



**S-Trader**





## TR / ATR | True Range / Average True Range

### Contents

Description .....	3
Formula .....	3
Parameters .....	3
Output value(s) .....	4
Plot .....	4
Quant Script™ Syntax .....	4
Dialogs .....	5
Chart Study Dialog .....	5
Sample Chart With Study .....	6
Quant Script™ Wizard Study Dialog .....	7
Quant Script™ Study Dialog .....	8



## Description

Developed by J. Welles Wilder, the True Range (TR) and the Average True Range (ATR) is an indicator that measures volatility. As with most of his indicators, Wilder designed the TR and ATR with commodities and daily prices in mind. Commodities are frequently more volatile than stocks. They are often subject to gaps and limit moves, which occur when a commodity opens up or down its maximum allowed move for the session. A volatility formula based only on the high-low range would fail to capture volatility from gap or limit moves. Wilder created the True Range and then the Average True Range to capture this “missing” volatility. It is important to remember that the TR and ATR do not provide an indication of price direction, just volatility.

## Formula

Step 1: Calculate TR = True Range = the highest of 3 values:

- (Current High – Current Low),
- Absolute(Current High – Previous Close),
- Absolute(Current Low – Previous Close)

Step 2: Calculate the ATR as a moving average of TR for the selected n periods and moving average type.

## Parameters

<b>ATR Periods</b>	Any number of periods
<b>ATR MA Type</b>	Any available moving average type



## Output value(s)

There are two output values resulting from the formula, the True Range and the Average True Range.

## Plot

The plot is in a separate panel at the bottom.

## Quant Script Syntax

<b>Short Form</b>	<i>TR()</i>
	<i>ATR</i> (ATR Periods, ATR MA Type)
<b>Long Form</b>	<i>TrueRange()</i>
	<i>AverageTrueRange</i> (ATR Periods, ATR MA Type)



## Dialogs

### Chart Study Dialog

#### Average True Range

Indicator Parameters

Period

MaType

Symbol

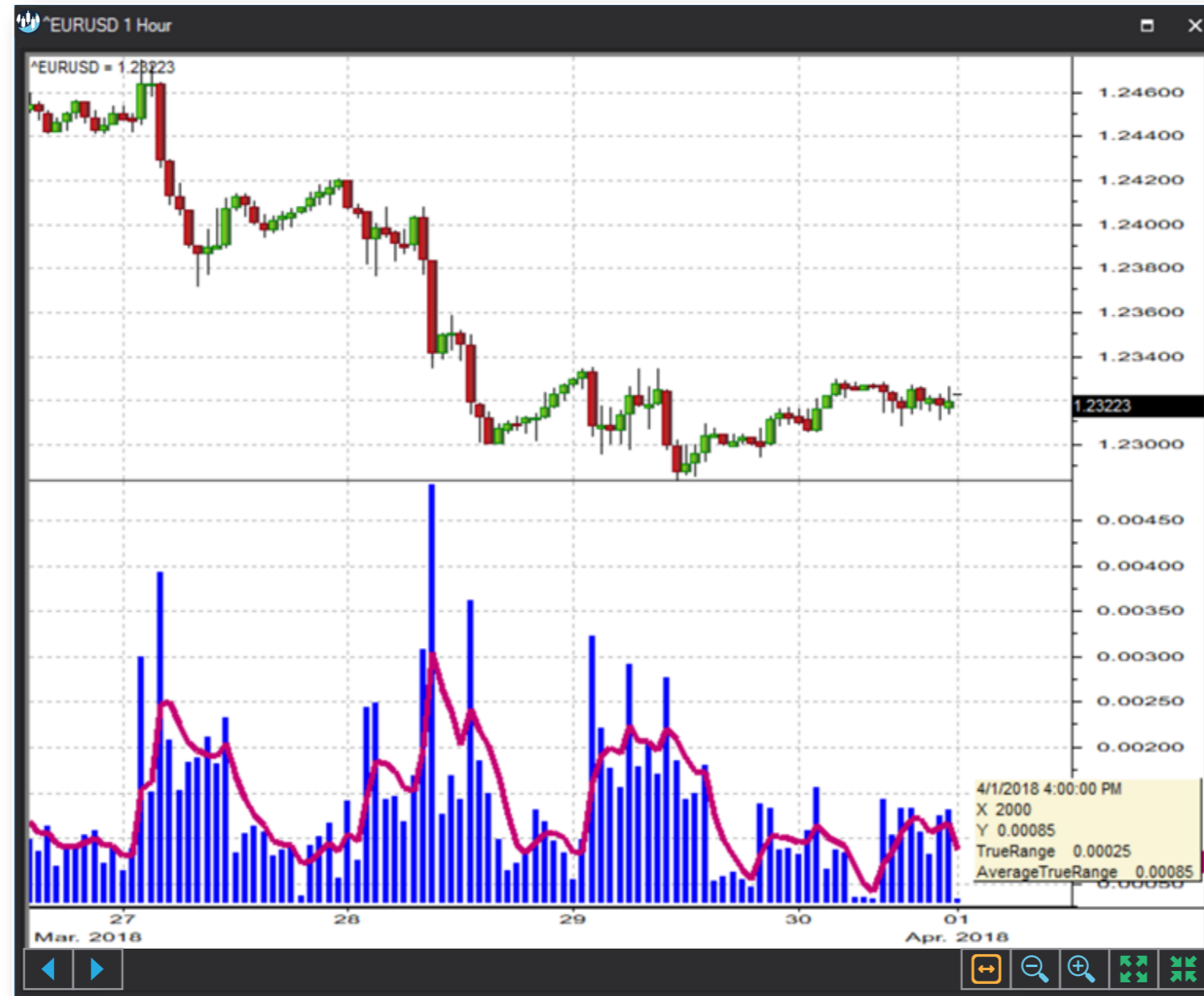
Series Configuration

Main

Save as Default Setting



## Sample Chart With Study





## Quant Script™ Wizard Study Dialog

The image shows two overlapping dialog boxes in the S-Trader desktop platform. The 'Custom Study Wizard' dialog is on the left, and the 'Add Variable' dialog is on the right.

**Custom Study Wizard**

- Save To Group: Default
- Custom Study Name: [Empty text box]
- Password: [Empty text box]
- Result: Histogram, Solid, 2, [Color swatches]
- Reverse\_Result: Histogram, Solid, 2, [Color swatches]
- Buttons: Add To New Panel (checked), Add New Variable, Edit Selected Variable
- Table:

Name	Description
------	-------------
- Buttons: OK, Cancel

**Add Variable**

- Name: [Empty text box]
- Description: [Empty text box]
- Tree view:
  - Primitive - Extremes
  - Primitive - Logical Operators
  - Primitive - Summation
  - Primitive - Trend
  - Relative Strength
  - Statistics
  - SVA Functions
  - Trend Indicators
  - Volatility
    - ATR
    - AverageTrueRange
    - ChaikinVolatility
    - CV
    - EFT
    - EFTS
    - EhlerFisherTransform
    - EhlerFisherTransformSignal
    - HighMinusLow

- Parameters: Period: 5, MaType: Weighted
- Buttons: Create Script Line
- Text area: AverageTrueRange(5, Weighted)
- Buttons: OK, Cancel



## Quant Script™ Study Dialog

**Custom Study Editor** [Close]

Save To Group: 6\_VOLATILITY [Dropdown] A 14.25 [Dropdown]

Custom Study Name: ATR

Password: [Text Field]

Result: Histogram [Dropdown] Solid [Dropdown] 2 [Spinner] [Color Picker: Teal]

Reverse\_Result: Histogram [Dropdown] Solid [Dropdown] 2 [Spinner] [Color Picker: Purple]

Formula Add To New Panel

```
SET RESULT =ATR(5, WEIGHTED)
SET REVERSE_RESULT = AverageTrueRange(5, WEIGHTED)
```

[OK] [Cancel]