

Premier Stochastic Reversal

Expert Advisor Documentation

PLATFORM

MetaTrader 5 (MT5)

TYPE

Mean-Reversion / Exhaustion Reversal

TIMEFRAME

Intraday (M15–H1)

WEBSITE

www.algobot.live

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Overview

Premier Stochastic Reversal is an exhaustion-reversal Expert Advisor built on William Blau's **Premier Stochastic Oscillator (PSO)** — a heavily-conditioned stochastic that does not appear in any other AlgoBot strategy. Rather than trading a raw overbought/oversold reading, the EA waits for the oscillator to first pin a saturation extreme and then *hook back* through a threshold band, marking the precise moment the crowd's push begins to fail.

The PSO is constructed in four stages. First a raw stochastic %K is computed over `StochLength` bars. That value is re-centred into the range `[-5, +5]`, then passed through **two chained EMAs** of `SmoothPeriod` (Blau's "noise kill" double-smoothing). Finally the doubly-smoothed value is squashed through a `tanh` function, bounding the result to `(-1, +1)`. Because a genuine trend move drives the oscillator hard against its rails, a naive "above +threshold = short" rule would fight strong trends — so the EA instead trades the *return trip* back through the band.

The strategy uses distinct long and short rules, a single timeframe (everything reads the primary timeframe), and ATR-based risk. It is best suited to ranging FX majors on intraday timeframes, but it is not locked to any particular symbol or timeframe.

Why "Premier"? The double-EMA smoothing followed by the `tanh` squash gives the oscillator an unusually clean, saturating profile. Instead of chattering back and forth like a raw stochastic, it presses firmly against `+1` or `-1` during a real move and only releases when momentum genuinely turns — which is exactly what this EA waits for.

How It Works

The Premier Stochastic Oscillator

On every newly-closed bar, the EA rebuilds the PSO series over its rolling buffer:

```
1. Raw %K    : sto = 100 * (close - lowestLow) / (highestHigh - lowestLow)    over StochLength
2. Re-centre: nsK = 0.1 * (sto - 50)                                          maps to [-5, +5]
3. Smooth    : e1 += alpha*(nsK - e1); e2 += alpha*(e1 - e2)                two chained EMAs
               alpha = 2 / (SmoothPeriod + 1)
4. Squash     : pso = (e^e2 - 1) / (e^e2 + 1) = tanh(e2 / 2)                bounded (-1, +1)
```

Only the last two oscillator values — `psoPrev` and `psoCurr` — are needed to detect the hook.

Entry Logic

The threshold band is symmetric: `lo = -Threshold` and `hi = +Threshold`. A signal fires only when the oscillator was pinned inside a saturation zone on the previous bar and has just crossed back out of it:

- **Long (Buy):** the PSO was at or below `-Threshold` and crosses back *up* through `-Threshold` — selling pressure is exhausted. `psoPrev <= -Threshold && psoCurr > -Threshold`
- **Short (Sell):** the PSO was at or above `+Threshold` and crosses back *down* through `+Threshold` — buying pressure is exhausted. `psoPrev >= +Threshold && psoCurr < +Threshold`

Worked example — a long setup

With `Threshold = 0.90`, price sells off and the PSO presses down to `-0.93`, pinned deep in the oversold saturation zone. On the next closed bar the oscillator prints `-0.70` — it has hooked back *up* through `-0.90`. Because the previous value (`-0.93`) was $\leq$ `-0.90` and the current value (`-0.70`) is now above it, a

Buy

is triggered at the Ask.

Exit Logic & Risk Sizing

The EA holds **one position per magic number at a time**; there is no discretionary or signal-based exit. Instead every trade carries a fixed stop-loss and take-profit, both derived from the Average True Range (ATR) measured at the freshly-closed bar:

```
risk = AtrStopMult * ATR
```

```
Long : SL = entry - risk      TP = entry + RewardRisk * risk
```

```
Short: SL = entry + risk      TP = entry - RewardRisk * risk
```

With the defaults (`AtrStopMult = 1.5` , `RewardRisk = 1.5`), the stop sits $1.5 \times \text{ATR}$ beyond entry and the target is $1.5 \times$ that distance — a 1.5 : 1 reward-to-risk profile. If ATR cannot be computed (value ≤ 0) the bar is skipped, so no trade is ever placed without a valid volatility measurement.

Once-per-closed-bar processing. All logic runs a single time per bar, gated on a change in the forming bar's timestamp. This mirrors the MQL5 `IsNewBar()` guard and keeps the C# and MT5 implementations behaviourally identical, avoiding intrabar re-evaluation and repeated signals.

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
StochLength	8	Lookback for the raw stochastic %K window (highest-high / lowest-low). Range 3–40, step 1. Shorter values react faster and saturate more often; longer values smooth out noise.
SmoothPeriod	5	Period of each of the two chained EMAs that double-smooth the re-centred stochastic (Blau's noise kill). Range 2–20, step 1. Higher values produce a cleaner, slower oscillator.
Threshold	0.90	Saturation band level in <code>(-1, +1)</code> . A signal requires the PSO to pin beyond $\pm$ Threshold and then hook back through it. Range 0.50–0.98, step 0.02. Higher = only the most extreme exhaustion triggers.
AtrPeriod	14	Averaging period for the ATR used to size the stop and target. Range 5–40, step 1.
AtrStopMult	1.5	Stop-loss distance as a multiple of ATR ($\text{risk} = \text{AtrStopMult} \times \text{ATR}$). Range 0.5–4.0, step 0.25.
RewardRisk	1.5	Take-profit distance as a multiple of the stop distance (reward-to-risk ratio). Range 0.5–4.0, step 0.25.
Lots	0.10	Fixed trade volume in lots. Range 0.01–1.0, step 0.05.
Magic	9153	Magic number identifying this EA's positions. Only one position per magic is held at a time; SL/TP manage the exit.

Recommended Settings

The strategy is designed for mean-reverting, range-bound conditions rather than strong directional trends. As a starting point:

- **Symbols:** liquid FX majors (EUR/USD, USD/JPY, GBP/USD, AUD/USD) where clean ranges are common.
- **Timeframe:** intraday charts (M15–H1) suit the oscillator's cadence best; the EA reads whatever timeframe the chart is set to.
- **Threshold:** keep near the `0.90` default. Raise toward `0.94–0.98` to demand deeper exhaustion (fewer, higher-conviction trades); lower toward `0.80` for more frequent signals.
- **Risk:** the `1.5×` ATR stop with a `1.5` reward-to-risk ratio is a balanced default. Widen `AtrStopMult` on noisier symbols to avoid premature stop-outs.

Trend caution. Because the oscillator saturates and stays pinned during strong trends, counter-trend reversal entries can be repeatedly stopped out in a persistent move. Prefer ranging conditions, and consider raising **Threshold** or reducing **Lots** during trending regimes. Always validate on a demo account and in the Strategy Tester before trading live.

How to Install on MetaTrader 5

- 1 Copy **PremierStochasticReversal.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

Tip: To reproduce results before going live, run **PremierStochasticReversal.ex5** in the MT5 *Strategy Tester* across several months of history on your chosen symbol and timeframe. Use "Every tick based on real ticks" for the most realistic fills.

Risk Warning

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