

Percent Range Trend Pullback

Expert Advisor Documentation

PLATFORM

MetaTrader 5 (MT5)

TYPE

Trend-Following Pullback

TIMEFRAME

M15 – H1

WEBSITE

www.algotbot.live

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Overview

Percent Range Trend Pullback is a trend-following Expert Advisor that buys dips inside an uptrend and sells rallies inside a downtrend. It is deliberately *not* a counter-trend fade — it only ever trades in the direction the trend is already pointing, entering when a temporary pullback shows signs of exhausting and the move is about to resume.

Two independent engines must agree on the same closed bar before a trade is taken:

- **Direction — a slope-filtered EMA.** Price must be on the correct side of the trend EMA *and* the EMA itself must actually be sloping the right way (rising for longs, falling for shorts). Requiring a real slope — not merely price on one side of a flat average — screens out the choppy, sideways regimes where pullback entries get whipsawed.
- **Timing — the Williams Percent Range (%R) oscillator.** %R measures where the current close sits inside the recent high/low range. A dip that drives %R into oversold territory is treated as a temporary pullback; when %R then curls back up through the line, buyers have resumed control at a discount. The short side is the exact mirror.

Every trade is protected by ATR-based risk management: a stop set a multiple of ATR beyond entry, a take-profit at a fixed reward-to-risk multiple, and an ATR trailing stop that ratchets in the trade's favour once in profit and never loosens. Because all sizing is ATR-relative, the strategy self-scales to any symbol or

timeframe. Only one position per Magic number is open at a time, and a spread gate blocks entries when execution costs are elevated.

Core idea: Trends spend most of their life in pullback-and-resume cycles. Entering only *with* a sloping EMA and only *when* %R confirms the dip is ending buys strength on weakness at favourable risk — while the ATR trail turns the occasional sustained run into an outsized winner that pays for the small, capped losers.

How It Works

The Trend Filter (direction)

On each closed bar the EMA is evaluated together with its slope over a configurable lookback. Both conditions must hold:

```
uptrend   : Close > EMA(TrendEmaPeriod) AND EMA now > EMA (EmaSlopeLookback bars ago)
downtrend : Close < EMA(TrendEmaPeriod) AND EMA now < EMA (EmaSlopeLookback bars ago)
```

The slope gate is the primary false-signal filter. In a flat market price may sit above or below the EMA repeatedly, but the EMA will not be meaningfully sloping — so no trades are taken.

The %R Trigger (timing)

Williams %R is defined as $-100 \times (\text{HighestHigh}_N - \text{Close}) / (\text{HighestHigh}_N - \text{LowestLow}_N)$, bounded in $[-100, 0]$. Two symmetric threshold lines are derived from a single `PullbackDepth` knob:

```
OversoldLine   = -(100 - PullbackDepth) // e.g. depth 20 -> -80
OverboughtLine = -PullbackDepth         // e.g. depth 20 -> -20
```

The trigger is a genuine *crossover* of the line — not a mere level touch — plus a same-bar momentum confirmation (the signal candle must close in the trade's direction):

```
LONG  : prev %R < OversoldLine AND %R >= OversoldLine AND Close > Open
SHORT : prev %R > OverboughtLine AND %R <= OverboughtLine AND Close < Open
```

Demanding a real cross of the line together with a directional close avoids firing on a single deep wick that immediately reverses.

Entry

- **Long:** uptrend confirmed *and* %R curls up out of oversold on a bullish close → buy at Ask.
- **Short:** downtrend confirmed *and* %R curls down out of overbought on a bearish close → sell at Bid.

Before any entry, a spread gate rejects the signal if the current spread exceeds `MaxSpreadPoints`, and no new position is opened while an existing one for the same Magic is still being managed.

Exit & Trade Management (ATR-based)

- **Stop loss:** `StopAtrMult × ATR` beyond entry — below for longs, above for shorts.
- **Take profit:** `RewardRatio × stop-distance`, a fixed reward-to-risk multiple.
- **Trailing stop:** once in profit, an ATR trailing stop set `TrailAtrMult × ATR` from price ratchets the stop in the trade's favour and *never* loosens it — locking gains as the trend runs while still leaving room for the target to be hit.

One trade at a time. Only a single position per Magic number is permitted. While a trade is open the EA does nothing but manage the trailing stop; fresh entry logic resumes only after the position is closed.

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
TrendEmaPeriod	50	Trend EMA length — the backbone that defines direction. Range 20–200, step 5.
EmaSlopeLookback	3	How many bars back the EMA slope is measured over; the EMA must be rising (longs) or falling (shorts) to trade. Range 1–10, step 1.
WprPeriod	14	Williams %R lookback period. Range 7–40, step 1.
PullbackDepth	20.0	Pullback depth magnitude. Oversold line = $-(100 - \text{depth})$, overbought line = $-\text{depth}$. Range 10.0–35.0, step 1.0.
AtrPeriod	14	ATR period used for stop, target, and trail sizing. Range 7–28, step 1.
StopAtrMult	1.5	Initial stop distance = this multiple of ATR beyond entry. Range 0.5–4.0, step 0.1.
RewardRatio	1.8	Take-profit distance as a multiple of the stop distance (reward : risk). Range 0.8–4.0, step 0.1.
TrailAtrMult	2.0	ATR trailing-stop distance once in profit; ratchets only in the trade's favour. Range 0.5–5.0, step 0.1.
MaxSpreadPoints	30	Skip entries when the current spread (in points) is wider than this. Range 1–200, step 1.
Lots	0.10	Order volume in lots. Range 0.01–1.00, step 0.05.
Magic	4821	Magic number identifying this EA's positions. Range 0–9,999,999, step 1.

Recommended Settings

The strategy is designed for a trend-following / swing style. Its natural playground is a trending major or an index on intermediate timeframes.

- **Symbols:** a trending major such as EURUSD or GBPUSD, or a major stock index.
- **Timeframe:** M15 to H1, where pullback-and-resume cycles are frequent and clean.
- **Trend EMA:** the default `TrendEmaPeriod = 50` with `EmaSlopeLookback = 3` balances responsiveness against noise. Raise the period on higher timeframes for a smoother trend backbone.
- **Pullback depth:** `PullbackDepth = 20` gives the classic $-80 / -20$ %R lines. Increase it (shallower lines) to take more, earlier entries; decrease it (deeper lines) to demand deeper pullbacks and trade less often.

- **Risk:** keep `RewardRatio` ≥ 1.5 so winners outsize the capped losers; the `TrailAtrMult = 2.0` trail lets sustained trends run.

Example — EURUSD M15, default inputs

Price is above a rising EMA(50) (uptrend confirmed). A two-bar dip drives %R below -80 . On the next bar %R crosses back up through -80 and the candle closes higher than it opened → a long is opened at Ask. The stop is placed $1.5 \times \text{ATR}$ below entry; the target sits $1.8 \times$ that risk above. As price advances, a $2.0 \times \text{ATR}$ trailing stop ratchets up behind it, locking in profit while leaving room for the target.

Tip: Because every distance is measured in ATR rather than fixed pips, the same input set transfers across symbols and timeframes without re-tuning stop and target sizes. Adjust `MaxSpreadPoints` to your broker so that valid signals are not rejected on normally-spread instruments.

How to Install on MetaTrader 5

- 1 Copy `PercentRangeTrendPullback.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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