

Vortex Trend Shift

Expert Advisor Documentation

PLATFORM	TYPE	TIMEFRAME	WEBSITE
MetaTrader 5 (MT5)	Trend Following (Momentum)	H1 (timeframe-agnostic)	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

Vortex Trend Shift is a trend-following momentum Expert Advisor built on the **Vortex Indicator** (Botes & Siepman). Unlike a moving-average crossover, the Vortex Indicator is a directional-movement oscillator designed to capture the *start* of a directional leg rather than lagging behind it, so the EA aims to join a move as it begins instead of after it has matured.

The strategy reads two opposing “rotational” pressures inside a rolling window of bars — an upward line (VI+) and a downward line (VI-). Because both are normalised by the true range, they are scale-free and behave consistently across any symbol or timeframe. When VI+ pulls above VI- the market is being drawn up; when VI- leads, it is being drawn down.

A raw VI+/VI- crossover whipsaws in sideways markets, so Vortex Trend Shift never trades a bare cross. Every entry is **triple-gated** — a confirmed crossover, a strength filter, and a longer-term EMA trend filter must all agree before an order is sent. Exits are handled either by an opposing confirmed cross (momentum has flipped) or by a volatility-scaled ATR stop-loss / take-profit bracket. The EA holds **one position at a time** and acts only on the close of each bar, so its signals never repaint.

How It Works

The Vortex Indicator

For a look-back of `N` bars, the indicator measures two movement sums and normalises them by the summed true range:

```
VM+ = |High_t - Low_(t-1)|      (upward vortex movement)
VM- = |Low_t - High_(t-1)|      (downward vortex movement)
TR  = true range

VI+ = Sum(VM+, N) / Sum(TR, N)
VI- = Sum(VM-, N) / Sum(TR, N)
```

Each term compares the current bar with the one before it, so the calculation uses only fully **confirmed** bars. The just-closed bar is evaluated together with the bar before it to detect a genuine crossover.

Entry Logic — Triple-Gated

A trade is only opened when all three of the following conditions are satisfied on the just-closed bar:

1. **Cross** — $VI+$ crosses above $VI-$ for a long (or $VI-$ crosses above $VI+$ for a short). The cross is confirmed on the closed bar, never mid-formation.
2. **Strength** — the newly-dominant line must exceed `StrengthThreshold`. A value above `1.0` signals genuine directional pressure rather than a flat-market brush.
3. **Trend** — price must agree with a longer-period EMA: close above the EMA for longs, close below it for shorts. This keeps the EA trading *with* the prevailing backdrop.

Why three gates? A raw Vortex crossover fires constantly in choppy conditions. Requiring the dominant line to clear a strength floor *and* price to sit on the correct side of the trend EMA filters out the low-conviction crosses that produce whipsaw losses, at the cost of taking fewer — but cleaner — signals.

Exit Logic

An open position can be closed in one of two ways:

- **Momentum flip** — an opposing confirmed cross (a bearish cross against a long, or a bullish cross against a short) closes the trade early, before the bracket is reached.
- **ATR bracket** — otherwise the trade is managed by its volatility-scaled stop-loss and take-profit, which are set at order time and left to run.

The EA manages any existing position *before* considering a new one and keeps only one trade open at a time; the freed slot re-arms on the following bar.

Risk — Volatility-Scaled Bracket

Both exits are sized from the Average True Range so the bracket adapts to the instrument and timeframe with no hard-coded point value:

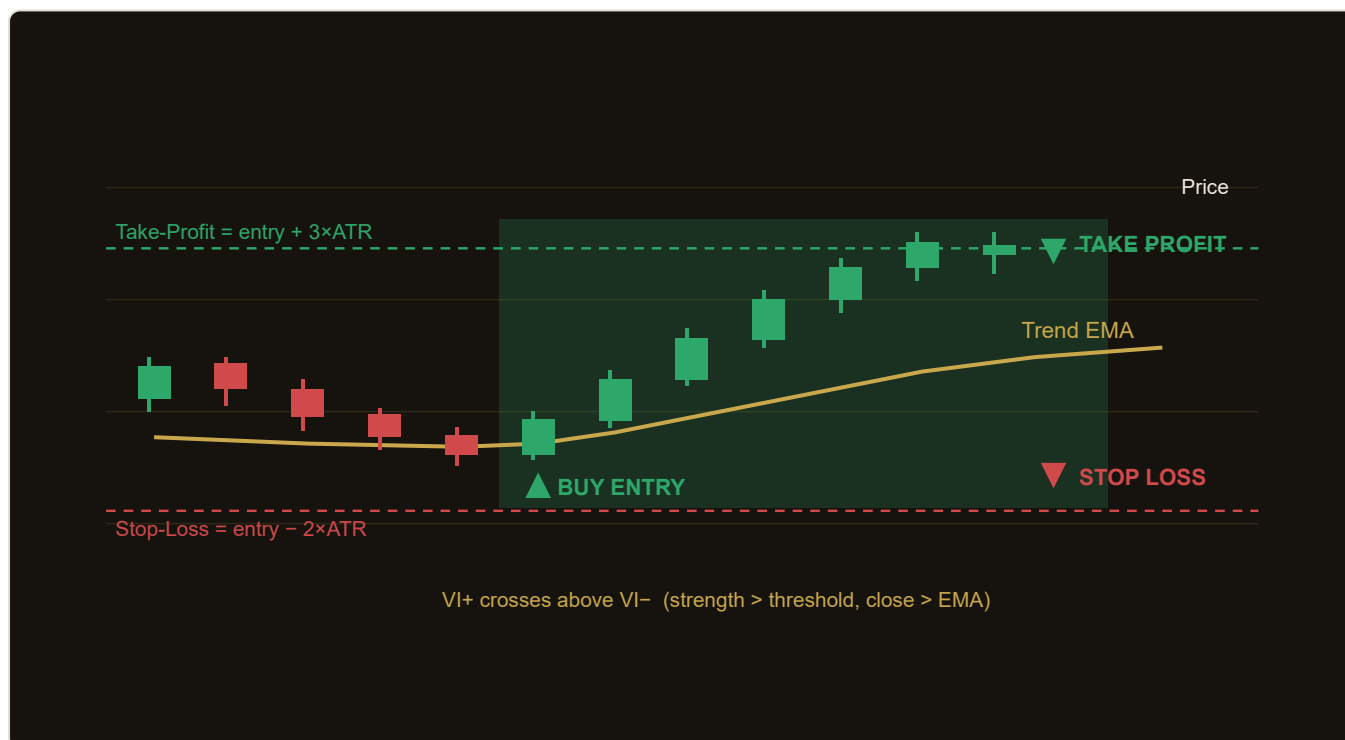
```
Stop-Loss    = entry - StopAtrMult      × ATR  (long)
Take-Profit  = entry + TakeProfitAtrMult × ATR  (long)
              (mirrored for shorts)
```

With the defaults (`StopAtrMult = 2.0` , `TakeProfitAtrMult = 3.0`) the target sits at roughly **1.5×** the stop distance, giving a positive reward-to-risk profile on winning trades.

No repainting. Every calculation — the Vortex sums, the EMA, and the ATR — is read from closed bars, and the EA acts only once per newly-closed bar. Signals shown in backtest are the same ones that would have fired live.

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.

Walkthrough of the illustration

Price drifts down toward the rising trend EMA while VI- leads. On the marked bar, VI+ crosses back above VI-, the dominant line clears the strength threshold, and the close is above the EMA — all three gates pass, so a long is opened at that bar's close. The stop sits two ATR below entry, the target three ATR above. Price extends into the breakout zone and reaches the take-profit before any opposing cross appears.

Parameters

Parameter	Default	Description
VortexPeriod	14	Look-back for the Vortex sums (VI+ / VI-). Range 7–30, step 1. Shorter reacts faster; longer smooths out noise.
AtrPeriod	14	ATR look-back used to size the stop-loss / take-profit bracket. Range 7–30, step 1.
TrendEmaPeriod	50	EMA look-back for the directional trend filter. Range 20–200, step 10. Higher demands a stronger backdrop before trading.
StrengthThreshold	1.00	The newly-dominant Vortex line must exceed this to confirm real pressure. Range 0.90–1.30, step 0.05.
StopAtrMult	2.00	Stop-loss distance as a multiple of ATR. Range 1.00–5.00, step 0.50.
TakeProfitAtrMult	3.00	Take-profit distance as a multiple of ATR. Range 1.00–8.00, step 0.50.
Lots	0.10	Trade volume in lots. Range 0.01–1.00, step 0.05.
Magic	7314	Magic number used to tag and manage this EA's positions. Range 0–9,999,999, step 1.

Tip: Give each running instance of the EA a unique `Magic` number if you deploy Vortex Trend Shift on more than one chart, so each instance only manages its own trades.

Recommended Settings

Vortex Trend Shift is fully timeframe-agnostic and runs on whatever timeframe it is attached to, but it is designed around trending instruments.

- **Symbols:** a trending FX major or metal — for example `EURUSD` or `XAUUSD`.

- **Timeframe:** `H1` is the default playground; higher timeframes reduce signal frequency and noise, lower timeframes increase both.
- **Defaults:** the shipped values (Vortex 14, ATR 14, EMA 50, strength 1.00, 2.0/3.0 ATR bracket) are a balanced starting point.

TUNING NOTES

- **Fewer, cleaner signals:** raise `StrengthThreshold` toward 1.10–1.20 and/or lengthen `TrendEmaPeriod`.
- **More responsive:** shorten `VortexPeriod` and `TrendEmaPeriod` — expect more trades and more whipsaw.
- **Wider room / bigger targets:** increase `StopAtrMult` and `TakeProfitAtrMult` together to keep the reward-to-risk ratio intact.

Always validate before going live. Backtest on quality history and forward-test on a demo account with your broker's spreads and execution before committing real capital. Optimise parameters only within the ranges shown in the Parameters table.

How to Install on MetaTrader 5

- 1 Copy `VortexTrendShift.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 its logic once per closed bar, so no action is taken intra-bar. On attach, allow at least `TrendEmaPeriod` bars of history to load before the first signal can form.

Risk Warning

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