

Williams Percent Pullback

Expert Advisor Documentation

PLATFORM

MetaTrader 5 (MT5)

TYPE

Trend-Following Pullback

TIMEFRAME

H1 (adaptable)

WEBSITE

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

Williams Percent Pullback is a single-timeframe, rule-based Expert Advisor that follows the prevailing trend but enters on pullbacks rather than chasing extended moves. A fast/slow EMA pair establishes the trend direction, and the Williams %R oscillator times the entry: the EA waits for momentum to stretch into the counter-trend extreme (the pullback) and then *recover* back out of it — the moment price is most likely to resume with the trend.

Because entries are trend-aligned and taken at a temporary counter-move, the strategy aims to buy dips inside uptrends and sell rallies inside downtrends at a more favourable price. Risk is controlled with an ATR-based stop-loss and take-profit, a spread filter that skips abnormally wide markets, and an automatic move-to-breakeven once a trade travels a configurable ATR distance in your favour. The EA holds **one position at a time**.

Core idea: Trend + pullback + recovery. The trend tells you which direction to trade; the Williams %R recovery tells you *when* the pullback is likely finished and the trend is resuming.

How It Works

Trend Filter (EMA pair)

Two exponential moving averages of the close define the regime. The EA reads indicator values on the **last closed bar** (never the still-forming bar) to avoid acting on incomplete data.

- **Uptrend:** `FastEMA > SlowEMA` and `close > SlowEMA`
- **Downtrend:** `FastEMA < SlowEMA` and `close < SlowEMA`

Entry Trigger (Williams %R recovery)

Williams %R oscillates between -100 (extreme low) and 0 (extreme high). The `WprThreshold` input defines two symmetric levels:

- **Oversold** = `-(100 - WprThreshold)` — e.g. a threshold of 20 gives -80
- **Overbought** = `-WprThreshold` — e.g. a threshold of 20 gives -20

The signal is a *cross* back out of the extreme, confirmed with the current and previous closed-bar %R values:

- **Long signal:** uptrend and %R was at/below oversold on the prior bar and crosses back **up** through it on the latest closed bar (`wprPrev ≤ oversold && wprNow > oversold`).
- **Short signal:** downtrend and %R was at/above overbought on the prior bar and crosses back **down** through it on the latest closed bar (`wprPrev ≥ overbought && wprNow < overbought`).

Order Placement

On a valid long signal the EA buys at the Ask; on a short signal it sells at the Bid. Stops and targets are derived from the ATR of the just-closed bar:

```
Long:  SL = entry - ATR × AtrSlMult    TP = entry + ATR × AtrTpMult
Short: SL = entry + ATR × AtrSlMult    TP = entry - ATR × AtrTpMult
```

With the defaults (`AtrSlMult = 1.5`, `AtrTpMult = 2.5`) each trade targets roughly a **1 : 1.67 reward-to-risk** ratio, measured in live ATR volatility.

Trade Management (breakeven lock)

On *every tick* — before the new-bar entry logic runs — the EA checks open positions. Once price has advanced `BreakevenAtr × ATR` in your favour, the stop-loss is moved to the entry price, removing downside risk on that trade while the take-profit stays in place.

Guards & Filters

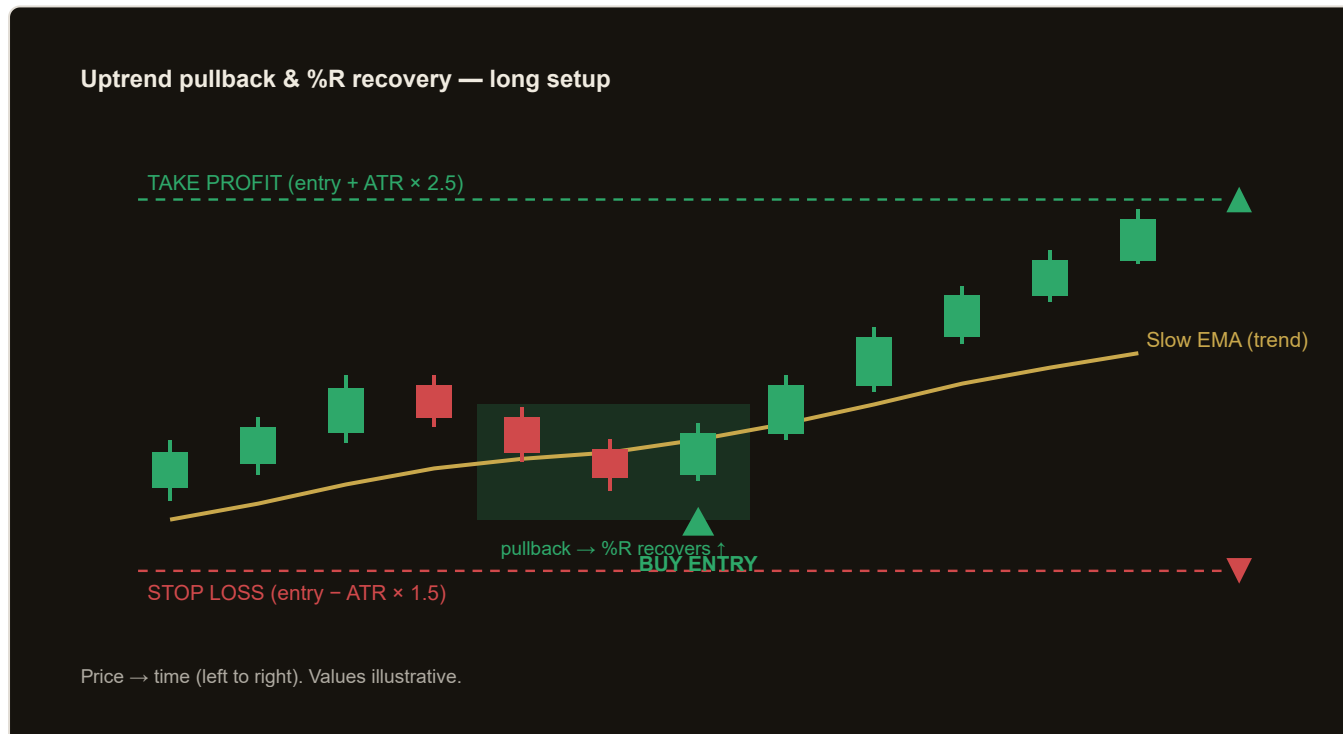
- **One position at a time:** no new order opens while a position with the EA's magic number exists.
- **Spread filter:** if the current spread exceeds `MaxSpreadPts` (points), the signal is skipped.
- **New-bar gating:** entry decisions are made only once per newly-closed bar; only trade management runs intra-bar.
- **Warm-up:** the EA waits until enough history exists for the slowest indicator (`max(SlowEma, AtrPeriod, WprPeriod) + 2` bars) before evaluating signals.

Example — long entry

EUR/USD is in an uptrend (21-EMA above 55-EMA, price above the 55-EMA). Price dips and Williams %R falls to -85 (below the -80 oversold line). On the next closed bar %R recovers to -72 , crossing back up through -80 . The EA buys at the Ask, sets SL $1.5 \times \text{ATR}$ below and TP $2.5 \times \text{ATR}$ above, and later slides the stop to breakeven once price gains $1.0 \times \text{ATR}$.

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
FastEmaPeriod	21	Fast EMA period defining the near-term trend (range 5–80, step 1).
SlowEmaPeriod	55	Slow EMA period; the trend baseline that price must be on the correct side of (range 20–200, step 5).
WprPeriod	14	Williams %R look-back period for the pullback oscillator (range 5–40, step 1).
WprThreshold	20	Sets the oversold level $-(100-T)$ and overbought level $-T$ (range 10–35, step 1).
AtrPeriod	14	ATR period used to size the stop-loss, take-profit, and breakeven trigger (range 5–40, step 1).
AtrSIMult	1.5	Stop-loss distance as a multiple of ATR (range 0.5–4.0, step 0.1).
AtrTpMult	2.5	Take-profit distance as a multiple of ATR (range 1.0–6.0, step 0.1).
BreakevenAtr	1.0	Favourable travel (in ATR) required before the stop is moved to breakeven (range 0.2–3.0, step 0.1).
MaxSpreadPts	40	Maximum allowable spread in points; wider markets skip the signal (range 5–200, step 5).
Lots	0.10	Fixed order volume in lots (range 0.01–1.0, step 0.01).
Magic	20250708	Magic number identifying this EA's positions so it manages only its own trades.

Recommended Settings

The defaults are a balanced starting point. Tune to the instrument's volatility and your risk tolerance, then validate in the MT5 Strategy Tester before live use.

- **Timeframe:** H1 is a sensible default. Lower timeframes generate more signals but more noise and pay more spread; higher timeframes give fewer, cleaner setups.
- **Instruments:** trending, liquid markets such as major FX pairs (EUR/USD, GBP/USD) or gold. Avoid tightly range-bound symbols where the EMA trend filter rarely aligns.
- **Threshold:** a higher `WprThreshold` (e.g. 25–30) demands a deeper pullback and produces fewer, more selective entries; a lower value trades more often.
- **Risk multiples:** keep `AtrTpMult > AtrSIMult` for a positive reward-to-risk profile. Widen `AtrSIMult` on choppy symbols to avoid premature stop-outs.

- **Spread:** set `MaxSpreadPts` to reflect your broker's typical spread on the chosen symbol so the filter blocks only genuine spikes.

Tip: Because stops and targets scale with live ATR, the EA adapts position risk to current volatility automatically — you rarely need to re-tune the multiples when volatility regimes shift.

How to Install on MetaTrader 5

- 1 Copy `WilliamsPercentPullback.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

Note: Confirm the **Algo Trading** button is green and a smiley face appears in the top-right of the chart. Always run a backtest in the Strategy Tester and, ideally, a period on a demo account before committing real capital.

Risk Warning

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