

Displacement Surge Runner

Expert Advisor Documentation

PLATFORM

MetaTrader 5 (MT5)

TYPE

Momentum Continuation (Price Action)

TIMEFRAME

M15 – H1

WEBSITE

www.algotbot.live

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Overview

Displacement Surge Runner is a pure price-action, momentum-continuation Expert Advisor for MetaTrader 5. It uses **no indicators** — no moving averages, no RSI, no ATR. Every decision is derived from raw OHLC candle data.

The strategy is built on a single observation: genuine institutional momentum reveals itself as a *displacement* candle — a bar whose body is far larger than the recent average body and that closes near its own extreme, signalling conviction rather than a fakeout wick. A single big candle on its own, however, is often a trap. Institutions tend to push, pause, then push again. So instead of chasing the displacement bar, Displacement Surge Runner **arms** a setup and waits for a **shallow pullback** that respects the move, then enters only on the **continuation** — when a later candle closes back through the displacement bar's far extreme, proving the surge has resumed.

Risk is defined by the displacement candle itself: the stop sits just beyond the candle's origin extreme, and the take-profit is a fixed reward-to-risk multiple of that distance.

In one sentence: spot a high-conviction surge candle, wait for a shallow pullback that holds its midpoint, then enter on the breakout-continuation through its extreme — with the stop anchored to the surge candle's own range.

How It Works

The EA evaluates exactly one decision per **newly-closed bar**. The currently-forming bar (shift 0) is never traded; when its timestamp changes, the bar that just closed (shift 1) becomes the bar under evaluation. The logic proceeds in three stages: **detect** → **arm** → **trigger**.

1. Detecting a displacement candle

On each closed bar, the EA checks whether that bar qualifies as a displacement (surge) candle. Two conditions must both hold:

- **Body expansion** — the candle's body $|close - open|$ must exceed the average body of the previous `AvgBodyPeriod` candles (measured strictly *behind* the candidate) by at least the `BodyExpansion` factor.
- **Close strength (conviction)** — the candle must close near the extreme it pushed toward. For a bullish bar, $(close - low) / range$ must be at least `CloseStrength`; for a bearish bar, $(high - close) / range$ must clear the same threshold. This rejects long-wicked, indecisive candles.

A bullish displacement arms a potential **long**; a bearish displacement arms a potential **short**. The EA only hunts for new setups when it is flat for its `Magic` number.

2. Arming the setup

When a displacement candle is found, the EA records its reference levels and waits:

- **Displacement high / low** — the extremes of the surge candle.
- **Displacement midpoint** — $(high + low) / 2$, the line a valid pullback must respect.
- **Direction** — `+1` long or `-1` short.

3. The shallow-pullback filter & continuation trigger

With a setup armed, each subsequent closed bar is tested before any new setup can form:

- **Pullback too deep** → **abandon**. For a long, if a bar's *low* falls below the displacement midpoint, momentum has failed and the setup is disarmed. For a short, the same applies if a bar's *high* rises above the midpoint.
- **Continuation** → **enter**. For a long, when a bar *closes above* the displacement high, the surge has resumed and the EA buys at the current Ask. For a short, when a bar *closes below* the displacement low, it sells at the current Bid.
- **Expiry**. If neither outcome occurs within `ContinuationBars` closed bars, the armed setup expires and the EA returns to hunting.

Stop loss & take profit

Risk is anchored to the displacement candle's own range:

$$\text{buffer} = \text{StopBufferPct} \times (\text{dispHigh} - \text{dispLow})$$

Long: $\text{SL} = \text{dispLow} - \text{buffer}$
 $\text{risk} = \text{entry} - \text{SL}$
 $\text{TP} = \text{entry} + \text{RewardRisk} \times \text{risk}$

Short: $\text{SL} = \text{dispHigh} + \text{buffer}$
 $\text{risk} = \text{SL} - \text{entry}$
 $\text{TP} = \text{entry} - \text{RewardRisk} \times \text{risk}$

The trade is only sent if the computed risk is positive. Stop and target levels are normalised to the symbol's digit precision before the order is placed.

Worked long example

Suppose a bullish surge candle prints with a high of 1.10500 and a low of 1.10300 (range = 0.00200). The midpoint is 1.10400. Over the next few bars price pulls back but its lows stay above 1.10400. A later candle then closes at 1.10520 — above the displacement high — so the EA buys at the Ask. With `StopBufferPct = 0.25`, the buffer is 0.00050, placing the stop at 1.10250. If risk works out to roughly 0.00270, a `RewardRisk` of 2.00 sets the take-profit about 0.00540 above entry.

Note: the EA acts only on closed bars and never arms a new setup on the same bar it just managed. This keeps signals stable and avoids reacting to intrabar noise.

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
Lots	0.10	Fixed trade volume in lots. Range 0.01–1.00, step 0.05.
AvgBodyPeriod	12	Lookback used to compute the average candle body (the momentum baseline), measured on the bars behind the displacement candidate. Range 5–30, step 1.
BodyExpansion	1.80	The displacement body must exceed the average body by this factor to count as a surge. Range 1.20–3.50, step 0.10.
CloseStrength	0.60	Minimum close strength: the candle's close-to-extreme distance as a share of its range (conviction near the high/low). Range 0.40–0.85, step 0.05.
ContinuationBars	4	Maximum number of closed bars to wait for the pullback + continuation before the armed setup expires. Range 1–8, step 1.
StopBufferPct	0.25	Stop buffer beyond the displacement candle's origin extreme, as a fraction of its range. Range 0.00–1.00, step 0.05.
RewardRisk	2.00	Take-profit distance as a multiple of the (entry – stop) risk. Range 1.00–4.00, step 0.25.
Magic	1001	Magic number identifying this EA's positions, so it manages only its own trades on the symbol.

Recommended Settings

Because the strategy reads structure from individual candles, it is best suited to timeframes where displacement candles carry meaningful directional information and trends have room to extend.

- **Timeframe:** M15 to H1 works well for most instruments; higher timeframes produce fewer but cleaner setups.
- **Symbols:** liquid, trend-prone markets such as major FX pairs (EURUSD, GBPUSD, USDJPY) and major indices, where momentum bursts are common.
- **BodyExpansion:** raise toward 2.00–2.50 to demand stronger surges and filter out marginal moves; lower it for more frequent (but lower-quality) signals.
- **RewardRisk:** 2.00 is a balanced default. Higher multiples improve per-trade payoff but reduce hit rate.
- **Lots:** size according to your account so that the worst-case loss (entry to stop) stays within your per-trade risk tolerance.

Tip: always validate parameter changes with the MT5 Strategy Tester on out-of-sample data before trading live. Tune `BodyExpansion` and `CloseStrength` together — they jointly control how selective the displacement filter is.

How to Install on MetaTrader 5

- 1 Copy `DisplacementSurgeRunner.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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