

Trend Trigger Factor Breakout

Expert Advisor Documentation

PLATFORM

MetaTrader 5 (MT5)

TYPE

Trend-Following Breakout

TIMEFRAME

H1 (recommended)

WEBSITE

www.algoBot.live

⚠ Important Disclaimer This document is for educational and informational purposes only. It does not constitute financial or investment advice. Trading forex, CFDs, and other leveraged instruments involves substantial risk of loss and is not suitable for all investors. Past backtest performance does not guarantee future results. Never trade with capital you cannot afford to lose.

Overview

Trend Trigger Factor Breakout is a trend-following breakout Expert Advisor built on M. H. Pee's *Trend Trigger Factor* (TTF). Most oscillators compress price into overbought/oversold bands — the wrong lens for catching a trend as it is being born. TTF takes the opposite view: it measures *directional displacement* between two adjacent look-back windows, comparing how far the current window's highs and lows have stretched relative to the window immediately before it.

The result is an oscillator bounded near ± 200 that rises when the market decisively expands its highs upward and falls when it expands its lows downward. Instead of fading extremes, the EA **trades in the direction of the displacement**: it goes long when TTF crosses up through the `+TriggerLevel` and short when it crosses down through `-TriggerLevel`. A cross into the opposite regime flips the book — the losing side is closed and a fresh position is opened with the new trend.

Risk is fully volatility-scaled. Every stop is placed at an ATR-based distance from entry, and the take-profit is a configurable reward-to-risk multiple of that stop. All calculations — the two TTF windows and the ATR — are read from the **primary chart timeframe only**, so behaviour is deterministic and easy to reason about.

Why "trigger factor" rather than "oscillator"? TTF reaches +100 precisely when $\text{BuyPower} = 3 \times \text{SellPower}$ — that is, when upward range expansion is three times the downward expansion. That lopsidedness is the statistical signature of a young trend rather than random noise, which is why +100 is the natural default trigger.

How It Works

The Trend Trigger Factor

For a look-back length n (the `TtfPeriod`), the EA looks at two adjacent windows of bars: the *current* window (the most recent n closed bars) and the *prior* window (the n bars immediately before it). From these it computes two displacement measures:

```
BuyPower = HighestHigh(current n) - LowestLow(prior n) // how far highs stretched up
SellPower = HighestHigh(prior n) - LowestLow(current n) // how far lows stretched down
TTF = 100 * (BuyPower - SellPower) / (0.5 * (BuyPower + SellPower))
```

`BuyPower` is large when the current window's highs have pushed well above where the market recently was; `SellPower` is large when the current window's lows have dropped well below. The TTF ratio normalises the difference into a bounded reading around ± 200 , positive for upward displacement and negative for downward.

Entry Logic

On every newly-closed bar the EA evaluates TTF at the two most recent windows — `ttfNow` (newest) and `ttfPrev` (one bar earlier) — and looks for a fresh crossing of the trigger level:

- **Long signal:** `ttfPrev ≤ +TriggerLevel` and `ttfNow > +TriggerLevel` — the regime turns bullish.
- **Short signal:** `ttfPrev ≥ -TriggerLevel` and `ttfNow < -TriggerLevel` — the regime turns bearish.

Only a genuine *crossing* arms a trade; a reading that is already beyond the trigger does not re-fire. If no cross occurs, the bar is skipped.

Regime Flip & Position Management

The EA holds at most one position per direction. When a bullish cross fires it first closes any open short, then — if no long is already open — enters long. A bearish cross does the mirror: it closes any open long, then enters short. This "flip the book" behaviour keeps the EA aligned with the prevailing displacement regime and prevents holding a position against a confirmed reversal.

Stop Loss & Take Profit

Risk is sized from the Average True Range measured on the same timeframe:

$\text{risk} = \text{AtrStopMult} \times \text{ATR}$
 Long: $\text{SL} = \text{entry} - \text{risk}$ $\text{TP} = \text{entry} + \text{RewardRisk} \times \text{risk}$
 Short: $\text{SL} = \text{entry} + \text{risk}$ $\text{TP} = \text{entry} - \text{RewardRisk} \times \text{risk}$

Because the stop distance scales with ATR, the EA automatically widens its stops in volatile conditions and tightens them in quiet markets, keeping the monetary risk profile consistent. The take-profit is always a fixed multiple (**RewardRisk**) of that stop distance, so the reward-to-risk ratio of every trade is known in advance.

Worked example (long)

Suppose $\text{ATR} = 0.00120$, **$\text{AtrStopMult} = 2.0$** and **$\text{RewardRisk} = 1.8$** . A bullish TTF cross fires with the Ask at 1.10000.

- Risk distance = $2.0 \times 0.00120 = 0.00240$

- Stop loss = $1.10000 - 0.00240 =$

1.09760

- Take profit = $1.10000 + 1.8 \times 0.00240 =$

1.10432

(43.2 pips reward vs 24 pips risk)

Strategy in Action

The illustration below shows an example of how the strategy identifies a setup and triggers its entry and exit. This is a simplified, illustrative example for educational purposes — not real market data.



Illustrative example only. Actual market behaviour varies.

In the illustration the market first consolidates below range resistance while TTF hovers near zero. As the highs decisively expand upward, TTF crosses up through **+100** — the long trigger — and the EA buys at the next tick. The stop loss sits an ATR-multiple below entry and the take profit sits **1.8×** that distance above, which price reaches as the young trend extends.

Parameters

Parameter	Default	Description
TtfPeriod	15	Look-back length (in bars) of each of the two adjacent high/low windows TTF compares. Integer, range 5–40, step 1. Larger values react more slowly and filter noise; smaller values fire earlier but more often.
TriggerLevel	100	Absolute TTF level a fresh cross must clear to arm a signal ($\pm$ TriggerLevel). Numeric, range 20–150, step 10. Higher levels demand stronger displacement and produce fewer, more selective trades.
AtrPeriod	14	ATR length used for volatility-scaled risk sizing. Integer, range 5–30, step 1.
AtrStopMult	2.0	Stop distance as a multiple of ATR: stop = AtrStopMult $\times$ ATR from entry. Numeric, range 0.5–5.0, step 0.5.
RewardRisk	1.8	Take-profit distance as a multiple of the (entry $\rightarrow$ stop) risk. Numeric, range 1.0–4.0, step 0.2.
Lots	0.10	Fixed position size in lots. Numeric, range 0.01–1.0, step 0.05.
Magic	1001	Magic number identifying and isolating this EA's positions on the account.

Recommended Settings

The defaults are a balanced starting point for major FX pairs on the **H1** timeframe, where TTF has enough bar structure to distinguish genuine range expansion from intrabar noise. Suggested starting points:

- **Symbol:** Liquid major pairs (e.g. EUR/USD, GBP/USD, USD/JPY) with tight spreads.
- **Timeframe:** H1 for the balanced defaults; H4 for fewer, higher-conviction signals.
- **TtfPeriod:** 15 as a default; raise toward 20–25 on noisier symbols to demand cleaner displacement.
- **TriggerLevel:** 100 (the natural "3 $\times$ displacement" threshold). Lower to 60–80 for more trades, raise to 120–150 for stricter confirmation.
- **AtrStopMult / RewardRisk:** 2.0 / 1.8 gives room for volatility while keeping reward ahead of risk. Trend-followers may widen RewardRisk to 2.5–3.0 to let winners run.

Tip: Because the strategy flips the book on an opposite cross, it performs best in markets that produce sustained directional legs. In tight, choppy ranges TTF may whipsaw across the trigger — a higher `TriggerLevel` and/or a longer `TtfPeriod` reduces those false starts. Always validate any change in the MT5 Strategy Tester before trading live.

How to Install on MetaTrader 5

- 1 Copy `TrendTriggerFactorBreakout.ex5` to your MT5 `MQL5\Experts\` folder
- 2 Restart MetaTrader 5 and refresh the Navigator panel
- 3 Drag the EA onto a chart matching the recommended symbol and timeframe
- 4 Configure the input parameters and click **OK**
- 5 Enable **Algo Trading** in the MT5 toolbar

Note: The EA evaluates signals once per closed bar, so it does not need to run tick-by-tick to behave correctly. For realistic optimisation, run the Strategy Tester in *"Every tick based on real ticks"* mode over a representative sample of trending and ranging conditions.

Risk Warning

Trading foreign exchange, CFDs, and other leveraged financial instruments involves substantial risk of loss and is not suitable for all investors. The strategies and tools described in this document are provided for **educational purposes only** and do not constitute financial advice, investment recommendations, or solicitation to trade. Always consult a qualified financial adviser before making trading decisions. Past backtest performance is not indicative of future results.