Algobot
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VWAPRSI Reversion

Expert Advisor Documentation

PLATFORM	TYPE	TIMEFRAME	WEBSITE
MetaTrader 5 (MT5)	Mean Reversion	M15 / M30	www.algobot.live

Overview

VWAPRSI Reversion is a mean-reversion Expert Advisor that fades statistically stretched price back toward a rolling Volume-Weighted Average Price (VWAP). The core idea is simple: over any given window, VWAP represents the market's volume-weighted "fair value," and price that has travelled an unusual distance away from it tends to be drawn back.

Rather than chasing every excursion, the EA insists on a confluence of three independent conditions before committing to a trade. Price must close beyond a standard-deviation band around VWAP (the stretch), the Relative Strength Index (RSI) must confirm the move is over-extended (the exhaustion gate), and a reversal candle must print in the intended trade direction (the trigger). The take-profit target is VWAP itself — the fair-value magnet — while the stop-loss is sized dynamically from Average True Range (ATR) so that risk adapts to current volatility.

In one sentence: When price is statistically over-stretched away from VWAP, RSI confirms exhaustion, and a reversal candle prints, the EA fades the move back toward fair value with an ATR-sized stop.

How It Works

The strategy evaluates its rules once per newly-closed bar. On each closed bar it recomputes a rolling VWAP and its volatility bands, reads RSI and ATR, then checks whether a complete long or short setup has formed. Only one position per magic number is held at a time — once a trade is open, the broker-side stop-loss and take-profit manage the exit.

The Building Blocks

- **Rolling VWAP** — Over the last `VwapPeriod` bars, the EA computes the volume-weighted average of each bar's typical price `(High + Low + Close) / 3`, using tick volume as the weight. This is the "fair value" the strategy expects price to revert toward. If no volume is available, it falls back to a simple average of typical prices.
- **Standard-deviation bands** — The standard deviation of closing prices around VWAP defines an upper and lower band at `VWAP ± BandMult × StdDev`. A close beyond a band marks a statistically unusual stretch.
- **RSI (exhaustion gate)** — RSI over `RsiPeriod` bars must agree that the move is exhausted: below `RsiOversold` for longs, or above the mirrored overbought level (`100 - RsiOversold`) for shorts.
- **Reversal candle (trigger)** — The just-closed bar must close in the direction of the intended trade: a bullish candle (`Close > Open`) for a long, a bearish candle (`Close < Open`) for a short.
- **ATR (stop sizing)** — The Average True Range over `AtrPeriod` bars sets the stop distance, so the stop widens in volatile conditions and tightens in quiet ones.

Entry Logic

A **long** position is opened when *all three* of the following are true on the just-closed bar:

- The close is **below the lower band** (`Close < VWAP - BandMult × StdDev`) — price is over-stretched to the downside.
- RSI is **below** **`RsiOversold`** — momentum confirms oversold exhaustion.
- The bar is a **bullish reversal candle** (`Close > Open`) — buyers are stepping back in.

A **short** position is the mirror image:

- The close is **above the upper band** (`Close > VWAP + BandMult × StdDev`).
- RSI is **above the overbought level** (`100 - RsiOversold`).
- The bar is a **bearish reversal candle** (`Close < Open`).

Exit Logic — Stop Loss & Take Profit

Both exits are placed as broker-side orders the moment the trade is sent, so no further management is required:

- **Take Profit = VWAP.** The target is the fair-value line itself — the trade aims to capture the snap-back from the band to the mean.
- **Stop Loss = ATR-based.** For longs, `SL = Entry − AtrSlMult × ATR`; for shorts, `SL = Entry + AtrSlMult × ATR`. The stop sits beyond the stretch, scaled to live volatility.

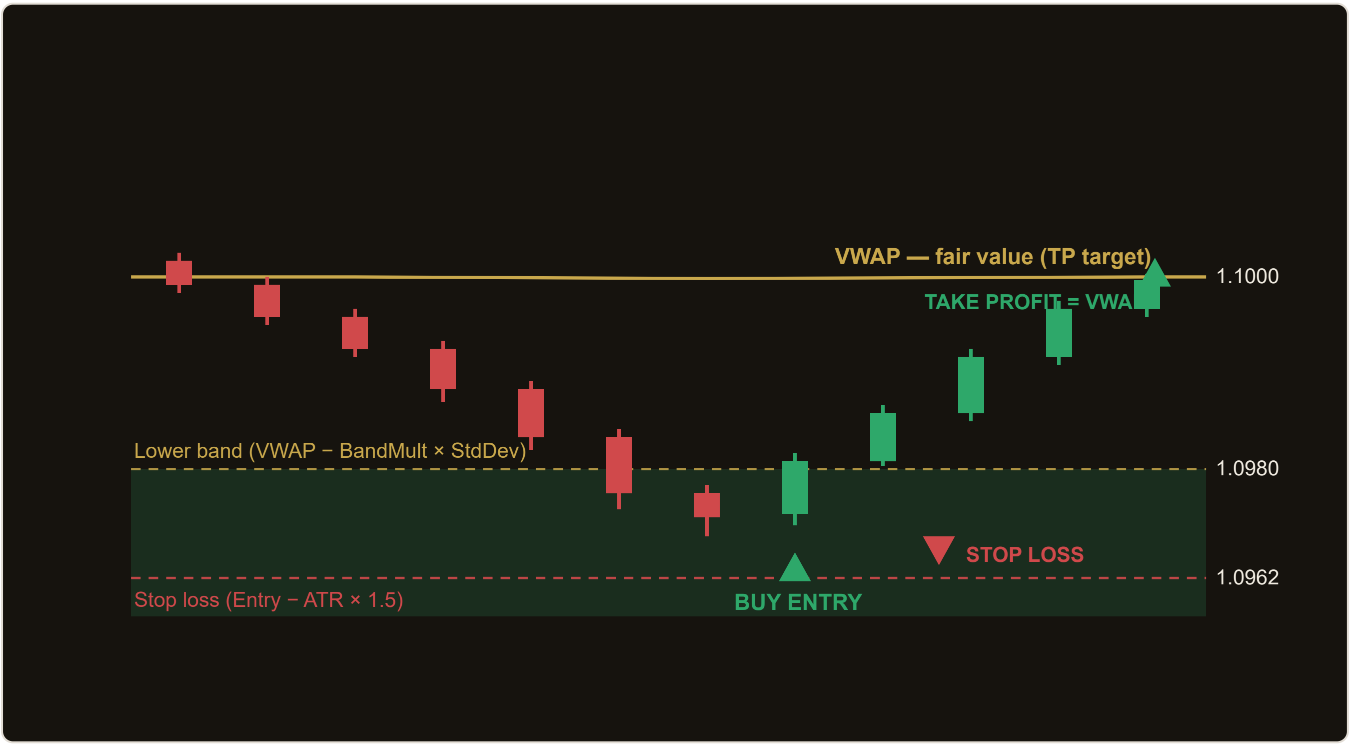
> **Sanity guards:** Before sending, the EA verifies the geometry is valid — for a long, the target must be above entry and the stop below it (and vice-versa for a short). If the relationship is inverted, or ATR/StdDev is zero, the signal is skipped. Stops and targets are normalized to the symbol's digit precision.

Worked example (long)

Suppose VWAP sits at 1.10000 with a lower band at 1.09800. A bar closes at 1.09780 (below the band), RSI reads 27 (below the 30 oversold level), and the candle is bullish. ATR is 0.00120 and `AtrSlMult` is 1.5. The EA buys at the Ask, sets the take-profit at VWAP (1.10000) and the stop at `Entry − 1.5 × 0.00120 = Entry − 0.00180`. The trade targets the reversion back to fair value while risking roughly one and a half ATRs.

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.

Price sells off and closes **below the lower standard-deviation band** while RSI dips into oversold territory. The next bar prints a **bullish reversal candle**, completing the three-part long setup, and the EA enters at the

Ask. The stop sits roughly 1.5 ATR below entry; the position then reverts back up to **VWAP**, where the take-profit is filled.

Parameters

Parameter	Default	Description
VwapPeriod	`50`	Lookback window, in bars, for the rolling VWAP and its standard-deviation bands. Range 20–200, step 5. Larger values produce a smoother, slower fair-value line.
BandMult	`2.0`	Standard-deviation multiplier that sets how far the upper/lower bands sit from VWAP. Range 1.0–3.5, step 0.25. Higher values demand a larger stretch before a trade triggers (fewer, more selective signals).
RsiPeriod	`14`	Number of bars used to calculate RSI, the exhaustion gate. Range 5–30, step 1.
RsiOversold	`30`	RSI oversold threshold for long entries. The overbought level for shorts is mirrored automatically as `100 - RsiOversold` (e.g. 70). Range 15–40, step 1.
AtrPeriod	`14`	Number of bars used to calculate ATR, which sizes the stop-loss. Range 5–30, step 1.
AtrSlMult	`1.5`	ATR multiplier for the stop-loss distance. Range 0.5–4.0, step 0.25. Larger values give the trade more room but increase risk per trade.
Lots	`0.10`	Fixed trade volume in lots. Range 0.01–1.0, step 0.05. Size this to your account and risk tolerance.
Magic	`7740`	Magic number used to identify and isolate this EA's positions. Change it to run multiple EAs on the same account without conflict.

Recommended Settings

VWAPRSI Reversion is designed for ranging, mean-reverting conditions where price oscillates around a stable fair value. It is best suited to liquid instruments on intraday timeframes.

- **Timeframe:** M15 or M30. These give enough bars for a meaningful VWAP window while still producing regular setups.
- **Symbols:** Liquid majors such as EUR/USD, GBP/USD, or USD/JPY, and major indices, where VWAP behaves as a reliable magnet.
- **Market regime:** Favour range-bound, sideways sessions. Strong, sustained trends can keep price pinned outside a band — mean reversion underperforms in those conditions.

- **Band selectivity:** Start with `BandMult = 2.0`. Increase toward 2.5–3.0 for fewer but higher-conviction reversion trades; decrease toward 1.5 for more frequent signals.
- **Stop sizing:** Keep `AtrSlMult` in the 1.5–2.5 range. Too tight and normal noise stops you out; too wide and the reward-to-risk versus the VWAP target erodes.

> **Tip:** Because the take-profit is fixed at VWAP, the effective reward-to-risk depends on how far the band stretch is relative to your ATR stop. Before going live, run the Strategy Tester across your chosen symbol and timeframe to confirm the band/stop balance produces a favourable distribution.

> **Trend risk:** This is a counter-trend strategy. During strong directional moves, price can remain beyond a band for an extended period, and the ATR stop may be hit before any reversion occurs. Avoid running it through major news events or in clearly trending regimes.

How to Install on MetaTrader 5

1. Copy `VWAPRSIReversion.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

> 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.