

# Conviction Range Breakout

Expert Advisor Documentation

## PLATFORM

MetaTrader 5 (MT5)

## TYPE

Price-Action Range Breakout

## TIMEFRAME

Any (H1 recommended)

## 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

**Conviction Range Breakout** is a pure price-action Expert Advisor that trades breakouts from tight consolidation ranges — but only when the breakout proves it is backed by real intent. Naive range breakouts bleed capital because they react to every poke through a level, most of which are thin, low-participation drifts that snap straight back. This EA solves that by demanding **proof of conviction** before it commits a single trade.

The system uses **no indicators whatsoever**. Every decision is derived from raw OHLC prices and tick volume. It first identifies a settled consolidation "box" — the highest high and lowest low of the most recent **RangeBars** bars — and verifies the box is genuinely tight relative to recent volatility. It then waits for a single freshly-closed bar to breach a box edge, and takes the trade only if that one bar passes **three independent conviction tests** simultaneously: a clean close beyond the edge, a dominant candle body, and a surge in tick volume.

Because the stop is placed structurally on the far side of the box and the target is a fixed multiple of that risk, winners are paid out of the very range that defined the setup. Long and short trades are exact mirror images of each other.

# How It Works

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## 1. Building the consolidation box

On every completed bar, the EA looks back over the `RangeBars` bars immediately preceding the most recently closed bar (the "trigger" bar). From those bars it records the **highest high (box top)** and the **lowest low (box bottom)**, plus the average tick volume across the box. The distance between top and bottom is the **box height**.

## 2. Demanding a tight, settled range

A breakout only matters if price was genuinely coiled beforehand. The EA computes a volatility proxy — the average bar range (High–Low) over the last `VolPeriod` bars — and rejects any "box" whose height exceeds `MaxBoxMult × avgRange`. This filters out tall, already-trending structures that merely look like ranges.

**Why this matters:** a tight box means stored energy and a nearby, well-defined stop. A wide box produces a distant stop and weak edges, so the EA simply stands aside.

## 3. The three conviction gates

When the trigger bar breaches a box edge, the trade is taken **only if all three of these direction-independent tests pass**:

- **Body dominance** — the candle body must fill at least `BodyRatio` of its full high-low range. This rejects indecision dojis and demands a decisive candle.
- **Participation (volume surge)** — the trigger bar's tick volume must be at least `VolumeMult` × the average volume of the box bars. This confirms real supply/demand is stepping in, not a vacuum.
- **Close location** — the bar must close in the leading fraction of its own range (at least `CloseLoc`), beyond the box edge by a volatility-scaled buffer of `BufferMult × avgRange`. This proves a clean break, not a wick poke that reversed by the close.

## 4. Entry logic

With all gates satisfied:

- **Long** — a bullish bar (`Close > Open`) closes clear above `box top + buffer`, near its own high (`closeLocUp ≥ CloseLoc`). The EA buys at the current Ask.
- **Short** — a bearish bar (`Close < Open`) closes clear below `box bottom - buffer`, near its own low (`closeLocDn ≥ CloseLoc`). The EA sells at the current Bid.

Only **one position per magic number** is allowed at a time; while a trade is open, its structural stop and target manage it and no new entries are taken.

## 5. Stop loss & take profit

The protective stop is placed on the **far side of the box**, so the structure itself defines the risk:

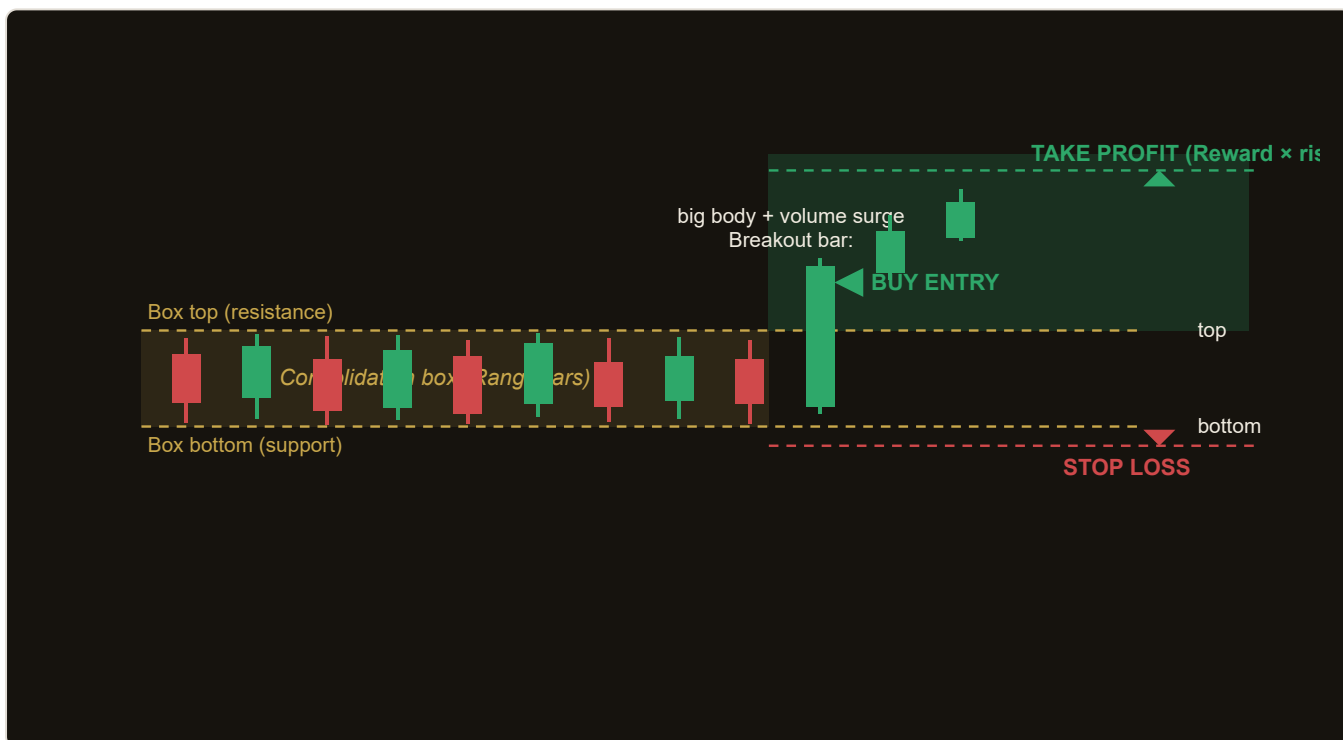
- **Long:** Stop =  $\text{box bottom} - \text{buffer}$ . Risk =  $\text{entry} - \text{stop}$ . Target =  $\text{entry} + \text{Reward} \times \text{risk}$ .
- **Short:** Stop =  $\text{box top} + \text{buffer}$ . Risk =  $\text{stop} - \text{entry}$ . Target =  $\text{entry} - \text{Reward} \times \text{risk}$ .

### Worked example (long)

Box top = 1.1050, box bottom = 1.1000, buffer = 0.0003, **Reward = 1.8**. A decisive bull bar closes at 1.1058 on a volume surge. Entry  $\approx 1.1058$ , stop = 1.0997 (risk  $\approx 61$  pips), target =  $1.1058 + 1.8 \times 0.0061 \approx 1.1168$ . The trade risks the depth of the box to aim for 1.8 $\times$  that distance.

## 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

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| Parameter  | Default | Description   |
|------------|---------|---|
| RangeBars  | 12      | Number of bars forming the consolidation box (highest high / lowest low). Range 6–40, step 1.   |
| VolPeriod  | 20      | Bars used for the average-range volatility proxy that scales the box-tightness and buffer tests. Range 8–60, step 2.                  |
| MaxBoxMult | 3.0     | Maximum allowed box height as a multiple of average range; taller "boxes" are rejected as already-trending. Range 1.5–7.0, step 0.5.  |
| BufferMult | 0.15    | Breakout / stop buffer expressed as a multiple of average range. Higher values demand a cleaner break. Range 0.0–1.0, step 0.05.      |
| BodyRatio  | 0.55    | Minimum candle body as a fraction of its high-low range — the body-dominance (decisiveness) gate. Range 0.30–0.90, step 0.05.         |
| CloseLoc   | 0.65    | Minimum close location within the breakout bar's own range (1 = at the extreme). The close-location gate. Range 0.50–0.95, step 0.05. |
| VolumeMult | 1.30    | Required breakout tick volume as a multiple of the box's average volume — the participation gate. Range 1.00–3.00, step 0.10.         |
| Reward     | 1.8     | Take-profit distance as a multiple of the structural risk (box depth + buffer). Range 0.5–5.0, step 0.5.                              |
| Lots       | 0.10    | Fixed order volume in lots. Range 0.01–1.0, step 0.05.  |
| Magic      | 8841    | Magic number used to identify and manage this EA's positions independently of other EAs.  |

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## Recommended Settings

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The defaults are deliberately balanced for liquid instruments on intraday timeframes. Because the strategy works purely from OHLC and tick volume, it runs on whatever single timeframe the chart/backtest selects, but it is best suited to timeframes where tick volume is meaningful and ranges are well-defined.

- **Symbols:** liquid majors (e.g. EURUSD, GBPUSD) or major indices where tick volume reliably reflects participation.
- **Timeframe:** H1 is a good starting point; M15–H4 are all reasonable. Avoid very low timeframes where tick-volume noise dominates.

- **Selectivity:** raise `BodyRatio`, `VolumeMult` and `CloseLoc` for fewer but higher-conviction trades; lower them for more frequent (but noisier) signals.
- **Box quality:** reduce `MaxBoxMult` to insist on tighter coils; increase it to admit looser ranges.

**Tip:** always re-optimize `RangeBars`, `VolPeriod` and the three conviction gates per symbol and timeframe using walk-forward testing. A volume surge on EURUSD H1 looks very different from one on an index M5 chart.

**Note:** tick volume is *broker-dependent*. The participation gate (`VolumeMult`) compares the trigger bar against its own box average, which makes it robust to scale, but absolute tick-volume values still differ between brokers — validate on the data feed you intend to trade.

## How to Install on MetaTrader 5

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- 1 Copy `ConvictionRangeBreakout.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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