Algobot
Maximize Your Profits

Range Weighted Value Reversion

Expert Advisor Documentation

PLATFORM	TYPE	TIMEFRAME	WEBSITE
MetaTrader 5 (MT5)	Mean Reversion	H1 (flexible)	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

Range Weighted Value Reversion is a mean-reversion Expert Advisor that fades price back toward a novel *"acceptance value"* line built entirely from raw bar geometry (OHLC) — it uses no library indicators of any kind. Every quantity it needs, including the Average True Range (ATR), is computed manually from the true ranges of closed bars.

The core insight is about *how the fair-value anchor is weighted*. Conventional anchors — a Simple Moving Average, EMA, VWAP, or median — treat every bar equally, so they are dragged around by the very wide "excursion" bars that represent price *leaving* value. Those are exactly the moves a reversion trader wants to fade, yet a standard average chases them. Range Weighted Value Reversion instead weights each bar by how *quiet* it was: a tight, low-range bar (price being accepted) counts near full weight, while a wide, climactic bar (price travelling) is pushed toward zero weight. The resulting line marks where the market has actually been *trading* — a cleaner centre of gravity to revert to.

The EA only fades inside a **balance regime**. If the least-squares drift of closes across the window is too large, the market is trending rather than ranging, and no trade is taken. When price is instead stretched a configurable number of ATRs away from the acceptance value *and* the last closed bar prints a turn back toward it, the strategy trades the snap-back, targeting the value line itself.

> **What makes it different:** the acceptance value is a *range-weighted* centre of gravity. Each bar's weight is `avgRange² / (range² + avgRange²)`, so calm bars anchor the line and violent bars barely move it. The line therefore tracks the price the market has *accepted*, not the average of every spike.

How It Works

1. The Range-Weighted Acceptance Value

Over the last `ValuePeriod` closed bars, the EA first measures the average bar range `avgRange` (mean of High − Low). Each bar then receives a weight that shrinks as its own range grows:

```
weight = avgRange² / (range² + avgRange²)
```

A bar whose range equals the average receives a weight of exactly 0.5; a much tighter bar approaches 1.0, and a much wider bar approaches 0.0. The acceptance value is the weighted mean of each bar's typical price `(High + Low + Close) / 3`:

```
value = Σ( weight × typicalPrice ) / Σ( weight )
```

Because wide excursion bars are heavily discounted, the line settles on the price zone where trading actually concentrated — the reversion target for both long and short setups.

2. The Balance Regime Gate

In a single pass over the same window, the EA also fits a least-squares regression line through the closes and takes its `slope` (close change per bar). The total drift across the window is:

```
windowDrift = |slope| × (ValuePeriod − 1)
```

This drift is compared to the current ATR. If `windowDrift > FlatDriftAtr × ATR`, the window is trending and **no trade is considered** — reversion needs balance, not a directional run. Only a sufficiently flat acceptance line opens the door to a fade.

3. Entry Conditions

The deviation of the most recently closed bar from the value line is `deviation = lastClose − value`, and the arming threshold is `trigger = DeviationAtr × ATR`. A trade also requires a confirming *turn* bar — the last closed bar must reverse back toward value.

- **Fade Long (Buy):** price stretched *below* value (`deviation ≤ -trigger`) **and** a bullish turn bar (`close > open` and `close > prior close`). Entry at the Ask.
- **Fade Short (Sell):** price stretched *above* value (`deviation ≥ +trigger`) **and** a bearish turn bar (`close < open` and `close < prior close`). Entry at the Bid.

4. Exit Logic — Stop Loss & Take Profit

Both exits are set on the order at entry; there is no active trade management afterwards. The stop is ATR-based, and the take-profit is the acceptance-value line itself — the reversion thesis expressed directly as a target.

- **Take Profit:** the acceptance value line (`tp = value`). The trade closes when price reverts to where the market has been trading.
- **Stop Loss (long):** `entry - StopAtr × ATR`.
- **Stop Loss (short):** `entry + StopAtr × ATR`.

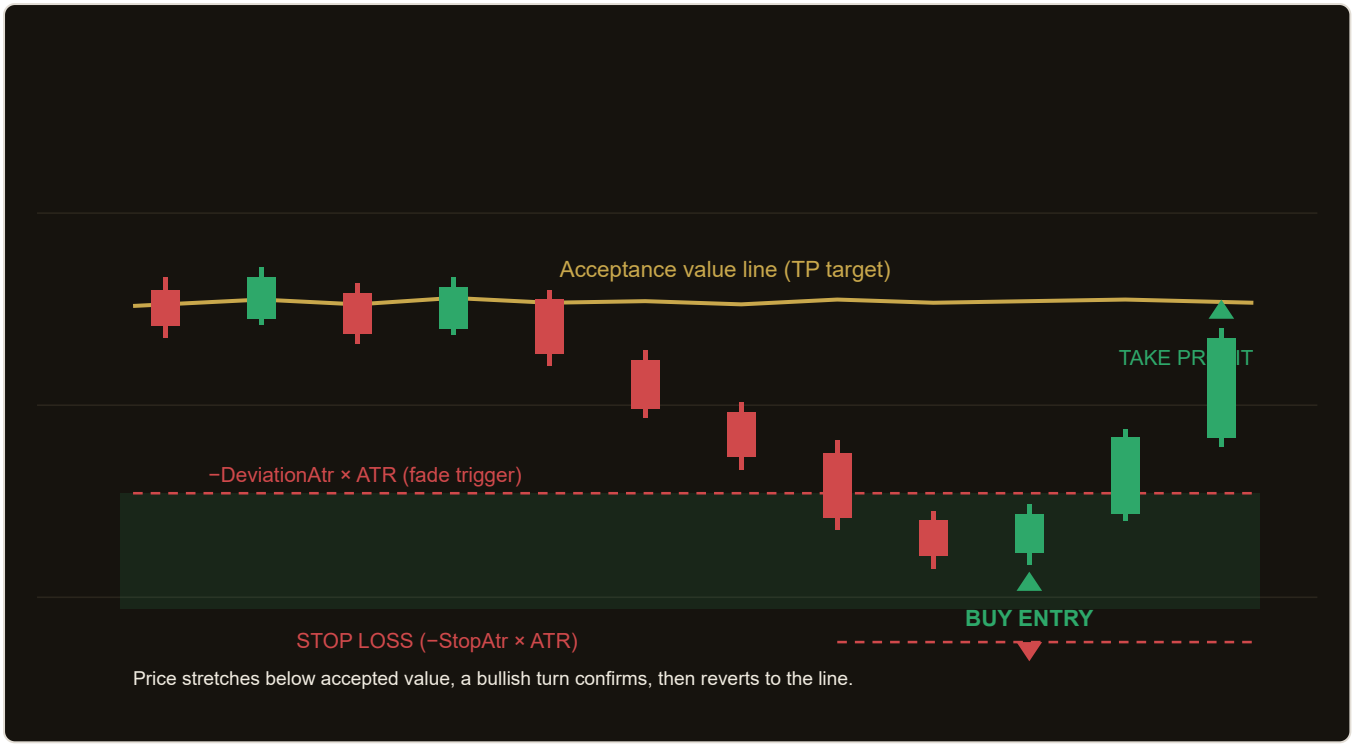
Each order is only sent if the geometry is valid — the target must sit on the profitable side of entry and the stop on the protective side — so degenerate setups are silently skipped.

5. Execution Model

- **One evaluation per closed bar:** logic runs only when a new bar opens (the still-forming bar at shift 0 is ignored for signals). This avoids intrabar repainting and repeated triggering.
- **One position at a time:** while a position with this EA's magic number is open, no new orders are placed — the SL and TP manage the full lifecycle.
- **Warm-up guard:** the EA waits until at least `max(ValuePeriod + 2, AtrPeriod + 2)` bars are available before trading.
- **Self-contained maths:** ATR, the weighted value line, and the regression slope are all computed by hand from bar data — no indicator handles are created.

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

The gold line is the range-weighted acceptance value, kept nearly flat by the balance-regime gate. Price sells off — note the wide excursion candle, which is heavily down-weighted so it barely tugs the value line. Once the close is stretched more than `DeviationAtr × ATR` below value (into the shaded zone) and the next bar closes as a bullish turn, the EA buys the snap-back. The stop sits `StopAtr × ATR` below entry; the take-profit is the acceptance line itself.

Parameters

Parameter	Default	Description
ValuePeriod	`30`	Lookback window (bars) for the range-weighted acceptance-value line and its regression slope. Range 10–100, step 5. Larger values give a slower, steadier value line.
AtrPeriod	`14`	ATR period used to scale both the deviation trigger and the stop distance. Range 5–50, step 1. Computed manually as a simple mean of true ranges.
DeviationAtr	`2.0`	How many ATRs price must be stretched from the value line to arm a fade. Range 0.5–5.0, step 0.25. Higher values demand a larger stretch and trade less often.
FlatDriftAtr	`1.5`	Maximum window drift (in ATRs) that still counts as “balance” — the ranging gate. Range 0.2–5.0, step 0.25. Lower values insist on a flatter, more range-bound market.
StopAtr	`1.5`	Protective stop distance beyond entry, in ATRs. Range 0.5–5.0, step 0.25. The take-profit is always the value line, so this also shapes the risk/reward.
Lots	`0.10`	Trade volume in lots. Range 0.01–1.0, step 0.05. Size to your account and risk tolerance.
Magic	`8143`	Magic number identifying this EA's positions. Keep it unique per chart so the one-position-at-a-time rule and exit management stay isolated.

Recommended Settings

Range Weighted Value Reversion is designed for markets that spend meaningful time in balance. It tends to perform best on liquid, range-prone instruments and on timeframes where noise is filtered but setups still occur regularly.

- **Symbols:** major and range-friendly FX pairs (e.g. EURUSD, EURGBP, USDCHF). Avoid strongly trending or thin instruments where the balance gate rarely opens.
- **Timeframe:** H1 is a sensible starting point; M30–H4 also work. Lower timeframes generate more signals but more noise.
- **Deviation vs. gate:** a wider `DeviationAtr` (2.5–3.0) with a tighter `FlatDriftAtr` (1.0–1.5) yields fewer but higher-quality fades.
- **Risk:** keep `Lots` conservative and always validate on a demo account and in the Strategy Tester first.

Tip: because the take-profit is fixed at the value line, the effective reward shrinks as your stretch requirement grows and grows as your `StopAtr` tightens. Tune `DeviationAtr` and `StopAtr` together and review the resulting reward-to-risk in the tester before going live.

How to Install on MetaTrader 5

1. Copy `RangeWeightedValueReversion.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 `RangeWeightedValueReversion.ex5` in the MT5 Strategy Tester across several months of history on your chosen symbol and timeframe, then forward-test on a demo account. Confirm the balance gate opens often enough to produce trades on your instrument.

Risk Warning

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