

Detrended Cycle Pullback

Expert Advisor Documentation

PLATFORM

MetaTrader 5 (MT5)

TYPE

Trend-Following Pullback

TIMEFRAME

H1 (adaptable)

WEBSITE

www.algotbot.live

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Overview

Detrended Cycle Pullback is a pro-trend, cycle-timing pullback Expert Advisor built on the **Detrended Price Oscillator (DPO)**. Instead of chasing breakouts, the EA waits for a temporary counter-move (a "dip" in an uptrend or a "rally" in a downtrend) to exhaust itself, then enters in the direction of the dominant trend as the cycle turns back over.

The DPO removes the underlying trend from price by subtracting a horizontally displaced Simple Moving Average from the current close. What remains is a cleaner, quasi-cyclical oscillation that swings above and below zero — deep negative excursions mark cyclical troughs, deep positive excursions mark cyclical peaks. The depth that counts as "deep" is scaled by the **Average True Range (ATR)**, so the trigger adapts automatically to the current volatility regime rather than relying on a fixed price threshold.

A slow **trend EMA** acts as the higher-level regime filter: the EA only takes trades that *resume* the prevailing trend, never fading it outright. Risk is fully ATR-based — stop, target, and trailing distances all scale with volatility. Winners are protected by moving to breakeven after +1R and then trailing by an ATR multiple; only one position per magic number is held at a time.

How It Works

The Detrended Price Oscillator

The DPO isolates the short-term cycle by comparing the current close to an SMA taken from the recent past (displaced by half its length plus one bar):

```
DPO = Close[0] - SMA(DpoPeriod) centered (DpoPeriod / 2 + 1) bars in the past
```

With the default `DpoPeriod = 20`, the displacement is `20 / 2 + 1 = 11` bars. Because the trend component is stripped away, the resulting oscillation swings symmetrically around zero, making cyclical peaks and troughs far easier to identify than on raw price.

The Adaptive Band

An oscillation only counts as a tradable extreme when it exceeds a volatility-scaled band:

```
band = BandAtrMult × ATR(AtrPeriod)
```

A DPO value at or below `-band` is a cyclical trough; a value at or above `+band` is a cyclical peak. Because the band is a multiple of ATR, it widens in fast markets and tightens in quiet ones automatically.

Entry Logic

The EA evaluates signals only once per completed bar, and requires both a trend condition and a confirmed turn in the oscillator:

- **Long entry** — price is **above** the trend EMA (uptrend) **AND** the previous DPO printed a trough at or below `-band` **AND** the current DPO is turning back **up** (`dpoNow > dpoPrev`). The EA buys the cyclical dip at the Ask.
- **Short entry** — price is **below** the trend EMA (downtrend) **AND** the previous DPO printed a peak at or above `+band` **AND** the current DPO is turning back **down** (`dpoNow < dpoPrev`). The EA sells the cyclical rally at the Bid.

Note: the trend EMA filter is what keeps this a *pro-trend* system. The DPO tells the EA *when* the short-term cycle has bottomed or topped; the EMA tells it *which direction* is allowed to be traded. The two must agree before a position is opened.

Exit Logic & Risk Management

Every trade is opened with a fixed, ATR-based stop and target, then actively managed:

- **Initial stop loss** — $SL_{AtrMult} \times ATR$ away from entry.
- **Initial take profit** — $Tp_{AtrMult} \times ATR$ away from entry.
- **Breakeven** — once price advances by $BreakevenR \times R$ (where R is the initial stop distance), the stop is moved to the entry price, eliminating downside risk on the trade.
- **ATR trailing stop** — the stop then trails at $Trail_{AtrMult} \times ATR$ behind price. The trail only ever tightens; it is never loosened and never crosses the current price.

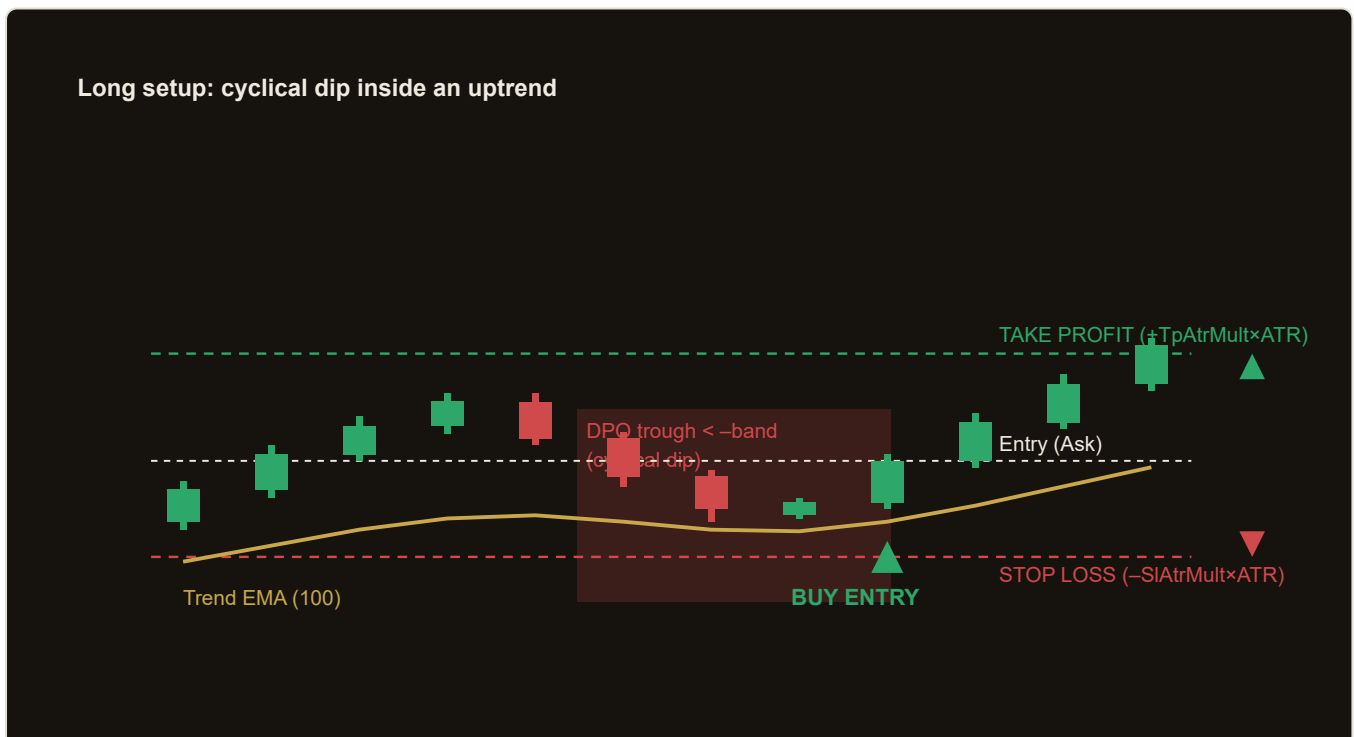
Only **one position per magic number** is held at any time. If a position is already open, the EA manages it and skips signal evaluation until it closes. When flat, the stored risk distance is reset before the next setup is sought.

Worked example (long)

Suppose $ATR = 0.0020$ and the EA enters long at 1.10000 with defaults (SL $1.5\times$, TP $2.5\times$, trail $2.0\times$, BE $1.0R$). Initial stop = $1.10000 - 0.0030 = 1.09700$ ($R = 30$ pips); target = $1.10000 + 0.0050 = 1.10500$. Once price reaches 1.10300 ($+1R$), the stop jumps to 1.10000 (breakeven). From there the stop trails 40 pips ($2.0 \times ATR$) below price, locking in gains as the cyclical up-move continues toward the target.

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
DpoPeriod	20	SMA length used by the Detrended Price Oscillator. Also sets the classic displacement ($DpoPeriod / 2 + 1$). Range 10–40, step 2.
TrendEmaPeriod	100	Length of the slow trend EMA that defines the tradable direction (longs above, shorts below). Range 40–200, step 10.
AtrPeriod	14	ATR length used to scale the band, stops, targets, and trailing distance to current volatility. Range 7–28, step 1.
BandAtrMult	0.75	DPO extreme band expressed as a multiple of ATR. Higher values demand deeper cyclical dips/rallies before a signal. Range 0.20–2.0, step 0.05.
SlAtrMult	1.5	Initial stop-loss distance in ATR multiples. Range 0.8–3.0, step 0.1.
TpAtrMult	2.5	Take-profit distance in ATR multiples. Range 1.0–5.0, step 0.1.
TrailAtrMult	2.0	ATR-multiple distance for the trailing stop once the trade is running. Range 1.0–4.0, step 0.1.
BreakevenR	1.0	Profit, in multiples of initial risk (R), at which the stop is moved to breakeven. Range 0.5–2.0, step 0.1.
Lots	0.10	Fixed trade volume in lots. Range 0.01–1.0, step 0.05.
Magic	20260703	EA magic number used to identify and manage this strategy's positions independently of other EAs.

Recommended Settings

The EA is timeframe-agnostic — it reads the chart's primary timeframe, so it runs on whatever period you attach it to. The defaults are tuned as a sensible balanced starting point.

- **Timeframe:** H1 works well as a default. Cyclical pullbacks are also clean on H4; lower timeframes (M15/M30) generate more signals but more noise.
- **Symbols:** liquid, trending instruments such as major FX pairs (EURUSD, GBPUSD, USDJPY) or major indices, where the trend-EMA filter has the most edge.
- **Trend filter:** keep `TrendEmaPeriod` long relative to the DPO cycle so the EMA reflects the true higher-level trend and the DPO handles the timing.

- **Band sensitivity:** raise `BandAtrMult` for fewer, higher-conviction entries; lower it for more frequent signals.

Tip: because every distance is ATR-scaled, the EA transfers reasonably well across symbols and timeframes without re-tuning stops in pips. Always validate any change with a fresh backtest and forward test on a demo account before going live.

How to Install on MetaTrader 5

- 1 Copy `DetrendedCyclePullback.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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