

Acceleration Band Breakout

Expert Advisor Documentation

PLATFORM

MetaTrader 5 (MT5)

TYPE

Volatility Breakout (Trend-Following)

TIMEFRAME

H1 – H4 (any chart period)

WEBSITE

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

Acceleration Band Breakout is a trend-following, volatility-envelope breakout Expert Advisor built on Price Headley's *Acceleration Bands*. Unlike a fixed-width channel, these bands widen and narrow with each bar's own normalised range, so the envelope "breathes" with market volatility. A breakout is only flagged when price genuinely accelerates past what recent expansion can account for — not merely because the market has drifted wide.

The EA trades a single symbol on a single timeframe (the chart period it is attached to). It acts strictly on completed candles, takes at most one position per magic number at a time, and manages every trade with an ATR-based stop-loss and take-profit. Its parameter set is intentionally small and broadly ranged to reduce the risk of curve-fitting.

Core idea. The Acceleration Bands expand around price in proportion to each bar's normalised range. A close that pushes *through* a band that price was still inside on the prior bar signals a fresh acceleration in the prevailing direction — a candidate breakout worth trading, provided the trend agrees.

How It Works

1. The Acceleration Bands

For every bar, a normalised range is computed and used to project two raw price levels, which are then smoothed to form the bands:

```
r          = (High - Low) / ((High + Low) / 2)      // normalised range
upperRaw = High * (1 + BandFactor * r)
lowerRaw = Low  * (1 - BandFactor * r)

Upper Band = SMA(upperRaw, BandPeriod)
Lower Band = SMA(lowerRaw, BandPeriod)
Middle Band = SMA(Close,    BandPeriod)
```

A larger `BandFactor` produces a wider envelope, which in turn yields fewer but stronger breakout signals. The `BandPeriod` controls how smooth and slow-moving the envelope is.

2. Entry — a fresh cross of the envelope

A breakout is only trusted when the just-completed candle **closes beyond a band having closed inside it on the prior bar**. This “fresh cross” condition avoids re-triggering on bars that are merely already outside the envelope. The long and short rules are distinct and symmetric:

- **Long** — the previous close was at or below the Upper Band *and* the current close is above the Upper Band.
- **Short** — the previous close was at or above the Lower Band *and* the current close is below the Lower Band.

TREND FILTER (ANTI-WHIPSAW)

To avoid counter-trend pokes through the envelope, the Middle band must be sloping in the breakout direction. The EA compares the Middle band now against its value `SlopeBars` bars ago:

- A long is only taken when the Middle band is rising (`midNow > midPast`).
- A short is only taken when the Middle band is falling (`midNow < midPast`).

This drawdown-control filter keeps the strategy taking expansions that agree with the prevailing drift and skipping those that fight it.

3. Exit — ATR-based stop & target

Every position is protected by an Average True Range (ATR) stop-loss and take-profit set at entry. There is no trailing logic; the trade runs to whichever level is hit first:

Long: SL = entry - AtrSlMult * ATR TP = entry + AtrTpMult * ATR
 Short: SL = entry + AtrSlMult * ATR TP = entry - AtrTpMult * ATR

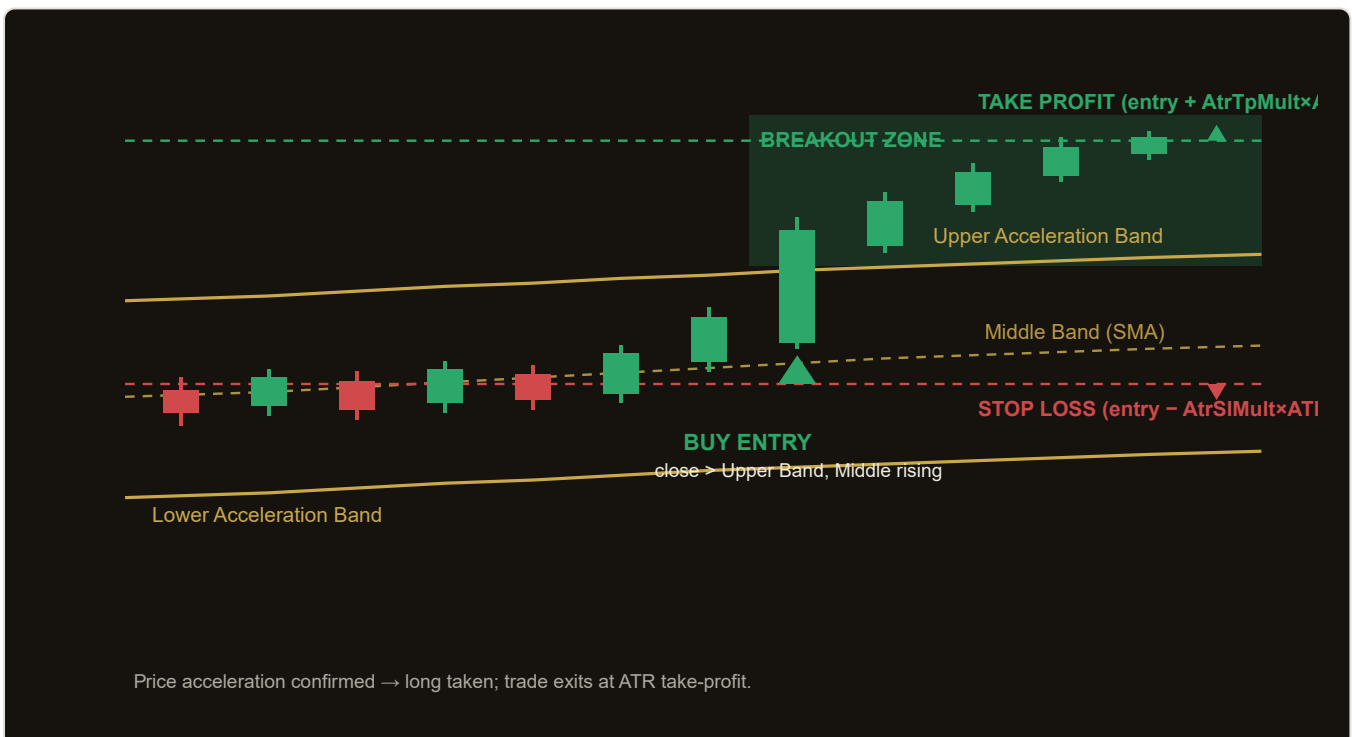
With the defaults (`AtrSlMult 2.0` , `AtrTpMult 3.0`) each trade targets a 1.5× reward-to-risk ratio. The EA rejects any signal where the computed stop distance is zero or negative.

4. Trade management

- **One position per magic** — no new trade is opened while a position with the same magic number is already open.
- **New-bar execution** — signals are evaluated once per completed bar, never intrabar, to keep behaviour deterministic and backtest-consistent.
- **Fixed-lot sizing** — every trade uses the fixed `Lots` volume.
- **Single timeframe** — all price and indicator reads use the chart period the EA is attached to.

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.

Parameters

Parameter	Default	Description
BandPeriod	20	Smoothing length (SMA) of the Upper, Lower and Middle bands. Range 10–50, step 2. Longer values give a smoother, slower-reacting envelope.
BandFactor	4.0	Band-width multiplier applied to each bar's normalised range. Range 1.0–8.0, step 0.5. Larger → wider envelope → fewer, stronger breakouts.
SlopeBars	3	Lookback for the Middle-band slope trend filter. Range 1–10, step 1. The band must slope in the breakout direction over this many bars.
AtrPeriod	14	ATR length used to size the stop and target distances. Range 7–30, step 1.
AtrSImult	2.0	Stop-loss distance = $\text{AtrSImult} \times \text{ATR}$ from entry. Range 1.0–4.0, step 0.5.
AtrTpMult	3.0	Take-profit distance = $\text{AtrTpMult} \times \text{ATR}$ from entry. Range 1.0–6.0, step 0.5.
Lots	0.10	Fixed lot size per trade. Range 0.01–1.0, step 0.05.
Magic	7431	Magic number identifying this EA's positions. Only one open position per magic is allowed at a time; use distinct values to run several instances.

Recommended Settings

The Acceleration Band Breakout is designed for trending, liquid instruments where volatility expansions carry follow-through. As a starting point:

- **Symbols** — major FX pairs (e.g. EUR/USD, GBP/USD), major indices, or gold, where clean directional moves occur.
- **Timeframe** — H1 to H4. Higher timeframes reduce false breakouts at the cost of fewer signals.
- **Envelope** — keep `BandPeriod` near 20 and `BandFactor` around 4.0. Raise `BandFactor` toward 6–8 if you see too many marginal breakouts.
- **Risk** — the default `AtrSImult 2.0` / `AtrTpMult 3.0` gives a 1.5× reward-to-risk ratio; widen the stop on noisier instruments.

Tip. Because the strategy trades on the completed-bar close, it is well suited to “set and forget” operation on a VPS. Always run a backtest and forward test on your specific broker's spread and symbol before deploying with live capital.

Example — a long breakout

On EUR/USD H1 with default inputs, price consolidates just under the Upper Acceleration Band. A strong bar closes above the band while the Middle band has been rising over the last 3 bars. On the next bar the EA buys 0.10 lots, sets the stop $2 \times \text{ATR}$ below entry and the target $3 \times \text{ATR}$ above. The position closes automatically when either level is reached.

How to Install on MetaTrader 5

- 1 Copy `AccelerationBandBreakout.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

Risk Warning

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