

# Central Pivot Range Breakout

Expert Advisor Documentation

PLATFORM	TYPE	TIMEFRAME	WEBSITE
MetaTrader 5 (MT5)	Price-Action Breakout	M15 (single timeframe)	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

**Central Pivot Range Breakout** is a pure price-level and price-action Expert Advisor — it uses **no indicators** (no moving average, RSI, ATR, or anything else). Instead it trades the **Central Pivot Range (CPR)**, a three-line pivot band that floor traders have long used to gauge whether a session is more likely to *trend* or to *range*.

The CPR is built from three levels:

$$\begin{aligned} P &= (H + L + C) / 3 && \text{central pivot} \\ BC &= (H + L) / 2 && \text{bottom central (one band edge)} \\ TC &= 2P - BC && \text{top central (other band edge)} \end{aligned}$$

The edges are then ordered so **TC** is always the higher line and **BC** the lower. The decisive number is the **CPR width** = **TC - BC**:

- A **narrow CPR** signals little agreement on value, so the next session usually **trends / breaks out** of the band.
- A **wide CPR** signals a balanced, two-sided market, so the next session usually **ranges**.

This EA is specifically a **narrow-CPR breakout** (distinct from a pivot-ladder fade). It recomputes the CPR from each completed rolling "session" of **N** primary-timeframe bars, holds it **static and non-repainting** for

the following session, and arms *only* when the band is narrow — the regime that predicts a breakout. It then takes the first conviction price-action break: a strong bullish close above `TC` goes long, a strong bearish close below `BC` goes short.

**Symbol & volatility agnostic.** Every distance the strategy uses — the breakout buffer and the stop buffer — is scaled by the producing session's range ( `High - Low` ), so the logic adapts to any instrument without ever needing the broker's point size. The default playground is a liquid FX major or index on M15, classic CPR territory, but it runs on whatever single timeframe is selected at backtest time.

## How It Works

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### 1. Building the rolling session

The EA acts **once per newly closed primary bar**. Each freshly closed bar is folded into an in-progress "session" accumulator that tracks the running high, low, and last close. When `SessionBars` bars have accumulated, a new CPR is finalized from that session's `H`, `L`, and `C`, the accumulators reset, and a fresh rolling session begins.

### 2. Non-repainting by construction

On every new bar the EA first *tries to trade* the just-closed bar against the CPR that is **already active** (computed entirely from bars that closed earlier), and only *afterwards* folds that bar into the building session. This ordering guarantees the band a trade is judged against was finalized strictly in the past — the levels never repaint.

### 3. Regime gate — narrow CPR only

Before any entry is considered, the strategy checks the regime: it trades only when the current band is narrow, i.e. `cprWidth ≤ NarrowFrac × sessionRange`. A wide band is expected to range, so the EA stands aside.

### 4. Entry logic

Within a narrow-CPR regime, the just-closed bar must be a **conviction candle**: its body must be at least `BodyFrac` of its range, so the EA trades decisive closes rather than wicks. The break must also be **fresh** — the prior closed bar must still have been inside or at the band.

- **Long:** a strong *bullish* candle closes clear above the top edge, `Close > TC + (BreakoutBufferFrac × range)`, with the previous close still at/below that level. Buy the expansion at the Ask.
- **Short:** a strong *bearish* candle closes clear below the bottom edge, `Close < BC - (BreakoutBufferFrac × range)`, with the previous close still at/above that level. Sell the expansion at the Bid.

## 5. Stop loss & take profit

The stop is placed back **inside the band**, beyond the breakout candle's extreme:

- **Long stop:**  $\min(\text{candleLow}, \text{BC}) - (\text{StopBufferFrac} \times \text{sessionRange})$
- **Short stop:**  $\max(\text{candleHigh}, \text{TC}) + (\text{StopBufferFrac} \times \text{sessionRange})$

Structural risk is the distance from entry to stop. The take profit is a multiple of that risk:  $\text{TP} = \text{entry} \pm \text{RewardRisk} \times \text{risk}$ . Once placed, the position is managed entirely by its stop and target — there is no trailing or partial logic.

## 6. Filters & position management

- **Spread filter:** new entries are skipped when the current spread (in points) exceeds  $\text{MaxSpreadPoints}$ .
- **One position per magic:** a single open position per magic number is allowed; the structural stop and RR target handle the exit.
- **Range guard:** sessions or candles with non-positive range are ignored, avoiding divide-by-zero and degenerate bars.

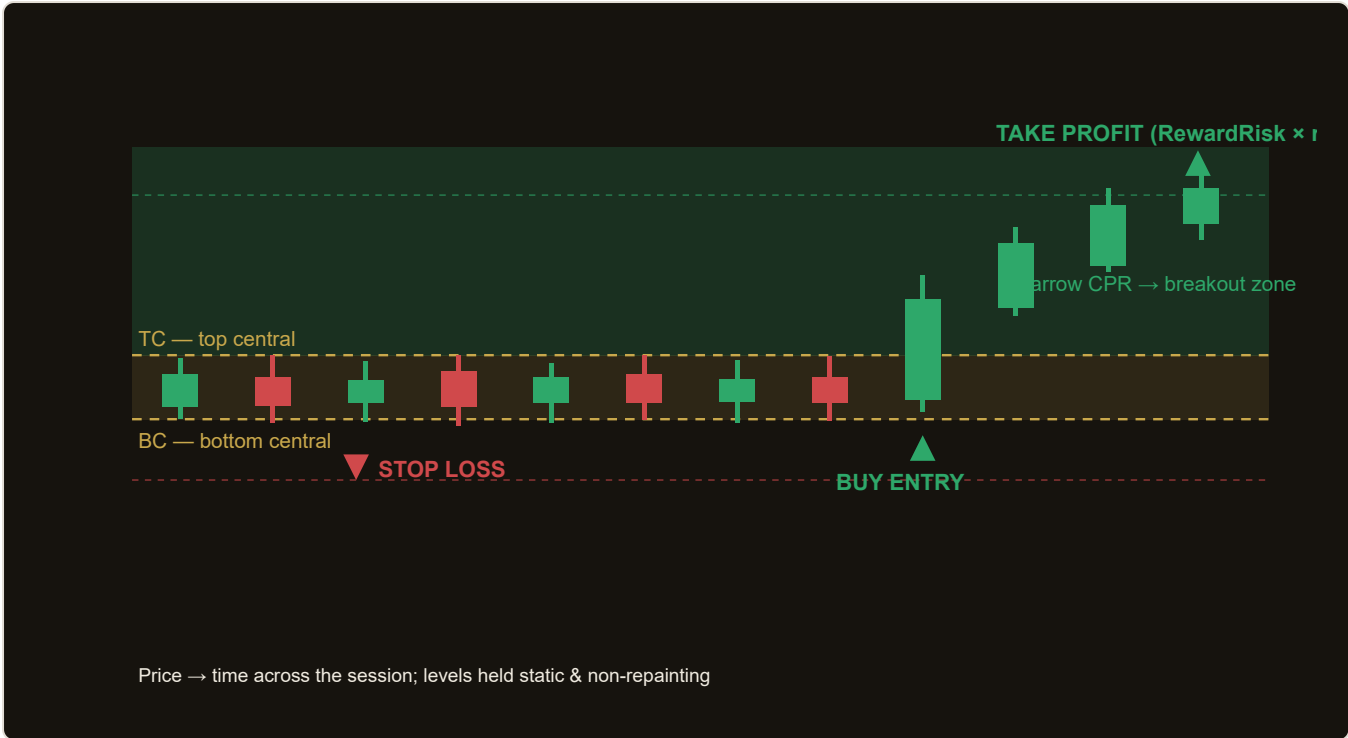
### Worked example (long)

With  $\text{SessionBars} = 20$  the EA builds a CPR from the last 20 M15 bars. Suppose that session's range is 100 pips and the resulting band is just 22 pips wide. Because  $22 \leq 0.30 \times 100$ , the band counts as narrow and trading is armed. A bar then closes bullish with a body that is 60% of its range, finishing 6 pips above  $\text{TC}$  (clear of the  $0.05 \times 100 = 5$  pip buffer), while the prior bar was still inside the band. The EA buys at the Ask, sets the stop 15 pips ( $0.15 \times 100$ ) below the band, and targets 1.8× that risk.

## Strategy in Action

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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.



Price → time across the session; levels held static & non-repainting

*Illustrative example only. Actual market behaviour varies.*

## Parameters

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Parameter	Default	Description
SessionBars	20	Number of primary-timeframe bars that make up one rolling session from which the CPR is computed. Range 8–80, step 4. Values below 2 are clamped to 2.
NarrowFrac	0.30	Maximum CPR width, as a fraction of the producing session's range, for the band to count as <i>narrow</i> (trending/breakout regime) and arm trading. Range 0.10–0.80, step 0.05.
BreakoutBufferFrac	0.05	How far beyond TC / BC (fraction of session range) the candle must close for the break to be confirmed; filters marginal pokes. Range 0.00–0.30, step 0.01.
BodyFrac	0.50	Minimum breakout-candle body ÷ range — demands a conviction close rather than a wick. Range 0.20–0.90, step 0.05.
StopBufferFrac	0.15	Stop buffer beyond the breakout candle extreme / band edge, as a fraction of the session range. Range 0.02–0.60, step 0.02.
RewardRisk	1.80	Take-profit distance as a multiple of the structural risk (entry → stop). Range 0.50–4.00, step 0.10.
MaxSpreadPoints	100	Skip new entries when the current spread (in points) is wider than this. Range 5–300, step 5.
Lots	0.10	Order volume in lots. Range 0.01–1.00, step 0.05.
Magic	7711	Magic number identifying this EA's positions; enables the one-position-per-magic rule. Range 0–9,999,999, step 1.

## Recommended Settings

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The strategy was designed around a liquid FX major or index on **M15** — classic CPR territory — but it is symbol and volatility agnostic because every distance is scaled by the session range.

- **Instrument:** a liquid FX major (e.g. EUR/USD) or a major index CFD.
- **Timeframe:** M15 as a starting point; any single timeframe is supported (never a higher TF).
- **Session length:** the default `SessionBars = 20` approximates a recurring intraday session on M15. Increase it for a slower, higher-conviction band; decrease it for more frequent re-evaluation.
- **Regime tightness:** lower `NarrowFrac` for stricter (fewer but cleaner) breakout setups; raise it to arm more often.

- **Risk:** keep `Lots` conservative and size relative to account equity. `RewardRisk = 1.80` balances hit rate against payoff.

**Tip — tune before you trade.** Because all thresholds are fractions of the session range, the same parameter set transfers reasonably across instruments. Still, always backtest and forward-test on your specific symbol, broker spreads, and timeframe before committing real capital.

## How to Install on MetaTrader 5

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- 1 Copy `CentralPivotRangeBreakout.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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