

Vwap Deviation Reversion

Expert Advisor Documentation

PLATFORM	TYPE	TIMEFRAME	WEBSITE
MetaTrader 5 (MT5)	Mean Reversion (VWAP Bands)	M5 – M15	www.algotbot.live

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Overview

Vwap Deviation Reversion is a mean-reversion Expert Advisor built around the single most popular institutional day-trading reference line: **VWAP** (Volume Weighted Average Price). Large desks benchmark their fills against VWAP, so price is repeatedly pulled back toward it — stretches far above or below VWAP tend to snap back to the mean. This strategy fades those stretches and targets VWAP itself as the exit.

Because the engine runs one symbol and one timeframe at a time, a true session-anchored VWAP (which needs a daily session reset) is replaced with a **rolling, volume-weighted VWAP** computed over the last N closed bars. Each bar's typical price $(H+L+C)/3$ is weighted by its volume. Around that VWAP the EA builds **deviation bands** from the volume-weighted standard deviation of price about the mean:

$$\begin{aligned} \text{VWAP} &= \frac{\sum(tp \cdot v)}{\sum v} & tp &= \frac{(\text{High} + \text{Low} + \text{Close})}{3} \\ \text{STD} &= \sqrt{\frac{\sum(v \cdot (tp - \text{VWAP})^2)}{\sum v}} \\ \text{Upper} &= \text{VWAP} + k \cdot \text{STD} & \text{Lower} &= \text{VWAP} - k \cdot \text{STD} \end{aligned}$$

The system never blindly fades a band touch — a naked touch can keep trending. Instead it requires three independent conditions to align on a freshly closed bar (over-extension, momentum exhaustion via RSI, and an early reversal candle) before committing to a trade.

How It Works

Bar-Close Processing

The EA acts **once per newly-closed bar** on the chart's timeframe. On each new bar it appends the just-closed bar to a rolling history (capped at 600 bars) and recomputes the VWAP, the deviation bands, RSI, and ATR from that closed history. Signals are therefore evaluated only on confirmed, finished candles — never on the still-forming bar.

Entry Logic

Two mirror-image setups are evaluated. Each needs **all three** of its conditions on the just-closed signal bar:

LONG (FADE AN OVER-STRETCH BELOW VWAP)

- The bar **closes below the Lower band** — price is over-stretched to the downside.
- **RSI < RsiOversold** — downside momentum is exhausted.
- The bar is **bullish** (close > open) — the first visible sign of the snap-back.

When all three align, the EA buys at the Ask, sets the take-profit at VWAP (the mean), and places the stop one ATR below the entry.

SHORT (FADE AN OVER-STRETCH ABOVE VWAP)

- The bar **closes above the Upper band** — price is over-stretched to the upside.
- **RSI > RsiOverbought** — upside momentum is exhausted.
- The bar is **bearish** (close < open) — the first sign of the roll-over.

When all three align, the EA sells at the Bid, sets the take-profit at VWAP, and places the stop one ATR above the entry.

Exit Logic — Stop Loss & Take Profit

Every trade is fully self-managed by two structural levels attached at entry:

- **Take Profit = VWAP.** The mean is a genuine structural magnet — the level price is statistically being pulled toward — rather than an arbitrary fixed distance.
- **Stop Loss = entry ± (AtrStopMult × ATR).** The stop adapts to current volatility through ATR, sitting one (configurable) ATR beyond the entry on the wrong side.

There is no trailing logic and no manual close: each position runs until its VWAP target or its ATR stop is hit.

Risk & Trade Filters

- **Minimum reward : risk.** Before sending, the EA measures reward (distance to VWAP) against risk (the ATR stop distance). If $\text{reward} / \text{risk} < \text{MinRewardRisk}$ the setup is rejected — this skips trades where price has already drifted too close to VWAP to justify the stop.
- **Spread guard.** New entries are skipped whenever the current spread (in points) exceeds `MaxSpreadPoints`.
- **One position per magic.** Only a single open position is held at a time per magic number, so the structural stop and mean target manage every exit cleanly.

Self-scaling by design. The bands adapt to volatility through the standard deviation, the stop adapts through ATR, and the take-profit is the live VWAP itself. As market conditions change, every level moves with them — no fixed pip targets are used anywhere.

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
VwapPeriod	30	Rolling window (bars) used for the volume-weighted VWAP and its deviation bands. Range 10–120, step 5.
BandMult	2.0	Band width as a multiple of the volume-weighted standard deviation (k in $VWAP \pm k \cdot STD$). Range 1.0–4.0, step 0.1.
RsiPeriod	14	RSI lookback used to confirm momentum exhaustion at the band. Range 5–30, step 1.
RsiOversold	35	RSI must be at or below this value to allow a LONG fade. Range 10–45, step 1.
RsiOverbought	65	RSI must be at or above this value to allow a SHORT fade. Range 55–90, step 1.
AtrPeriod	14	ATR lookback used to size the volatility-adaptive stop. Range 5–30, step 1.
AtrStopMult	1.5	Stop distance as a multiple of ATR, placed beyond the entry. Range 0.5–4.0, step 0.1.
MinRewardRisk	0.8	Reject setups whose VWAP target is closer than this multiple of the ATR stop distance. Range 0.3–3.0, step 0.1.
MaxSpreadPoints	80	Skip new entries when the current spread (points) is wider than this. Range 5–300, step 5.
Lots	0.10	Order volume in lots for each trade. Range 0.01–1.0, step 0.05.
Magic	7731	Magic number identifying this EA's positions. Range 0–9,999,999, step 1.

Recommended Settings

The natural home of VWAP reversion day-trading is a liquid instrument with meaningful volume during the session. The defaults are tuned for this environment:

- **Symbols:** a liquid FX major or an index such as **EURUSD** or **US500**.
- **Timeframe:** **M5 – M15** — the intraday horizon where VWAP reversion is most reliable.
- **Bands:** start with the default `VwapPeriod = 30` and `BandMult = 2.0`; widen `BandMult` to trade only the most extreme stretches, narrow it for more frequent (lower-quality) signals.
- **Confirmation:** the default `RsiOversold = 35` / `RsiOverbought = 65` pair keeps entries selective; loosen them toward 30/70+ for stricter exhaustion.

- **Risk:** keep `AtrStopMult = 1.5` and `MinRewardRisk = 0.8` as a balanced starting point, and set `Lots` to match your account size and risk tolerance.

Example setup — EURUSD M15

Over the last 30 closed bars the rolling VWAP sits at 1.08500 with a band at 1.08300. A bar closes at 1.08260 (below the Lower band), RSI prints 31 (below 35), and the candle is bullish. The EA buys at the Ask, targets VWAP at 1.08500, and places the stop $1.5 \times \text{ATR}$ below the entry — provided the reward-to-risk ratio clears 0.8 and the spread is within 80 points.

Tip — match the spread filter to the symbol. `MaxSpreadPoints` is measured in points, so an index and an FX pair quote on very different scales. Check the typical spread of your instrument and timeframe and adjust the filter so legitimate setups are not silently skipped during quiet hours.

How to Install on MetaTrader 5

- 1 Copy `VwapDeviationReversion.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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