

# Mass Index Reversal

Expert Advisor Documentation

## PLATFORM

MetaTrader 5 (MT5)

## TYPE

Volatility Reversal (Fade)

## TIMEFRAME

H1 – H4

## WEBSITE

[www.algotbot.live](http://www.algotbot.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

**Mass Index Reversal** is a volatility-driven reversal Expert Advisor built around Donald Dorsey's classic *Mass Index* indicator. Unlike momentum or trend tools, the Mass Index ignores price direction entirely and instead measures how quickly the market's high-low range is expanding and contracting. When range expansion accelerates and then suddenly collapses — the so-called *reversal bulge* — it signals that the prevailing move is running out of energy and a turn is likely near.

Because the Mass Index says nothing about *which way* price will turn, this EA reads direction from the slope of a price EMA and **fades** the existing move: it sells the exhaustion of an up-move and buys the exhaustion of a down-move. Every trade is protected by an ATR-based stop-loss and take-profit, so both risk and reward automatically scale with current market volatility. The EA holds at most one position per magic number at any time and lets the SL/TP levels manage the exit.

**Core idea:** The Mass Index "bulges" up as the trading range widens, then falls back as it narrows. The EA arms itself when the index climbs above `SetupLevel` (default 27.0) and fires the moment it drops back below `TriggerLevel` (default 26.5). Direction is taken from the price EMA slope, and the trade fades the move that just exhausted.

# How It Works

---

## The Mass Index Calculation

On each freshly closed bar the EA advances a set of recursive exponential moving averages and rebuilds the Mass Index from them:

- **Single EMA** — an EMA of the bar range `(High - Low)` over `EmaRangePeriod` bars.
- **Double EMA** — an EMA of the single EMA over the same period.
- **Ratio** — `single EMA / double EMA`, a measure of how fast the range is currently widening.
- **Mass Index** — the sum of the last `SumPeriod` ratios (default 25).

```
singleEMA = EMA(High - Low, EmaRangePeriod)
doubleEMA = EMA(singleEMA, EmaRangePeriod)
ratio      = singleEMA / doubleEMA
MassIndex  = Σ ratio    (last SumPeriod bars)
```

The indicators are advanced **exactly once per closed bar** using recursive state. The very first closed bar seeds both range EMAs with the initial range and the trend EMA with the initial close, so the MT5 port reproduces the C# engine's values bar-for-bar.

## Entry Logic — The Reversal Bulge

A small two-state machine watches the Mass Index:

1. **Arm:** When the Mass Index rises to or above `SetupLevel`, the bulge is *armed*.
2. **Fire:** While armed, the moment the Mass Index falls back *below* `TriggerLevel`, a reversal signal fires and the arm is reset.

Once a signal fires, the EA determines direction from the slope of the price EMA measured over `SlopeLookback` bars, and it **fades** the prevailing move:

- **Price EMA rising** into the bulge collapse → the up-move is exhausting → **SELL**.
- **Price EMA falling** into the bulge collapse → the down-move is exhausting → **BUY**.

If the slope is exactly flat, no trade is taken.

## Entry Filters

- **One position per magic:** if a position with this EA's magic number is already open, no new order is sent.
- **Spread guard:** if `MaxSpread` is greater than 0 and the current spread (in points) exceeds it, the signal is skipped.

- **Warmup:** no trades occur until a full window of `SumPeriod` ratios and `SlopeLookback + 1` EMA values has been collected.

## Exit Logic — ATR-Based Stop & Target

Risk is entirely volatility-scaled. On each signal the EA computes the Average True Range as a **simple average** of true range over the last `AtrPeriod` closed bars (matching the C# `ComputeAtr` — this is *not* Wilder's smoothed iATR). The stop and target are then placed a multiple of that ATR away from entry:

```
SELL:  entry = Bid
        SL    = entry + AtrSlMult × ATR
        TP    = entry - AtrTpMult × ATR

BUY:   entry = Ask
        SL    = entry - AtrSlMult × ATR
        TP    = entry + AtrTpMult × ATR
```

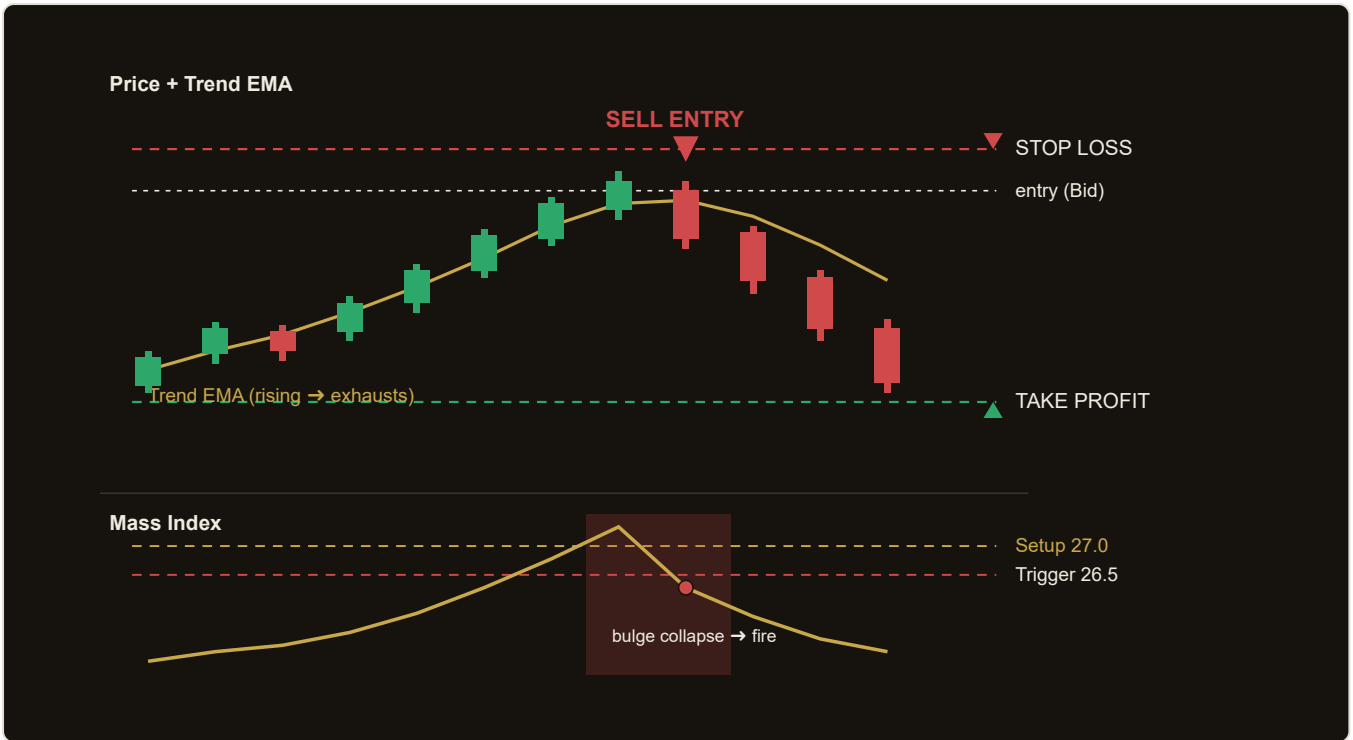
With the defaults ( `AtrSlMult = 2.0` , `AtrTpMult = 3.0` ) each trade targets a 1.5 : 1 reward-to-risk ratio. There is no trailing stop or break-even logic — the fixed SL and TP fully manage the exit, and only one position runs at a time.

**Note:** Because stop and target both scale with ATR, the strategy adapts automatically to changing volatility. In quiet markets stops tighten; in volatile markets they widen — keeping the risk profile consistent in ATR terms across conditions.

## 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.*

### Walk-through of the example above

The market rallies (green candles) and the Mass Index bulges above the *Setup* level of 27.0, arming the EA. As the range starts to contract the index collapses back below the *Trigger* level of 26.5. At that moment the trend EMA slope is positive (an up-move), so the EA fades it and opens a

### **SELL**

at the Bid. The stop-loss sits  $2 \times \text{ATR}$  above entry and the take-profit  $3 \times \text{ATR}$  below — the subsequent decline reaches the take-profit target.

## Parameters

---

Parameter	Default	Description
EmasRangePeriod	9	EMA period applied to the high-low range for both the single and double range EMAs. Range 5–20, step 1.
SumPeriod	25	Number of range-EMA ratios summed to form the Mass Index. Range 15–40, step 1.
SetupLevel	27.0	The Mass Index level that <i>arms</i> the reversal bulge. Range 24.0–30.0, step 0.5.
TriggerLevel	26.5	The level the Mass Index must fall back <i>below</i> (while armed) to fire a signal. Range 23.0–29.0, step 0.5.
TrendEmaPeriod	9	Period of the price (close) EMA whose slope defines trade direction. Range 5–30, step 1.
SlopeLookback	5	Number of bars over which the price-EMA slope is measured. Range 2–20, step 1.
AtrPeriod	14	Window for the simple average true range used to size SL/TP. Range 7–30, step 1.
AtrSIMult	2.0	Stop-loss distance in multiples of ATR. Range 1.0–4.0, step 0.25.
AtrTpMult	3.0	Take-profit distance in multiples of ATR. Range 1.0–6.0, step 0.25.
MaxSpread	30	Maximum allowed spread in points (0 disables the guard). Range 0–200, step 5.
Lots	0.10	Fixed order volume in lots. Range 0.01–1.0, step 0.05.
Magic	90427	Magic number identifying this EA's positions (used for the one-position-per-magic rule).

---

## Recommended Settings

---

The Mass Index reversal bulge is a relatively infrequent, higher-conviction signal, so it works best where individual bars carry meaningful range. The defaults follow Dorsey's classic 9-period / 25-sum configuration.

### SUGGESTED STARTING POINT

- **Symbols:** Major FX pairs (e.g. EUR/USD, GBP/USD) or index CFDs with clean volatility cycles.
- **Timeframe:** H1 to H4 — enough range per bar for the envelope EMAs to breathe, without excessive noise.

- **Bulge levels:** keep `SetupLevel` = 27.0 and `TriggerLevel` = 26.5. Widening the gap makes signals rarer but more decisive.
- **Risk:** `AtrSIMult` 2.0 / `AtrTpMult` 3.0 gives a 1.5 : 1 reward-to-risk. Reduce `AtrTpMult` for a higher hit-rate, quicker exits.
- **Volume:** start with the minimum `Lots` your risk tolerance allows and scale only after forward-testing.

**Tuning tip:** Because this is a counter-trend (fade) strategy, it performs best in ranging or mean-reverting markets and can struggle in strong, sustained trends. Consider tightening `MaxSpread` and forward-testing on a demo account before committing real capital.

**Backtest first.** Always run the Strategy Tester across several years and multiple symbols, and forward-test on a demo account, before deploying this EA on a live account. The ATR-based sizing means results are sensitive to the instrument's volatility profile.

## How to Install on MetaTrader 5

---

- 1 Copy `MassIndexReversal.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

**Tip:** To edit or recompile the source, open `MassIndexReversal.mq5` in MetaEditor (F4 in MT5) and press **Compile** (F7). A successful build regenerates `MassIndexReversal.ex5` automatically.

## 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.