

Range Edge Momentum Thrust

Expert Advisor Documentation

PLATFORM	TYPE	TIMEFRAME	WEBSITE
MetaTrader 5 (MT5)	Breakout / Momentum	M15	www.algotbot.live

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Overview

Range Edge Momentum Thrust is a pure price-action breakout strategy. It uses no oscillators and no smoothing indicators on the entry decision — only the raw geometry of recent candles and a single Average True Range (ATR) reading for volatility scaling.

Markets spend most of their time coiled inside a horizontal range, drifting between a shelf of resistance above and a shelf of support below. Eventually a genuine imbalance of supply and demand forces price through one edge. The difficulty is that *most* edge-pokes are noise: a weak, indecisive candle nicks the level and is immediately faded back inside the range. A break carried by a decisive **power bar** — a wide body that closes pinned to its own extreme — reflects real initiative buying or selling, and that is the kind of break that tends to continue.

Range Edge Momentum Thrust fuses the two ideas into one filtered signal. It first measures the fresh resistance/support shelf formed by the bars immediately before the breakout, then demands that the breakout bar prove its conviction through three independent momentum tests before any order is sent. Risk is defined up front with an ATR-based stop and target, and only one position per magic number is held at a time.

Design intent: The strategy is timeframe-agnostic. Its natural home is an active FX major such as **GBPUSD on the M15 chart**, but every price reference is read from the chart it is attached to, so it runs unchanged on whatever symbol and timeframe you select.

How It Works

On each completed bar the EA evaluates the most recently closed candle (the *signal bar*) against the shelf of price that preceded it. A trade is only considered when a breakout and all three momentum conditions line up together.

1. The Range Edge (the shelf)

Before looking at the signal bar, the EA measures the **highest high** and **lowest low** of the `RangePeriod` completed bars that sit *immediately before* it. These two levels are the fresh shelf of resistance and support that a real breakout must clear. Because the window is taken from the bars *preceding* the signal bar, the breakout candle itself never contaminates the level it is being measured against.

2. The Momentum Filter (the power bar)

A close beyond the shelf is necessary but not sufficient. The signal bar must also pass two power-bar tests that confirm the move held into the close rather than wicking back:

- **Body strength** — the absolute body size (`|close - open|`) must be at least `BodyAtrMult × ATR` . This rejects narrow, hesitant candles that happen to poke the level.
- **Close position** — the close must finish in the favourable end of the bar's own range. For a long, the close position `(close - low) / (high - low)` must be \geq `ClosePct` ; for a short it must be \leq `1 - ClosePct` . A value near 1.0 means price closed right at the extreme, with little or no rejection wick against the move.

3. Entry Rules

- **Long thrust** — the signal bar closes *above* the prior range high, has a strong body, and closes in the upper portion of its range. Entry is sent at the current **Ask**.
- **Short thrust** — the signal bar closes *below* the prior range low, has a strong body, and closes in the lower portion of its range. Entry is sent at the current **Bid**.

Worked long example

Suppose the 20-bar shelf high is `1.27400` and ATR is `0.00080` . A signal bar opens at `1.27380` and closes at `1.27460` with a high of `1.27465` and low of `1.27360` . Body = `0.00080` \geq `0.70 × 0.00080 = 0.00056` ✓. Close position = $(1.27460 - 1.27360) / (1.27465 - 1.27360) \approx 0.95 \geq 0.66$ ✓. Close `1.27460` $>$ shelf `1.27400` ✓ — a long thrust is triggered.

4. Exit Rules — Stop Loss & Take Profit

Risk is fixed at entry using ATR multiples, so stop and target distances automatically widen in volatile conditions and tighten in quiet ones:

- **Long:** Stop Loss = $\text{entry} - \text{SlAtrMult} \times \text{ATR}$, Take Profit = $\text{entry} + \text{TpAtrMult} \times \text{ATR}$
- **Short:** Stop Loss = $\text{entry} + \text{SlAtrMult} \times \text{ATR}$, Take Profit = $\text{entry} - \text{TpAtrMult} \times \text{ATR}$

With the defaults ($\text{SlAtrMult} = 1.50$, $\text{TpAtrMult} = 2.50$) every trade targets roughly a **1 : 1.67 reward-to-risk ratio**. The position then runs hands-off until either the stop or the target is hit by the broker.

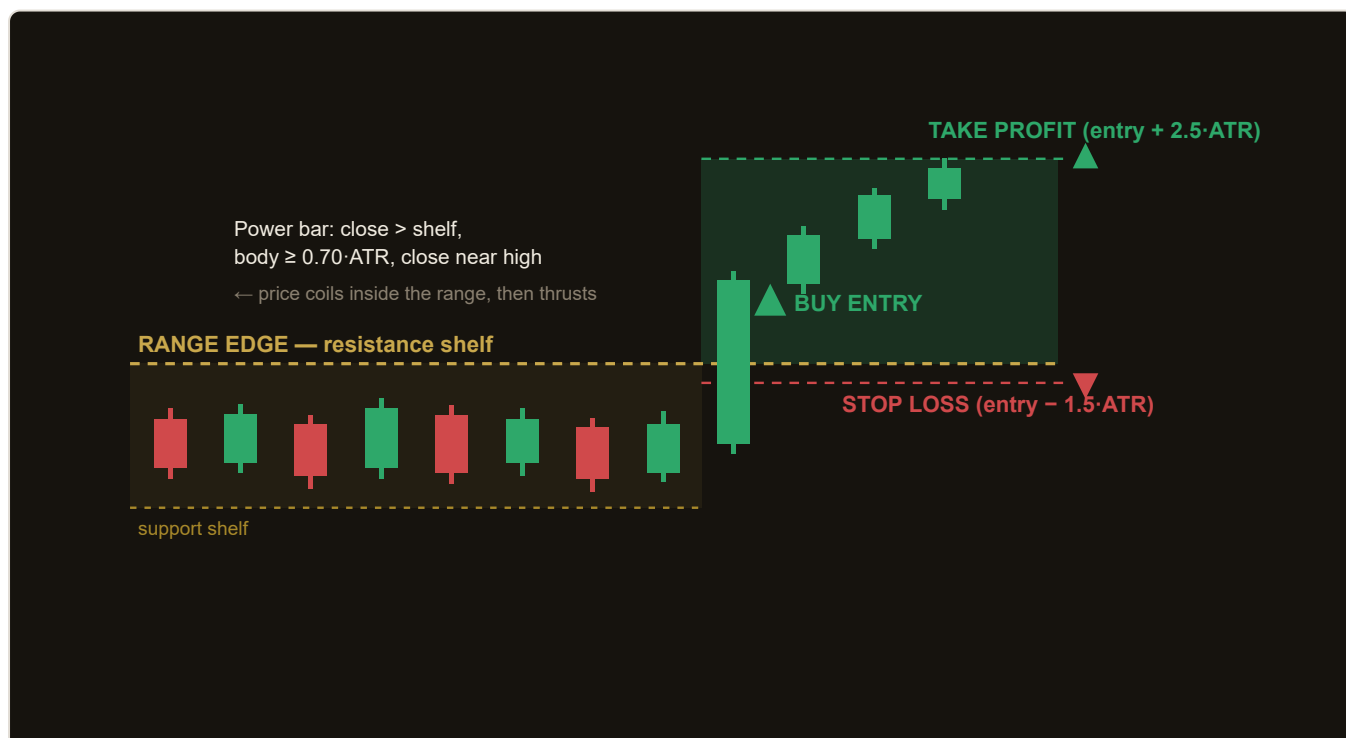
5. Position Management

The EA holds **one position per magic number at a time**. While a trade is open, no new breakout signal is acted upon — the strategy waits for the current position to close on its stop or target before it will look for the next thrust. This keeps exposure controlled and avoids stacking correlated entries during a single directional move.

Bar-close logic: Signals are evaluated only once per completed bar. The EA tracks the open time of the forming candle and acts when a fresh bar opens, using the bar that just closed as the signal bar. Intraday price wiggles never trigger or cancel a setup.

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.



Parameters

Parameter	Default	Description
RangePeriod	20	Lookback that defines the resistance/support shelf to break — the number of completed bars before the signal bar used to find the highest high / lowest low. Range 6–60, step 2.
AtrPeriod	14	ATR length used both for the power-bar body test and for stop/target sizing. Range 7–30, step 1.
BodyAtrMult	0.70	Minimum body size of the breakout bar, expressed in ATR multiples — the core momentum gate. Higher values demand more decisive thrusts. Range 0.30–1.50, step 0.05.
ClosePct	0.66	How close to the bar extreme the close must sit (1.0 = exactly at the high/low). Higher values reject candles that wicked back against the move. Range 0.50–0.95, step 0.05.
SlAtrMult	1.50	Protective stop distance from entry, in ATR multiples. Range 0.50–4.00, step 0.10.
TpAtrMult	2.50	Profit target distance from entry, in ATR multiples. Range 0.50–6.00, step 0.10.
Lots	0.10	Fixed trade size in lots for each position. Range 0.01–1.00, step 0.01.
Magic	5210	Magic number identifying this EA's trades, so it manages only its own positions (one open at a time).

Recommended Settings

The defaults shipped with the EA are a sensible starting point for an active FX major on an intraday timeframe. Treat them as a baseline to optimise against your own broker's spread and the instrument you trade.

- **Symbol:** An active FX major with tight spreads, e.g. **GBPUSD** or **EURUSD**.
- **Timeframe: M15** — enough structure for clean shelves, frequent enough for regular setups.
- **Range / ATR:** `RangePeriod = 20` , `AtrPeriod = 14` — a fresh shelf with a standard volatility read.
- **Momentum gates:** `BodyAtrMult = 0.70` , `ClosePct = 0.66` — filters out weak edge-pokes without being so strict that genuine breaks are missed.
- **Risk:** `SlAtrMult = 1.50` , `TpAtrMult = 2.50` for an asymmetric reward-to-risk profile (~1 : 1.67).

Tuning tip: If you see too many fake breakouts, raise `BodyAtrMult` and/or `ClosePct` to demand more conviction from the breakout bar. If signals are too rare, lower them slightly or shorten `RangePeriod` so shelves form sooner. Always re-test on out-of-sample data after any change.

Optimisation caution: Over-fitting the parameters to historical data can produce backtests that look excellent yet fail forward. Validate any tuned set on data the optimiser never saw, and forward-test on a demo account before risking real capital.

How to Install on MetaTrader 5

- 1 Copy `RangeEdgeMomentumThrust.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

Before going live: Run the EA in the MT5 Strategy Tester and on a demo account first. Confirm it places trades, that stops and targets appear as expected, and that the magic number does not clash with any other EA running on the same account.

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.