntryLongProfitPerBarExitRule

ENTRYLONGPROFITPERBAREXITRULE

Optimal Signal

SYNTAX **EntryLongProfitPerBarExitRule(ARRAY exit, ARRAY max drawdown, ARRAY maximum days)**

RETURNS NUMERIC ARRAY

DESCRIPTION For each bar in the 'close' array, calculates the performance PER BAR of a system that buy the current symbol at the next open bar and sell it when the system drawdown becomes higher than the specified number or the maximum number of bar is reached or the exit rule is TRUE

ADDITIONAL
INFO

EXAMPLE EntryLongProfitPerBarExitRule(1, -10, -1)

1.11.12 EntryShortProfit

ENTRYSHORTPROFIT

Optimal Signal

SYNTAX **EntryShortProfit(ARRAY max drawdown, ARRAY maximum days)**

RETURNS NUMERIC ARRAY

DESCRIPTION For each bar in the 'close' array, calculates the performance of a system that short the current symbol at the next open bar and cover it when the system drawdown becomes higher than the specified number or the maximum number of bar is reached

ADDITIONAL
INFO

EXAMPLE EntryShortProfit(-10, -1)

1.11.13 EntryShortProfitCond

ENTRYSHORTPROFITCOND

Optimal Signal

SYNTAX	EntryShortProfitCond(ARRAY condition, ARRAY max drawdown, ARRAY maximum days)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Calculates the performance of a system that short the current symbol at the next open bar and cover it when the system drawdown becomes higher than the specified number or the maximum number of bar is reached , then move to the bar number (next bar number + last trade holding period)
ADDITIONAL INFO	
EXAMPLE	EntryShortProfitCond(1, -10, -1)

1.11.14 EntryShortProfitCondExitRule

ENTRYSHORTPROFITCONDEXITRULE

Optimal Signal

SYNTAX **EntryShortProfitCondExitRule(ARRAY condition, ARRAY exit, ARRAY max drawdown, ARRAY maximum days)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculates the performance of a system that short the current symbol at the next open bar and cover it when the system drawdown becomes higher than the specified number or the maximum number of bar is reached or the exit rule is TRUE, then move to the bar number (next bar number + last trade holding period)

ADDITIONAL
INFO

EXAMPLE EntryShortProfitCondExitRule(1, 1, -10, -1)

1.11.15 EntryShortProfitExitRule

ENTRYSHORTPROFITEXITRULE

Optimal Signal

SYNTAX	EntryShortProfitExitRule(ARRAY exit, ARRAY max drawdown, ARRAY maximum days)
RETURNS	NUMERIC ARRAY
DESCRIPTION	For each bar in the 'close' array, calculates the performance of a system that short the current symbol at the next open bar and cover it when the system drawdown becomes higher than the specified number or the maximum number of bar is reached or the exit rule is TRUE
ADDITIONAL INFO	
EXAMPLE	EntryShortProfitExitRule(1, -10, -1)

[\[TOP\]](#)

1.11.16 EntryShortProfitPerBar

ENTRYSHORTPROFITPERBAR

Optimal Signal

SYNTAX	EntryShortProfitPerBar(ARRAY max drawdown, ARRAY maximum days)
RETURNS	NUMERIC ARRAY
DESCRIPTION	For each bar in the 'close' array, calculates the performance PER BAR of a system that short the current symbol at the next open bar and cover it when the system drawdown becomes higher than the specified number or the maximum number of bar is reached
ADDITIONAL INFO	
EXAMPLE	EntryShortProfitPerBar(-10, -1)

1.11.17 EntryShortProfitPerBarCond

ENTRYSHORTPROFITPERBARCOND

Optimal Signal

SYNTAX	EntryShortProfitPerBarCond(ARRAY condition, ARRAY max drawdown, ARRAY maximum days)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Calculates the performance PER BAR of a system that short the current symbol at the next open bar and cover it when the system drawdown becomes higher than the specified number or the maximum number of bar is reached , then move to the bar number (next bar number + last trade holding period)
ADDITIONAL INFO	
EXAMPLE	EntryShortProfitPerBarCond(1, -10, -1)

1.11.18 EntryShortProfitPerBarCondExitRule

ENTRYSHORTPROFITPERBARCONDEXITRULE

Optimal Signal

SYNTAX **EntryShortProfitPerBarCondExitRule(ARRAY condition, ARRAY exit, ARRAY max drawdown, ARRAY maximum days)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculates the performance PER BAR of a system that short the current symbol at the next open bar and cover it when the system drawdown becomes higher than the specified number or the maximum number of bar is reached or the exit rule is TRUE, then move to the bar number (next bar number + last trade holding period)

ADDITIONAL
INFO

EXAMPLE EntryShortProfitPerBarCondExitRule(1, 1, -10, -1)

1.11.19 EntryShortProfitPerBarExitRule

ENTRYSHORTPROFITPERBAREXITRULE

Optimal Signal

SYNTAX **EntryShortProfitPerBarExitRule(ARRAY exit, ARRAY max drawdown, ARRAY maximum days)**

RETURNS NUMERIC ARRAY

DESCRIPTION For each bar in the 'close' array, calculates the performance PER BAR of a system that short the current symbol at the next open bar and cover it when the system drawdown becomes higher than the specified number or the maximum number of bar is reached or the exit rule is TRUE

ADDITIONAL
INFO

EXAMPLE EntryShortProfitPerBarExitRule(1, -10, -1)

1.12 Pre-calculated-value

1.12.1 GetPreCalculatedGlobal

GETPRECALCULATEDGLOBAL

Pre-calculated-value

Pre-calculated global value

SYNTAX **GetPreCalculatedGlobal(STRING field)**

RETURNS TEXT ARRAY

DESCRIPTION Get a global pre-calculated value (example: Last quote date)

ADDITIONAL
INFO

EXAMPLE GetPreCalculatedGlobal("Last quote date")

[\[TOP\]](#)

1.12.2 GetPreCalculatedValue (0)

GETPRECALCULATEDVALUE

PreCalculated Value

Pre-calculated-value

SYNTAX **GetPreCalculatedValue(STRING field)**

RETURNS NUMERIC ARRAY

DESCRIPTION Get a pre-calculated value

ADDITIONAL
INFO

EXAMPLE GetPreCalculatedValue("last day volume")

1.12.3 GetPreCalculatedValue (1)

GETPRECALCULATEDVALUE

Pre-calculated-value

PreCalculated Value

SYNTAX **GetPreCalculatedValue(STRING field, ARRAY symbol name)**

RETURNS NUMERIC ARRAY

DESCRIPTION Get a pre-calculated value

ADDITIONAL
INFO

EXAMPLE GetPreCalculatedValue("last day volume", "A")

[\[TOP\]](#)

1.12.4 GetPreCalculatedValueString (0)

GETPRECALCULATEDVALUESTRING

Pre-calculated-value

Pre-calculated String

SYNTAX **GetPreCalculatedValueString(STRING field)**

RETURNS TEXT ARRAY

DESCRIPTION Get a STRING pre-calculated value

ADDITIONAL
INFO

EXAMPLE GetPreCalculatedValueString("date of last quote")

[\[TOP\]](#)

1.12.5 GetPreCalculatedValueString (1)

GETPRECALCULATEDVALUESTRING

Pre-calculated-value

Pre-calculated String

SYNTAX **GetPreCalculatedValueString(STRING field, ARRAY symbol name)**

RETURNS TEXT ARRAY

DESCRIPTION Get a STRING pre-calculated value

ADDITIONAL
INFO

EXAMPLE GetPreCalculatedValueString("date of last quote", "A")

[\[TOP\]](#)

1.12.6 PVal (0)

PVAL

PreCalculated Value

Pre-calculated-value

SYNTAX **PVal(STRING field)**

RETURNS NUMERIC ARRAY

DESCRIPTION Get a pre-calculated value

ADDITIONAL
INFO

EXAMPLE PVal("last day volume")

1.12.7 PVal (1)

PVAL

PreCalculated Value

Pre-calculated-value

SYNTAX **PVal(STRING field, ARRAY symbol name)**

RETURNS NUMERIC ARRAY

DESCRIPTION Get a pre-calculated value

ADDITIONAL
INFO

EXAMPLE PVal("last day volume", "A")

1.12.8 PValG

PVALG

Pre-calculated global value

Pre-calculated-value

SYNTAX **PValG(STRING field)**

RETURNS TEXT ARRAY

DESCRIPTION Get a global pre-calculated value (example: Last quote date)

ADDITIONAL
INFO

EXAMPLE PValG("Last quote date")

[\[TOP\]](#)

1.12.9 PValS (0)

PVALS

Pre-calculated String

Pre-calculated-value

SYNTAX **PValS(STRING field)**

RETURNS TEXT ARRAY

DESCRIPTION Get a STRING pre-calculated value

ADDITIONAL
INFO

EXAMPLE PValS("date of last quote")

[\[TOP\]](#)

1.12.10 PValS (1)

PVALS

Pre-calculated String

Pre-calculated-value

SYNTAX **PValS(STRING field, ARRAY symbol name)**

RETURNS TEXT ARRAY

DESCRIPTION Get a STRING pre-calculated value

ADDITIONAL
INFO

EXAMPLE PValS("date of last quote", "A")

1.13 Predictions

1.13.1 Predict

PREDICT

Predictions

Predict the next value

SYNTAX **Predict(STRING category, STRING name)**

RETURNS NUMERIC ARRAY

DESCRIPTION Return an array containing the predictions of the specified model

ADDITIONAL
INFO

EXAMPLE Predict("category_name", "prediction_model_name")

1.13.2 PredictSymbol

PREDICTSYMBOL

Predictions

Return '1' if the current symbol was used during the training of the specified model

SYNTAX **PredictSymbol(STRING category, STRING name)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns 1 if the selected model is created using the specified ticker data,
returns 0 otherwise.

ADDITIONAL
INFO

EXAMPLE PredictSymbol("category_name", "prediction_model_name")

1.14 Ranking

1.14.1 Ranking

RANKING

Ranking

Ranking System

SYNTAX **Ranking(STRING category, STRING name)**

RETURNS NUMERIC ARRAY

DESCRIPTION Apply the selected ranking system to the current symbol and returns an array containing the result for each bar

ADDITIONAL
INFO

EXAMPLE Ranking("category_name", "ranking_system_name")

1.15 Rules

1.15.1 ApplyRule

APPLYRULE

Rules

Apply a Trading Rule

SYNTAX **ApplyRule(STRING category, STRING name, ARRAY rule index (set -1 to get the number of rules in the specified list))**

RETURNS NUMERIC ARRAY

DESCRIPTION Apply a trading rule given its index value and the name of the list of rules

**ADDITIONAL
INFO**

EXAMPLE ApplyRule("category_name", "list_rules_name", 1)

[\[TOP\]](#)

1.16 Simulator

1.16.1 BuyPrice (0)

BUYPRICE

Simulator

Limit/Stop price for buy order

SYNTAX **BuyPrice(ARRAY limit/stop, ARRAY valid for (bars))**

RETURNS

DESCRIPTION Set the Limit/Stop price for the buy order (Set order type using 'SetSimTiming' function).
This limit order is valid for the specified number of bars, after this period the order is canceled.

ADDITIONAL INFO

EXAMPLE BuyPrice(close * 1.01, 5)

[\[TOP\]](#)

1.16.2 BuyPrice (1)

BUYPRICE

Simulator

Stop & Limit prices for buy order

SYNTAX **BuyPrice(ARRAY stop, ARRAY limit, ARRAY valid for (bars))**

RETURNS

DESCRIPTION Set the Limit & Stop price for the buy order (Set order type using 'SetSimTiming' function. Example: _StopLimit).
The order is valid for the specified number of bars, after this period the order is canceled.

ADDITIONAL
INFO

EXAMPLE BuyPrice(close * 1.01, close, 5)

[\[TOP\]](#)

1.16.3 CoverPrice (0)

COVERPRICE

Simulator

Limit/Stop price for cover order

SYNTAX **CoverPrice(ARRAY limit/stop, ARRAY exit at market after (bars))**

RETURNS

DESCRIPTION Set the Limit/Stop price for the cover order (Set order type using 'SetSimTiming' function).
This limit order is valid for the specified number of bars, after this period the order is canceled and an order at the market is initiated.

ADDITIONAL
INFO

EXAMPLE CoverPrice(close * 1.01, 5)

[\[TOP\]](#)

1.16.4 CoverPrice (1)

COVERPRICE

Simulator

Stop & Limit prices for cover order

SYNTAX **CoverPrice(ARRAY stop, ARRAY limit, ARRAY exit at market after (bars))**

RETURNS

DESCRIPTION Set the Limit & Stop price for the cover order (Set order type using 'SetSimTiming' function. Example: _StopLimit).
The order is valid for the specified number of bars, after this period the order is canceled and an order at the market is initiated.

ADDITIONAL INFO

EXAMPLE CoverPrice(close * 1.01, close, 5)

1.16.5 Drawdown

DRAWDOWN

Drawdown

Simulator

SYNTAX **Drawdown()**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the drawdown curve of the current symbol

ADDITIONAL
INFO

EXAMPLE Drawdown()

[\[TOP\]](#)

1.16.6 Equity

EQUITY

Equity

Simulator

SYNTAX **Equity()**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the equity curve of the current symbol, starting from 100

ADDITIONAL
INFO

EXAMPLE Equity()

[\[TOP\]](#)

1.16.7 Optimize

OPTIMIZE

Optimize variables

Simulator

SYNTAX **Optimize(ARRAY variable name, ARRAY min, ARRAY max, ARRAY step)**

RETURNS

DESCRIPTION Used by the simulator to optimize a variable

ADDITIONAL
INFO

EXAMPLE Optimize("a", 1, 5, 1)

[\[TOP\]](#)

1.16.8 SellPrice (0)

SELLPRICE

Simulator

Limit/Stop price for sell order

SYNTAX **SellPrice(ARRAY limit/stop, ARRAY exit at market after (bars))**

RETURNS

DESCRIPTION Set the Limit/Stop price for the sell order (Set order type using 'SetSimTiming' function).
This limit order is valid for the specified number of bars, after this period the order is canceled and an order at the market is initiated.

ADDITIONAL INFO

EXAMPLE SellPrice(close * 1.01, 5)

[\[TOP\]](#)

1.16.9 SellPrice (1)

SELLPRICE

Simulator

Stop & Limit prices for sell order

SYNTAX **SellPrice(ARRAY stop, ARRAY limit, ARRAY exit at market after (bars))**

RETURNS

DESCRIPTION Set the Limit & Stop price for the sell order (Set order type using 'SetSimTiming' function. Example: _StopLimit).
The order is valid for the specified number of bars, after this period the order is canceled and an order at the market is initiated.

ADDITIONAL INFO

EXAMPLE SellPrice(close * 1.01, close, 5)

[\[TOP\]](#)

1.16.10 SetSimCommission

SETSIMCOMMISSION
Simulation commissions

Simulator

SYNTAX **SetSimCommission(ENUM commission type, ARRAY value)**

RETURNS

DESCRIPTION Update the simulator commission setting

**ADDITIONAL
INFO**

EXAMPLE SetSimCommission(_Percentage, 0.02)

[\[TOP\]](#)

1.16.11 SetSimLongRank

SETSIMLONGRANK

Simulation long ranking system

Simulator

SYNTAX **SetSimLongRank(ARRAY array)**

RETURNS

DESCRIPTION Override the simulator long ranking system and create a simple long simulation ranking system using the provided array

ADDITIONAL
INFO

EXAMPLE SetSimLongRank(rsi(14))

[\[TOP\]](#)

1.16.12 SetSimPeriods

SETSIMPERIODS

Simulator

Simulation periods

SYNTAX **SetSimPeriods(ARRAY start year, ARRAY start month, ARRAY start day, ARRAY end year, ARRAY end month, ARRAY end day)**

RETURNS

DESCRIPTION Update the simulator start and end periods

**ADDITIONAL
INFO**

EXAMPLE SetSimPeriods(2000, 1, 1, 2011, 12, 29)

[\[TOP\]](#)

1.16.13 SetSimRefSymbol

SETSIMREFSYMBOL

Simulation reference symbol

Simulator

SYNTAX **SetSimRefSymbol(ARRAY symbol name)**

RETURNS

DESCRIPTION Update the simulator reference symbol

ADDITIONAL
INFO

EXAMPLE SetSimRefSymbol("^RUT")

[\[TOP\]](#)

1.16.14 SetSimSetting

SETSIMSETTING

Simulation settings

Simulator

SYNTAX **SetSimSetting(ENUM setting item, ARRAY value)**

RETURNS

DESCRIPTION Update the simulator settings

**ADDITIONAL
INFO**

EXAMPLE SetSimSetting(_NbPositions, 10)

[\[TOP\]](#)

1.16.15 SetSimShortRank

SETSIMSHORTRANK
Simulation short ranking system

Simulator

SYNTAX **SetSimShortRank(ARRAY array)**

RETURNS

DESCRIPTION Override the simulator short ranking system and create a simple short simulation ranking system using the provided array

ADDITIONAL
INFO

EXAMPLE SetSimShortRank(1 / rsi(14))

[\[TOP\]](#)

1.16.16 SetSimStop

SETSIMSTOP
Simulation stops

Simulator

SYNTAX **SetSimStop(ENUM stop type, ENUM stop entry, ARRAY value, ARRAY reentry)**

RETURNS

DESCRIPTION Update the simulator stops

**ADDITIONAL
INFO**

EXAMPLE SetSimStop(_StopLoss, _Percent, 20, 1)

[\[TOP\]](#)

1.16.17 SetSimTiming

SETSIMTIMING

Simulation timing

Simulator

SYNTAX **SetSimTiming(ENUM entry type, ENUM entry price, ARRAY decalage (1 to execute the next bar))**

RETURNS

DESCRIPTION Update the trading system order type

**ADDITIONAL
INFO**

EXAMPLE SetSimTiming(_Buy, _Open, 1)

[\[TOP\]](#)

1.16.18 ShortPrice (0)

SHORTPRICE

Simulator

Limit/Stop price for short order

SYNTAX **ShortPrice(ARRAY limit/stop, ARRAY valid for (bars))**

RETURNS

DESCRIPTION Set the Limit/Stop price for the short order (Set order type using 'SetSimTiming' function).
This limit order is valid for the specified number of bars, after this period the order is canceled.

ADDITIONAL
INFO

EXAMPLE ShortPrice(close * 1.01, 5)

[\[TOP\]](#)

1.16.19 ShortPrice (1)

SHORTPRICE

Simulator

Stop & Limit prices for short order

SYNTAX **ShortPrice(ARRAY stop, ARRAY limit, ARRAY valid for (bars))**

RETURNS

DESCRIPTION Set the Limit & Stop price for the short order (Set order type using 'SetSimTiming' function. Example: _StopLimit).
The order is valid for the specified number of bars, after this period the order is canceled.

ADDITIONAL
INFO

EXAMPLE ShortPrice(close * 1.01, close, 5)

1.17 String

1.17.1 GetDataString

GETDATASTRING

String

String Database Field

SYNTAX **GetDataString(STRING database name, STRING field name, ARRAY regular expression)**

RETURNS TEXT ARRAY

DESCRIPTION Get a string array from a database field

**ADDITIONAL
INFO**

EXAMPLE GetDataString("database_name", "field_name", "buy")

[\[TOP\]](#)

1.17.2 GetDataStringIndex

GETDATASTRINGINDEX

String

String Database Field Index

SYNTAX **GetDataStringIndex(STRING database name, STRING field name, ARRAY index, ARRAY regular expression)**

RETURNS TEXT ARRAY

DESCRIPTION Get a string array from a database field, index parameter specify the index of the data (When using for example intraday database with an historical timeframe)

**ADDITIONAL
INFO**

EXAMPLE `GetDataStringIndex("database_name", "field_name", 0, "buy")`

[\[TOP\]](#)

1.17.3 GetDataStringInside

GETDATASTRINGINSIDE

String

String Database Field Index Inside

SYNTAX **GetDataStringInside(STRING database name, STRING field name, ARRAY low, ARRAY high, ENUM periodtype, ARRAY regular expression)**

RETURNS TEXT ARRAY

DESCRIPTION Get a string array from a database field (Accept only values which date are inside the specified limits)

**ADDITIONAL
INFO**

EXAMPLE `GetDataStringInside("database name", "field name", 0, 10, P_Hour, "buy")`

[\[TOP\]](#)

1.17.4 IffStr

IFFSTR

IF-Then-Else

String

SYNTAX **IffStr(ARRAY , ARRAY , ARRAY)**

RETURNS TEXT ARRAY

DESCRIPTION A conditional function that returns the value of the first string parameter if condition is true (different from 0), if condition is false then it returns the value of the second string parameter.

ADDITIONAL
INFO

EXAMPLE IffStr(rsi(14) > 50, "TRUE", "FALSE")

[\[TOP\]](#)

1.17.5 StringContains

STRINGCONTAINS

String

String Contains

SYNTAX **StringContains(ARRAY string, ARRAY string)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns 1 if the first string parameter contains the second string parameter, 0 otherwise

ADDITIONAL
INFO

EXAMPLE StringContains("HELLO", "HE")

[\[TOP\]](#)

1.17.6 StringEqual

STRINGEQUAL

String Equals

String

SYNTAX	StringEqual(ARRAY string, ARRAY string)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Returns 1 if the two strings are equal, 0 otherwise
ADDITIONAL INFO	
EXAMPLE	StringEqual("HELLO", "HELLO")

[\[TOP\]](#)

1.17.7 StringExtract

STRINGEXTRACT

String

String Extract

SYNTAX **StringExtract(ARRAY string, ARRAY value, ARRAY value1)**

RETURNS TEXT ARRAY

DESCRIPTION Extract a string from the string in the first parameter, starting at the specified number in the second parameter and ending at the specified number in the third parameter

ADDITIONAL
INFO

EXAMPLE StringExtract("HELLO", 1, 3)

[\[TOP\]](#)

1.17.8 StringExtractEnds

STRINGEXTRACTENDS

String

String Extract Ends

SYNTAX **StringExtractEnds(ARRAY string, ARRAY value)**

RETURNS TEXT ARRAY

DESCRIPTION Extract a string from the string in the first parameter, starting from (Length of the first parameter string - number in the second parameter) and ending at the length of the first parameter string

ADDITIONAL
INFO

EXAMPLE StringExtractEnds("HELLO", 2)

[\[TOP\]](#)

1.17.9 StringExtractStart

STRINGEXTRACTSTART

String

String Extract Start

SYNTAX **StringExtractStart(ARRAY string, ARRAY value)**

RETURNS TEXT ARRAY

DESCRIPTION Extract a string from the string in the first parameter, starting at 0 and ending at the specified number in the second parameter

ADDITIONAL
INFO

EXAMPLE StringExtractStart("HELLO", 2)

[\[TOP\]](#)

1.17.10 StringInsert

STRINGINSERT

String Insert

String

SYNTAX **StringInsert(ARRAY string, ARRAY toinsert, ARRAY index)**

RETURNS TEXT ARRAY

DESCRIPTION Insert in the first parameter the second parameter string at the specified index number

ADDITIONAL
INFO

EXAMPLE StringInsert(" EVERYBODY", "HELLO", 0)

[\[TOP\]](#)

1.17.11 StringLength

STRINGLENGTH

String Length

String

SYNTAX **StringLength(ARRAY string)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the length of the string

ADDITIONAL
INFO

EXAMPLE StringLength("HELLO")

[\[TOP\]](#)

1.17.12 StringReplace

STRINGREPLACE

String

String Replace

SYNTAX **StringReplace(ARRAY string, ARRAY oldvalue, ARRAY newvalue)**

RETURNS TEXT ARRAY

DESCRIPTION Replace in the first parameter string, oldValue with newValue

ADDITIONAL
INFO

EXAMPLE StringReplace("HELLO", "O", "OOOO")

1.18 Symbol Info

1.18.1 Address

ADDRESS
Address

Symbol Info

SYNTAX

Address()

RETURNS

TEXT ARRAY

DESCRIPTION

Returns the symbol's Address

ADDITIONAL
INFO

EXAMPLE

Address()

[\[TOP\]](#)

1.18.2 Country

COUNTRY

Country

Symbol Info

SYNTAX **Country()**

RETURNS TEXT ARRAY

DESCRIPTION Returns the symbol's Country

ADDITIONAL
INFO

EXAMPLE Country()

[\[TOP\]](#)

1.18.3 Currency

CURRENCY

Currency

Symbol Info

SYNTAX **Currency()**

RETURNS TEXT ARRAY

DESCRIPTION Returns the symbol's Currency

ADDITIONAL
INFO

EXAMPLE Currency()

[\[TOP\]](#)

1.18.4 FullName

FULLNAME

FullName

Symbol Info

SYNTAX **FullName()**

RETURNS TEXT ARRAY

DESCRIPTION Returns the symbol's FullName

ADDITIONAL
INFO

EXAMPLE FullName()

1.18.5 Group

GROUP
Group

Symbol Info

SYNTAX	Group()
RETURNS	TEXT ARRAY
DESCRIPTION	Returns the symbol's Group
ADDITIONAL INFO	
EXAMPLE	Group()

1.18.6 Index

INDEX
Index

Symbol Info

SYNTAX	Index()
RETURNS	TEXT ARRAY
DESCRIPTION	Returns the symbol's Index
ADDITIONAL INFO	
EXAMPLE	Index()

[\[TOP\]](#)

1.18.7 Industry

INDUSTRY

Industry

Symbol Info

SYNTAX **Industry()**

RETURNS TEXT ARRAY

DESCRIPTION Returns the symbol's Industry

ADDITIONAL
INFO

EXAMPLE Industry()

1.18.8 IsInList

ISINLIST

Is In List

Symbol Info

SYNTAX	IsInList(ENUM list type, ARRAY list name)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Returns 1 if the current symbol is in the specified list
ADDITIONAL INFO	
EXAMPLE	IsInList(_Watchlist, "list")

1.18.9 Market

MARKET
Market

Symbol Info

SYNTAX	Market()
RETURNS	TEXT ARRAY
DESCRIPTION	Returns the symbol's Market
ADDITIONAL INFO	
EXAMPLE	Market()

1.18.10 Name1

NAME1
Name1

Symbol Info

SYNTAX	Name1()
RETURNS	TEXT ARRAY
DESCRIPTION	Returns the symbol's Name1
ADDITIONAL INFO	
EXAMPLE	Name1()

1.18.11 Name2

NAME2
Name2

Symbol Info

SYNTAX **Name2()**

RETURNS TEXT ARRAY

DESCRIPTION Returns the symbol's Name2

ADDITIONAL
INFO

EXAMPLE Name2()

1.18.12 Name3

NAME3
Name3

Symbol Info

SYNTAX	Name3()
RETURNS	TEXT ARRAY
DESCRIPTION	Returns the symbol's Name3
ADDITIONAL INFO	
EXAMPLE	Name3()

1.18.13 Name

NAME
Name

Symbol Info

SYNTAX	Name()
RETURNS	TEXT ARRAY
DESCRIPTION	Returns the symbol's Name
ADDITIONAL INFO	
EXAMPLE	Name()

1.18.14 Sector

SECTOR

Sector

Symbol Info

SYNTAX	Sector()
RETURNS	TEXT ARRAY
DESCRIPTION	Returns the symbol's Sector
ADDITIONAL INFO	
EXAMPLE	Sector()

[\[TOP\]](#)

1.18.15 Website

WEBSITE

Website

Symbol Info

SYNTAX **Website()**

RETURNS TEXT ARRAY

DESCRIPTION Returns the symbol's Website

ADDITIONAL
INFO

EXAMPLE Website()

1.19 Technical

1.19.1 AMA

AMA

Technical

Adaptive Moving Average

SYNTAX **AMA(ARRAY array, ARRAY smoothing factor)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the adaptive moving average, which is a moving average with a time-variant smoothing factor.

ADDITIONAL
INFO

EXAMPLE AMA(close, 0.4)

[\[TOP\]](#)

1.19.2 AvgIf (0)

AVGIF
Average If

Technical

SYNTAX **AvgIf(ARRAY condition, ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculates, when condition is TRUE, the average of the ARRAY for all the
lookback periods (current bar is included)

ADDITIONAL
INFO

EXAMPLE AvgIf(perf(close, 10) > 0, close)

[\[TOP\]](#)

1.19.3 AvgIf (1)

AVGIF
Average If

Technical

SYNTAX **AvgIf(ARRAY condition, ARRAY array, ARRAY period)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculates, when condition is TRUE, the average of the ARRAY for the specified number of lookback periods (current bar is included) (When the condition is true)

ADDITIONAL
INFO

EXAMPLE AvgIf(perf(close, 10) > 0, close, 10)

[\[TOP\]](#)

1.19.4 BarsSince

BARSSINCE

Bars Since

Technical

SYNTAX **BarsSince(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculates the number of bars that have passed since the array was different from 0

ADDITIONAL
INFO

EXAMPLE BarsSince(perf(close, 10) > 10)

1.19.5 Count

COUNT
Count

Technical

SYNTAX	Count()
RETURNS	NUMERIC ARRAY
DESCRIPTION	Returns the number of bars
ADDITIONAL INFO	
EXAMPLE	Count()

[\[TOP\]](#)

1.19.6 Cross

CROSS

Cross

Technical

SYNTAX **Cross(ARRAY , ARRAY)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns '1', when the first array crosses above the second array, otherwise the result is '0'

ADDITIONAL
INFO

EXAMPLE Cross(sma(14), sma(21))

[\[TOP\]](#)

1.19.7 GFun

GFUN
Gaussian

Technical

SYNTAX **GFun(ARRAY array, ARRAY period)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the gaussian for the specified array

ADDITIONAL
INFO

EXAMPLE GFun(volume, 30)

[\[TOP\]](#)

1.19.8 GroupBy (0)

GROUPBY

Technical

Group past values

SYNTAX **GroupBy(ARRAY array, ARRAY groupby, ENUM calculation method)**

RETURNS NUMERIC ARRAY

DESCRIPTION Groups all past values and returns a number based on a given calculation method

ADDITIONAL
INFO

EXAMPLE GroupBy(perf(close, 1), DayOfWeek(), "avg")

[\[TOP\]](#)

1.19.9 GroupBy (1)

GROUPBY

Technical

Group past values

SYNTAX **GroupBy(ARRAY array, ARRAY groupby, ENUM calculation method, ARRAY bars to consider, ARRAY offset)**

RETURNS NUMERIC ARRAY

DESCRIPTION Groups past values (defined by the last 2 parameters) and returns a number based on a given calculation method

ADDITIONAL
INFO

EXAMPLE GroupBy(perf(close, 1), DayOfWeek(), "avg", 30, 0)

[\[TOP\]](#)

1.19.10 GroupBy (2)

GROUPBY

Technical

Group past values

SYNTAX **GroupBy(ARRAY array, ARRAY groupby, ENUM calculation method, ARRAY bars to consider, ARRAY offset, ARRAY filter)**

RETURNS NUMERIC ARRAY

DESCRIPTION Groups past values (that pass the filter) and returns a number based on a given calculation method

ADDITIONAL
INFO

EXAMPLE GroupBy(perf(close, 1), DayOfWeek(), "avg", 30, 0, perf(close, 1) > 0)

[\[TOP\]](#)

1.19.11 HhvLb (0)

HHVLB

Highest Since

Technical

SYNTAX **HhvLb(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of bars since the array reached its highest value

ADDITIONAL
INFO

EXAMPLE HhvLb(close)

[\[TOP\]](#)

1.19.12 HhvLb (1)

HHVLB

Highest Since

Technical

SYNTAX **HhvLb(ARRAY array, ARRAY period)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of bars since the array reached its highest value over the specified period

ADDITIONAL
INFO

EXAMPLE HhvLb(close, 20)

[\[TOP\]](#)

1.19.13 HighestSince (0)

HIGHESTSINCE

Technical

Highest Since

SYNTAX **HighestSince(ARRAY condition, ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the highest value of the array since CONDITION was TRUE on the most recent occurrence

ADDITIONAL
INFO

EXAMPLE HighestSince(cross(close, sma(close, 20)), rsi(14))

[\[TOP\]](#)

1.19.14 HighestSince (1)

HIGHESTSINCE

Technical

Highest Since

SYNTAX **HighestSince(ARRAY condition, ARRAY array, ARRAY n-th)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the highest value of the array since CONDITION was TRUE on the n-th most recent occurrence

ADDITIONAL
INFO

EXAMPLE HighestSince(cross(close, sma(close, 20)), rsi(14), 1)

[\[TOP\]](#)

1.19.15 HighestSinceBars (0)

HIGHESTSINCEBARS

Technical

Bars Since Highest

SYNTAX **HighestSinceBars(ARRAY condition, ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of trading bars that have passed since the highest value of the array and since CONDITION was TRUE on the most recent occurrence

ADDITIONAL
INFO

EXAMPLE HighestSinceBars(cross(close, sma(close, 20)), rsi(14))

1.19.16 HighestSinceBars (1)

HIGHESTSINCEBARS

Technical

Bars Since Highest

SYNTAX **HighestSinceBars(ARRAY condition, ARRAY array, ARRAY n-th)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of trading bars that have passed since the highest value of the array and since CONDITION was TRUE on the n-th most recent occurrence

ADDITIONAL
INFO

EXAMPLE HighestSinceBars(cross(close, sma(close, 20)), rsi(14), 1)

[\[TOP\]](#)

1.19.17 HistoPrice (0)

HISTOPRICE

Technical

Historical prices from intraday data

SYNTAX	HistoPrice(ENUM price, ARRAY day lag (0 to get the current day))
RETURNS	NUMERIC ARRAY
DESCRIPTION	Returns the historical close, open, high, low, volume or open interest of past days
ADDITIONAL INFO	
EXAMPLE	HistoPrice(_open, 1)

[\[TOP\]](#)

1.19.18 HistoPrice (1)

HISTOPRICE

Technical

Historical prices from intraday data

SYNTAX	HistoPrice(ENUM price, ARRAY day lag (0 to get the current day), ARRAY use open session time. 1 for true.)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Returns the historical close, open, high, low, volume or open interest of past days. Ability to select whether to use session open time or not.
ADDITIONAL INFO	
EXAMPLE	HistoPrice(_open, 1, 1)

1.19.19 Iff

IFF

IF-Then-Else

Technical

SYNTAX **Iff(ARRAY , ARRAY , ARRAY)**

RETURNS NUMERIC ARRAY

DESCRIPTION A conditional function that returns the value of the first parameter if condition is true (different from 0), if condition is false then it returns the value of the second parameter.

ADDITIONAL
INFO

EXAMPLE Iff(rsi(14) > 50, 1, 0)

1.19.20 IsFalse

ISFALSE

Is False

Technical

SYNTAX **IsFalse(ARRAY array, ARRAY lag)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns 1 if all the values between the current bar and the lag bar are inferior or equal to 0

ADDITIONAL
INFO

EXAMPLE IsFalse(perf(close, 10), 20)

[\[TOP\]](#)

1.19.21 IsLastBar

ISLASTBAR

Is Last Bars

Technical

SYNTAX **IsLastBar()**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns 1 if the the current bar is the last one

ADDITIONAL
INFO

EXAMPLE IsLastBar()

[\[TOP\]](#)

1.19.22 IsNaN

ISNAN

Is NaN

Technical

SYNTAX **IsNaN(**ARRAY** array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns 1 if all elements in the array equal to NaN

ADDITIONAL
INFO

EXAMPLE IsNaN(1)

[\[TOP\]](#)

1.19.23 IsNoNaN

ISNONAN

Is not NaN

Technical

SYNTAX **IsNoNaN(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns 0 if at least one elements in the array is equal to NaN

ADDITIONAL
INFO

EXAMPLE IsNoNaN(1)

[\[TOP\]](#)

1.19.24 IsNoZero

ISNOZERO

Is not Zero

Technical

SYNTAX **IsNoZero(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns 0 if at least one elements in the array is equal to 0

ADDITIONAL
INFO

EXAMPLE IsNoZero(1)

[\[TOP\]](#)

1.19.25 IsNull

ISNULL
Is NULL

Technical

SYNTAX **IsNull(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns 1 if all elements in the array equal to 0

ADDITIONAL
INFO

EXAMPLE IsNull(1)

[\[TOP\]](#)

1.19.26 IsTrue

ISTRUE

Is True

Technical

SYNTAX **IsTrue(ARRAY array, ARRAY lag)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns 1 if all the values between the current bar and the lag bar are superior to 0

ADDITIONAL
INFO

EXAMPLE IsTrue(perf(close, 10), 20)

1.19.27 LastNotNullValue

LASTNOTNULLVALUE

Last not null

Technical

SYNTAX **LastNotNullValue(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the last (not equal to 0) value of the ARRAY

ADDITIONAL
INFO

EXAMPLE LastNotNullValue(close)

[\[TOP\]](#)

1.19.28 LastValue

LASTVALUE

Last Value

Technical

SYNTAX	LastValue(ARRAY array)
RETURNS	NUMERIC ARRAY
DESCRIPTION	Returns the last value of the ARRAY
ADDITIONAL INFO	
EXAMPLE	LastValue(close)

[\[TOP\]](#)

1.19.29 LlvLb (0)

LLVLB

Lowest Since

Technical

SYNTAX **LlvLb(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of bars since the array reached its lowest value

ADDITIONAL
INFO

EXAMPLE LlvLb(close)

[\[TOP\]](#)

1.19.30 LlvLb (1)

LLVLB

Lowest Since

Technical

SYNTAX **LlvLb(ARRAY array, ARRAY period)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of bars since the array reached its lowest value over the specified period

ADDITIONAL
INFO

EXAMPLE LlvLb(close, 20)

[\[TOP\]](#)

1.19.31 LowestSince (0)

LOWESTSINCE

Technical

Lowest Since

SYNTAX **LowestSince(ARRAY condition, ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the lowest value of the array since CONDITION was TRUE on the most recent occurrence

ADDITIONAL
INFO

EXAMPLE LowestSince(cross(close, sma(close, 20)), rsi(14))

[\[TOP\]](#)

1.19.32 LowestSince (1)

LOWESTSINCE

Technical

Lowest Since

SYNTAX **LowestSince(ARRAY condition, ARRAY array, ARRAY n-th)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the lowest value of the array since CONDITION was TRUE on the n-th most recent occurrence

ADDITIONAL
INFO

EXAMPLE LowestSince(cross(close, sma(close, 20)), rsi(14), 1)

[\[TOP\]](#)

1.19.33 LowestSinceBars (0)

LOWESTSINCEBARS

Technical

Bars Since Lowest

SYNTAX **LowestSinceBars(ARRAY condition, ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of trading bars that have passed since the lowest value of the array and since CONDITION was TRUE on the most recent occurrence

ADDITIONAL
INFO

EXAMPLE LowestSinceBars(cross(close, sma(close, 20)), rsi(14))

1.19.34 LowestSinceBars (1)

LOWESTSINCEBARS

Technical

Bars Since Lowest

SYNTAX **LowestSinceBars(ARRAY condition, ARRAY array, ARRAY n-th)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of trading bars that have passed since the lowest value of the array and since CONDITION was TRUE on the n-th most recent occurrence

ADDITIONAL
INFO

EXAMPLE LowestSinceBars(cross(close, sma(close, 20)), rsi(14), 1)

[\[TOP\]](#)

1.19.35 LSwitch

LSWITCH

Latching Switch

Technical

SYNTAX **LSwitch(ARRAY array, ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns 1 for all bars after the first array is 'true' until a 'true' occurs in the second array. In this case, next bars will get 0 until the first array is 'true' again.

ADDITIONAL
INFO

EXAMPLE LSwitch(rsi(14) > 50, rsi(14) < 50)

[\[TOP\]](#)

1.19.36 NaNtoLast

NANTOLAST

NaN to Last

Technical

SYNTAX **NaNtoLast(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Update the NA values with the last non NaN values

ADDITIONAL
INFO

EXAMPLE NaNtoLast(perf(close, -10))

[\[TOP\]](#)

1.19.37 NaNtoZero

NANTOZERO

NaN values to Zero

Technical

SYNTAX **NaNToZero(ARRAY array, ARRAY type)**

RETURNS NUMERIC ARRAY

DESCRIPTION Change NaN value to Zero in the specified array.
Set zero to the parameter 'type' to update only the firsts NaN, Set one to update all NaN values

ADDITIONAL
INFO

EXAMPLE NaNToZero(rsi(14), 0)

[\[TOP\]](#)

1.19.38 Peak (0)

PEAK
Peak

Technical

SYNTAX **Peak(ARRAY array, ARRAY change)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the value of the array in the last peak

ADDITIONAL
INFO

EXAMPLE Peak(close, 10)

[\[TOP\]](#)

1.19.39 Peak (1)

PEAK

Peak

Technical

SYNTAX **Peak(ARRAY array, ARRAY change, ARRAY n)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the value of the array N peak(s) ago

ADDITIONAL
INFO

EXAMPLE Peak(close, 10, 1)

[\[TOP\]](#)

1.19.40 PeakBars (0)

PEAKBARS

Peak Bars

Technical

SYNTAX **PeakBars(ARRAY array, ARRAY change)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of bars since the last peak

ADDITIONAL
INFO

EXAMPLE PeakBars(close, 10)

[\[TOP\]](#)

1.19.41 PeakBars (1)

PEAKBARS

Peak Bars

Technical

SYNTAX **PeakBars(ARRAY array, ARRAY change, ARRAY n)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of bars since N peak(s) ago

ADDITIONAL
INFO

EXAMPLE PeakBars(close, 10, 1)

1.19.42 Perf

PERF

Technical

Performance over a specified period

SYNTAX **Perf(ARRAY array, ARRAY period)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the performance of the array for the specified period (k-step Return)

ADDITIONAL
INFO

EXAMPLE Perf(close, 20)

[\[TOP\]](#)

1.19.43 PerfD

PERFD

Technical

Average Daily Performance

SYNTAX **PerfD(ARRAY array, ARRAY period)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the average daily performance of the array for the specified period (k-step Trend)

ADDITIONAL
INFO

EXAMPLE PerfD(close, 20)

[\[TOP\]](#)

1.19.44 Rank

RANK
Rank

Technical

SYNTAX **Rank(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the rank of the stock for this array, rank ranges are from 0 to 100 (To use in simulation)

ADDITIONAL
INFO

EXAMPLE Rank(close)

1.19.45 Ref

REF

Technical

Lag

SYNTAX **Ref(ARRAY array, ARRAY period)**

RETURNS NUMERIC ARRAY

DESCRIPTION References a previous or subsequent element in a ARRAY. A negative period references X periods in the future; a positive period references X periods ago (Replace empty values in the ARRAY with NA)

**ADDITIONAL
INFO**

EXAMPLE Ref(close, 1)

1.19.46 RefZero

REFZERO

Technical

Lag modified

SYNTAX **RefZero(ARRAY array, ARRAY period)**

RETURNS NUMERIC ARRAY

DESCRIPTION References a previous or subsequent element in a ARRAY. A negative period references X periods in the future; a positive period references X periods ago (Replace empty values in the ARRAY with 0)

ADDITIONAL
INFO

EXAMPLE RefZero(close, 1)

[\[TOP\]](#)

1.19.47 RemoveSameSignals (0)

REMOVESAMESIGNALS

Technical

Remove Excessive Signals

SYNTAX **RemoveSameSignals(ARRAY array, ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Removes excessive signals.
Returns 1 on the first occurrence of 'true' signal in the first array.
then Returns 0 until the second array is 'true' even if there are 'true' signals in the first array.

ADDITIONAL
INFO

EXAMPLE RemoveSameSignals(rsi(14) > 50, rsi(14) < 50)

[\[TOP\]](#)

1.19.48 RemoveSameSignals (1)

REMOVESAMESIGNALS

Technical

Remove Excessive Signals

SYNTAX **RemoveSameSignals(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Removes excessive signals.
Returns 1 on the first occurrence of 'true' signal in the first array.
then Returns 0 until the array become 'false' then 'true'.

ADDITIONAL
INFO

EXAMPLE RemoveSameSignals(rsi(14) > 50)

[\[TOP\]](#)

1.19.49 RFun

RFUN

Relative Volatility

Technical

SYNTAX **RFun(ARRAY array, ARRAY period)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the relative volatility of the specified array

ADDITIONAL
INFO

EXAMPLE RFun(close, 30)

[\[TOP\]](#)

1.19.50 SumIf (0)

SUMIF

Summation If

Technical

SYNTAX **SumIf(ARRAY condition, ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculates, when condition is TRUE, a cumulative sum of the ARRAY for all the lookback periods (current bar is included)

ADDITIONAL
INFO

EXAMPLE SumIf(rsi(14) > 50, 1)

[\[TOP\]](#)

1.19.51 SumIf (1)

SUMIF

Summation If

Technical

SYNTAX **SumIf(ARRAY condition, ARRAY array, ARRAY period)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculates, when condition is TRUE, a cumulative sum of the ARRAY for the specified number of lookback periods (current bar is included)

ADDITIONAL
INFO

EXAMPLE SumIf(rsi(14) > 50, 1, 20)

[\[TOP\]](#)

1.19.52 TotalBars

TOTALBARS

Total Bars

Technical

SYNTAX **TotalBars()**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the total number of bars

ADDITIONAL
INFO

EXAMPLE TotalBars()

[\[TOP\]](#)

1.19.53 Trough (0)

TROUGH

Trough

Technical

SYNTAX **Trough(ARRAY array, ARRAY change)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the value of the array in the last trough

ADDITIONAL
INFO

EXAMPLE Trough(close, 10)

[\[TOP\]](#)

1.19.54 Trough (1)

TROUGH

Trough

Technical

SYNTAX **Trough(ARRAY array, ARRAY change, ARRAY n)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the value of the array N trough(s) ago

ADDITIONAL
INFO

EXAMPLE Trough(close, 10, 1)

[\[TOP\]](#)

1.19.55 TroughBars (0)

TROUGHBARS

Trough Bars

Technical

SYNTAX **TroughBars(ARRAY array, ARRAY change)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of bars since the last trough

ADDITIONAL
INFO

EXAMPLE TroughBars(close, 10)

[\[TOP\]](#)

1.19.56 TroughBars (1)

TROUGHBARS

Trough Bars

Technical

SYNTAX **TroughBars(ARRAY array, ARRAY change, ARRAY n)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the number of bars since N trough(s) ago

ADDITIONAL
INFO

EXAMPLE TroughBars(close, 10, 1)

[\[TOP\]](#)

1.19.57 Value

VALUE

Value

Technical

SYNTAX **Value(ARRAY array, ARRAY bar number)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the value of the specified ARRAY for the bar number X

ADDITIONAL
INFO

EXAMPLE Value(close, 5)

[\[TOP\]](#)

1.19.58 ValueWhen (0)

VALUEWHEN
Value When

Technical

SYNTAX **ValueWhen(ARRAY condition, ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the value of the array, when the condition was TRUE, on the most recent occurrence

**ADDITIONAL
INFO**

EXAMPLE ValueWhen(cross(close, sma(close, 20)), rsi(14))

[\[TOP\]](#)

1.19.59 ValueWhen (1)

VALUEWHEN
Value When

Technical

SYNTAX **ValueWhen(ARRAY condition, ARRAY array, ARRAY n-th)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns the value of the array, when the condition was TRUE, on the n-th most recent occurrence

**ADDITIONAL
INFO**

EXAMPLE ValueWhen(cross(close, sma(close, 20)), rsi(14), 1)

[\[TOP\]](#)

1.19.60 ZigZag

ZIGZAG

Zig Zag

Technical

SYNTAX **ZigZag(ARRAY array, ARRAY change)**

RETURNS NUMERIC ARRAY

DESCRIPTION Calculates the Zig Zag indicator given the percent change

ADDITIONAL
INFO

EXAMPLE ZigZag(close, 10)

1.20 Time-frame

1.20.1 TimeframeApply

TIMEFRAMEAPPLY

Time-frame

Change the timeframe of a time-series

SYNTAX **TimeframeApply(ARRAY timeframe, ARRAY time-series)**

RETURNS NUMERIC ARRAY

DESCRIPTION Changes the timeframe of a time-series and returns this new compressed time-series

ADDITIONAL
INFO

EXAMPLE TimeframeApply(7, rsi(14) > 50)

[\[TOP\]](#)

1.20.2 TimeframeCompress

TIMEFRAMECOMPRESS

Time-frame

Compress a time-series

SYNTAX **TimeframeCompress(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Compress a time-series retrieved with the 'TFGetSeries' or 'TFGetSeries1' functions

ADDITIONAL
INFO

EXAMPLE TimeframeCompress(close)

[\[TOP\]](#)

1.20.3 TimeframeDecompress

TIMEFRAMEDECOMPRESS

Time-frame

Decompress a time-series

SYNTAX **TimeframeDecompress(ARRAY array)**

RETURNS NUMERIC ARRAY

DESCRIPTION Decompress a time-series that was previously compressed using the
TFCompress function

ADDITIONAL
INFO

EXAMPLE TimeframeDecompress(close)

1.20.4 TimeframeGetSeries1 (0)

TIMEFRAMEGETSERIES1

Time-frame

Get a time-series for a different time-frame

SYNTAX **TimeframeGetSeries1(ARRAY symbol, ARRAY timeframe, ENUM arrayname, ENUM type)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns an array (close, open, high, low, volume, open-interest) for the specified symbol and for the specified time-frame

ADDITIONAL
INFO

EXAMPLE TimeframeGetSeries1("A", 1, close, LastData)

1.20.5 TimeframeGetSeries1 (1)

TIMEFRAMEGETSERIES1

Time-frame

Get a time-series for a different time-frame

SYNTAX **TimeframeGetSeries1(ARRAY symbol, ARRAY timeframe, ENUM arrayname, ENUM type, ARRAY set 1 for historical)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns an array (close, open, high, low, volume, open-interest) for the specified symbol, the specified time-frame and the specified historical or intraday data

**ADDITIONAL
INFO**

EXAMPLE TimeframeGetSeries1("A", 1, close, LastData, 1)

[\[TOP\]](#)

1.20.6 TimeframeGetSeries

TIMEFRAMEGETSERIES

Time-frame

Get a time-series for a different time-frame

SYNTAX **TimeframeGetSeries(ARRAY timeframe, ENUM arrayname, ENUM type)**

RETURNS NUMERIC ARRAY

DESCRIPTION Returns an array (close, open, high, low, volume, open-interest) for the specified time-frame

ADDITIONAL
INFO

EXAMPLE TimeframeGetSeries(1, close, LastData)

[\[TOP\]](#)

1.20.7 TimeframeRestore

TIMEFRAMERESTORE

Restore time-frame

Time-frame

SYNTAX **TimeframeRestore()**

RETURNS

DESCRIPTION Restore the original time-frame

ADDITIONAL
INFO

EXAMPLE TimeframeRestore()

[\[TOP\]](#)

1.20.8 TimeframeSet

TIMEFRAMESET

Set time-frame

Time-frame

SYNTAX **TimeframeSet(ARRAY time-frame)**

RETURNS

DESCRIPTION Change the current time-frame

ADDITIONAL
INFO

EXAMPLE TimeframeSet(7)

[\[TOP\]](#)