

Volatility Stability Breakout

Expert Advisor Documentation

PLATFORM

MetaTrader 5 (MT5)

TYPE

Volatility-Gated Breakout

TIMEFRAME

Intraday (M15 / M30)

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

Volatility Stability Breakout is a channel-breakout Expert Advisor built around an unusual regime filter. Most breakout systems ask whether volatility is *high* or *low*. This strategy asks a different, rarely-used question: is volatility *steady* or *erratic*?

The intuition is that sustained, tradable trends tend to unfold while the market's volatility is calm and stable — each bar's true range is similar to the last, so price walks in one direction without violent two-sided swings. When volatility itself is jumping around bar-to-bar (news spikes, thin liquidity, stop-runs), breakouts are usually traps that snap back. The EA therefore only acts on a breakout when the market is in a demonstrably steady regime.

Steadiness is quantified as the **volatility-of-volatility**: the coefficient of variation of the ATR series over a lookback window. A breakout of a Donchian channel is only traded when this measure is below a threshold, the breakout bar is confirmed by its own range expansion, and the trade is then managed with symmetric ATR-based stops and targets. The logic is fully symmetric for long and short.

Core idea. $\text{volOfVol} = \text{StdDev}(\text{ATR history}) / \text{Mean}(\text{ATR history})$. A *low* value means ATR barely changes bar-to-bar — a steady, orderly regime worth trading. A *high* value means ATR is erratic — a jumpy, untrustworthy regime that is filtered out.

How It Works

On each finished bar the EA maintains three rolling series computed entirely from bar data: the true range of every bar, a simple-average ATR ending at each bar, and the resulting ATR history. From these it derives the regime measure, the breakout channel, and the trade management levels. Nothing depends on a platform indicator handle — the ATR here is a *simple* average of the last `AtrPeriod` true ranges (not Wilder's smoothing).

1. True range & ATR

For each completed bar the true range is the greater of the bar's high–low span and the gaps to the previous close:

```
TR = max( High - Low, |High - prevClose|, |Low - prevClose| )  
ATR = simple average of the last AtrPeriod true ranges
```

2. The regime gate (volatility-of-volatility)

Over the most recent `VolWindow` ATR readings, the EA computes the mean and the population standard deviation, then divides one by the other to obtain the coefficient of variation:

```
meanAtr = mean( ATR history over VolWindow )  
volOfVol = StdDev( ATR history over VolWindow ) / meanAtr  
steadyRegime = volOfVol < StabilityThreshold
```

Only when `steadyRegime` is true is the market considered calm enough to trust a breakout.

3. The breakout trigger

A Donchian channel is built from the `ChannelPeriod` bars *behind* the just-completed bar — the highest high and lowest low of that window. The just-completed bar is the breakout candidate:

- **Broke up** — its close is above the channel high.
- **Broke down** — its close is below the channel low.

4. Expansion confirmation

To reject a marginal poke past the channel, the breakout bar's own true range must be at least the current ATR (`TR ≥ ATR`). This ensures the break is a genuine thrust rather than a slow drift over the line.

5. Entries

When the regime is steady *and* the breakout is a confirmed expansion and no position is open, the EA enters in the direction of the break: **Long** on an upper break, **Short** on a lower break. Longs enter at the ask, shorts at the bid.

6. Exits & position management

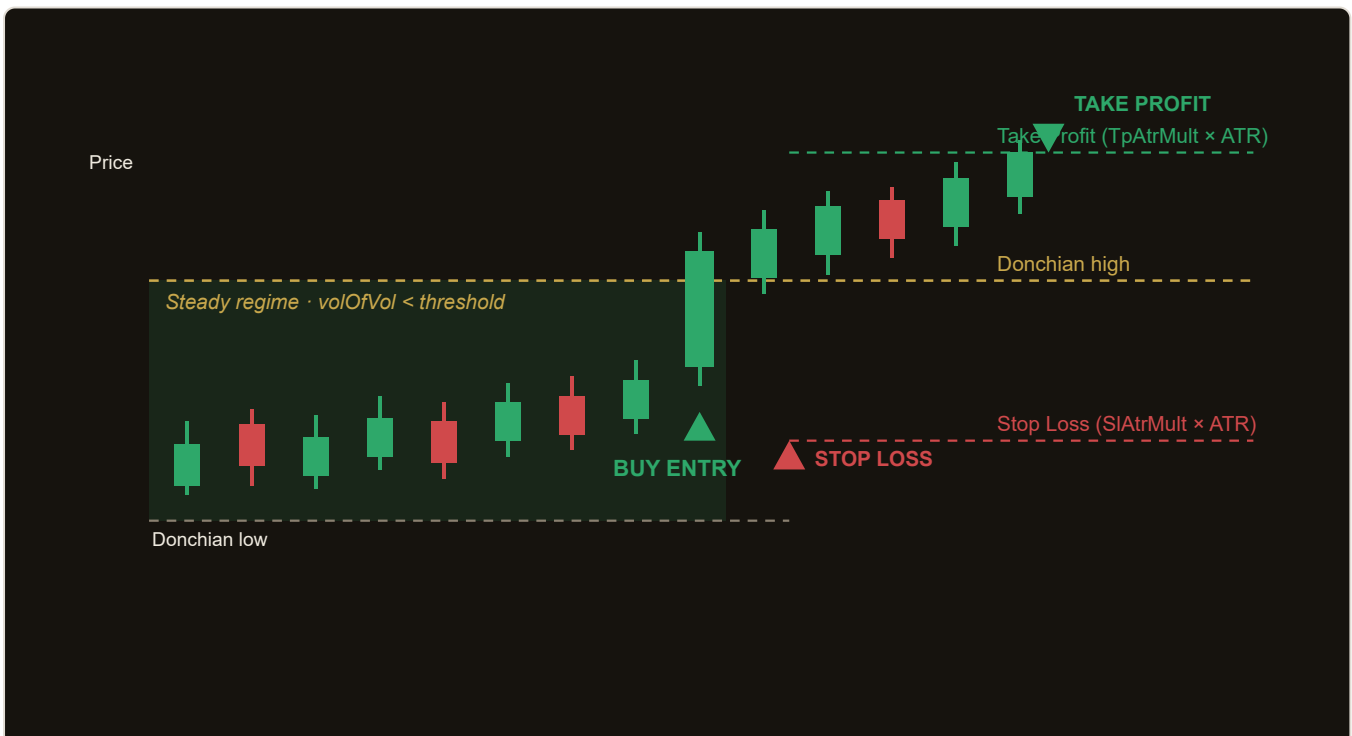
Only one position per magic number is held at a time. Exits are handled two ways:

- **Regime-flip exit.** If a position is open and the opposite break occurs (a long while price breaks the lower channel, or a short while price breaks the upper channel), the position is closed immediately.
- **ATR stop & target.** Otherwise the trade is managed by a fixed stop-loss at $SL_{ATR} \times ATR$ and a take-profit at $Tp_{ATR} \times ATR$, measured from the entry price at the time of the fill.

Single timeframe. Every calculation uses the chart's own timeframe, so the EA runs on whatever timeframe you attach it to. It was designed with liquid intraday FX in mind (e.g. EURUSD M15/M30) but is not locked to any one instrument.

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.

Reading the illustration

During the shaded stretch the candles are similar in size — volatility is steady, so `volOfVol` sits below `StabilityThreshold`. The breakout bar closes decisively above the Donchian high with a range at least equal to ATR (expansion confirmed), triggering a

long

. The trade is then managed by an ATR stop below and an ATR take-profit above; here price walks up to the take-profit.

Parameters

Parameter	Default	Description
ChannelPeriod	20	Donchian channel length the breakout must clear. Range 8–60, step 2. Larger values demand a stronger, longer-range break.
AtrPeriod	14	ATR length used both for stops/targets and as the base of the volatility-of-volatility series. Range 5–40, step 1.
VolWindow	20	Window over which the coefficient of variation of ATR is measured. Range 8–60, step 2. Longer windows give a smoother, slower regime read.
StabilityThreshold	0.22	Regime gate: trades are taken only when <code>volOfVol</code> (CV of ATR) is below this value. Range 0.05–0.60, step 0.01. Lower is stricter (calmer regimes only).
SIATRMult	1.8	Stop-loss distance in ATR multiples from entry. Range 0.5–5.0, step 0.1.
TpATRMult	3.2	Take-profit distance in ATR multiples from entry. Range 0.5–8.0, step 0.1. Default gives roughly a 1.8:1 reward-to-risk.
Lots	0.10	Order volume in lots. Range 0.01–1.0, step 0.05.
Magic	7315	Magic number identifying this EA's positions. Only one position per magic is held at a time.

Recommended Settings

The defaults are tuned for liquid intraday FX. Use the following as a sensible starting point and always validate on your own broker's data before trading live.

Setting	Suggested	Notes
Symbol	EURUSD	Any liquid major with tight spreads works well; avoid thin, gappy instruments.
Timeframe	M15 / M30	Intraday timeframes give enough bars for the vol-of-vol window while staying responsive.
ChannelPeriod	20	Raise toward 30–40 for fewer, higher-conviction breaks.
StabilityThreshold	0.18–0.25	Lower it to trade only the calmest regimes; raise it to take more setups.
SIATRmult / TpATRmult	1.8 / 3.2	Keep TP > SL to preserve a positive reward-to-risk profile.

Tuning tip. Treat `StabilityThreshold` as the master control. Tightening it reduces trade frequency but concentrates entries in the orderly regimes the strategy is designed to exploit; loosening it takes more trades at the cost of more whipsaw-prone conditions.

Optimisation caution. Because the regime gate can be tuned to fit any historical window, over-optimising `StabilityThreshold`, `ChannelPeriod`, and `VolWindow` to a single dataset is easy and misleading. Prefer parameter ranges that stay robust across multiple symbols and out-of-sample periods.

How to Install on MetaTrader 5

- 1 Copy `VolatilityStabilityBreakout.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 uses no external indicator handles — all volatility is computed internally from bar prices, so there is nothing extra to install. It acts once per completed bar, so it is comfortable to run in the Strategy Tester on *Open prices only* for a fast first pass.

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.