

Fisher Transform Reversal

Expert Advisor Documentation

PLATFORM

MetaTrader 5 (MT5)

TYPE

Mean Reversion (Trend-Filtered)

TIMEFRAME

M15 – H1

WEBSITE

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

Fisher Transform Reversal is a trend-filtered mean-reversion Expert Advisor built around John Ehlers' Fisher Transform — an oscillator that most retail systems never touch. Ordinary price behaves like a heavy-tailed random walk, so raw oscillators smear their turning points across several bars. The Fisher Transform first normalises the median price into a `[-1, +1]` band over a lookback window, then pushes it through `0.5 · ln((1+x)/(1-x))`. That transform stretches values near the band edges toward infinity, so a stretched market produces a **sharp, unambiguous spike** instead of a lazy roll-over. Reversals show up as a clean, early kink in the Fisher line rather than a vague hump — exactly what a fade wants.

Crucially, the EA never fades a trend blindly. A slow EMA's slope defines the market regime, and the strategy only takes an oversold Fisher turn while that EMA is *rising*, or an overbought Fisher turn while it is *falling*. This converts a raw counter-trend signal into a disciplined **trend-pullback entry**: buying the dip of an uptrend at the moment momentum snaps back, and mirror-selling the bounce of a downtrend. Aligning every trade with the dominant regime is the core drawdown-control mechanism.

Design philosophy. Naked oscillator fades get run over by trends. Fisher Transform Reversal keeps the precision of the Fisher spike but only ever trades *with* the prevailing regime — it is a pullback engine, not a counter-trend gambler. Its natural home is a liquid major such as EURUSD or USDJPY, or a stock index, on M15 to H1.

How It Works

1. The Fisher Transform engine

On every closed bar of the primary timeframe, the EA advances a compact recursive state:

- **Median price:** $MP = (High + Low) / 2$ of the closed bar.
- **Normalisation:** MP is scaled to $x \in [-1, +1]$ using the highest and lowest MP over the last `FisherPeriod` bars, then smoothed as $value = 0.33 \cdot x + 0.67 \cdot prevValue$ and clamped to ± 0.999 .
- **Fisher line:** $Fisher = 0.5 \cdot \ln((1+value)/(1-value)) + 0.5 \cdot prevFisher$. Its own previous reading serves as the trigger line.

2. Trend regime filter

A slow EMA (`TrendEmaPeriod`) defines the regime. The EA measures its slope over `TrendSlopeLookback` bars: a positive slope is an **uptrend** (longs enabled), a negative slope is a **downtrend** (shorts enabled). No trade is taken against the regime.

3. Entry logic

An entry fires only when a Fisher turn and the matching regime agree:

- **LONG:** Fisher turns up ($Fisher > prevFisher$) after `prevFisher` had dipped below `-ExtremeLevel` (a genuine oversold stretch), *and* the trend EMA is rising.
- **SHORT:** Fisher turns down ($Fisher < prevFisher$) after `prevFisher` had pushed above `+ExtremeLevel`, *and* the trend EMA is falling.

4. Exit logic — stop loss & take profit

Exits are fully volatility-adaptive and symbol/timeframe agnostic. On entry the EA computes the current ATR and sets a bracket that is never moved:

```
stopDist = AtrMultSl × ATR
Stop Loss  = entry - stopDist      (LONG) /  entry + stopDist  (SHORT)
Take Profit = entry ± RewardRatio × stopDist
```

There is no trailing stop or break-even logic — the position is managed entirely by its ATR-scaled stop and target, so the reward-to-risk ratio is fixed the moment the trade opens.

5. Position sizing

Sizing is gently equity-proportional. The base lot is calibrated to a reference balance and scaled by the live account balance, so risk stays proportional as the account grows or shrinks instead of a flat lot that over-risks a small account and under-uses a large one:

```
lots = round( BaseLots × (Balance / ReferenceBalance), 2 )
        clamped to [0.01, 100.00]
```

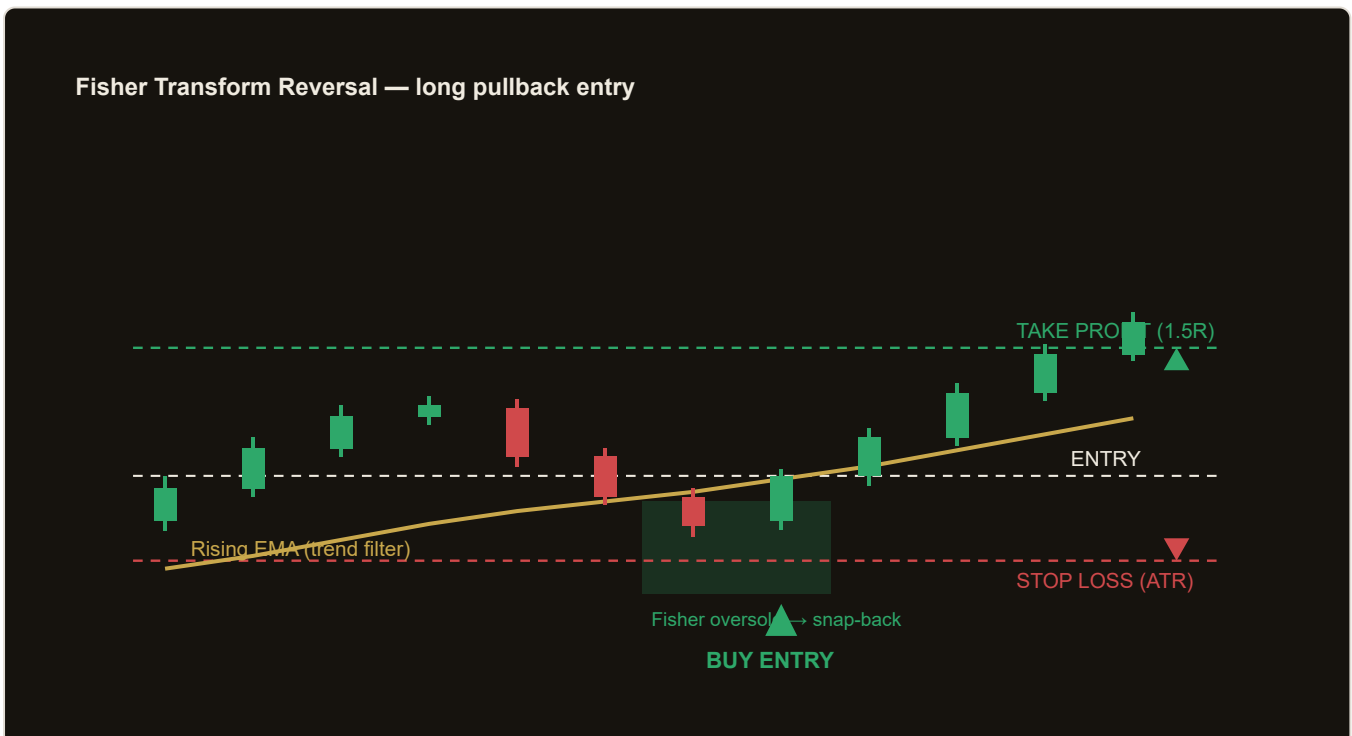
6. Risk gates

- **Spread gate:** new entries are skipped whenever the current spread exceeds `MaxSpreadPoints`.
- **One position per magic:** only a single open position per magic number at a time; the ATR bracket handles the exit.
- **Bar-close execution:** the EA acts once per newly-closed bar, avoiding intrabar noise and repainting.

Note on warm-up. The Fisher and EMA states are recursive, so the EA seeds itself from already-closed history on initialisation. The MQL5 build reconstructs the Fisher line over a 300-bar warm-up window; the recursion's decay makes the zero-seed influence vanish, matching the C# persistent state to floating-point precision.

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. It depicts a **long trend-pullback**: price dips into an oversold Fisher stretch while the trend EMA keeps rising, the Fisher line snaps back up, and the EA buys the dip with an ATR-based stop and a 1.5× reward target.



Illustrative example only. Actual market behaviour varies.

Parameters

Every input below maps one-to-one between the C# strategy definition and the MQL5 Expert Advisor.

Parameter	Default	Description
FisherPeriod	10	Lookback window (bars) for the Fisher normalisation — the highest/lowest median price used to scale price into the <code>[-1, +1]</code> band. Range 5–30, step 1.
ExtremeLevel	1.5	How far past <code>±</code> this the Fisher must have stretched to count as over-extended (oversold/overbought). Range 0.5–3.5, step 0.1.
TrendEmaPeriod	100	Period of the slow EMA that defines the trend regime the EA is allowed to trade with. Range 20–300, step 10.
TrendSlopeLookback	3	Number of bars over which the trend EMA's slope is measured (the rising/falling gate). Range 1–20, step 1.
AtrPeriod	14	ATR period used to size the volatility-scaled stop and target distances. Range 7–30, step 1.
AtrMultSl	2.0	Stop-loss distance as a multiple of ATR. Range 0.5–5.0, step 0.1.
RewardRatio	1.5	Take-profit distance as a multiple of the stop distance (reward:risk). Range 0.8–4.0, step 0.1.
MaxSpreadPoints	30	Skip new entries if the current spread (in points) is wider than this. Range 1–200, step 1.
BaseLots	0.10	Base lot size at <code>ReferenceBalance</code> ; scaled by <code>Balance / ReferenceBalance</code> . Range 0.01–1.00, step 0.05.
ReferenceBalance	10000	Account balance the <code>BaseLots</code> figure is calibrated to (the position-sizing anchor). Range 500–1,000,000, step 500.
Magic	4207	Magic number identifying this EA's positions. Range 0–9,999,999, step 1.

Recommended Settings

The defaults are tuned for a liquid major such as EURUSD or USDJPY, or a stock index, on the M15 to H1 timeframes. Start with the defaults and adjust deliberately.

SYMBOLS & TIMEFRAMES

- **Symbols:** liquid majors (EURUSD, USDJPY) or an index — instruments with tight spreads and clean trending behaviour.
- **Timeframes:** M15, M30, or H1. Lower timeframes raise spread sensitivity; higher ones reduce trade frequency.

TUNING NOTES

- **ExtremeLevel** controls selectivity. Higher values (e.g. 2.0–2.5) demand a deeper stretch and take fewer, cleaner reversals; lower values trade more often.
- **TrendEmaPeriod** sets how strict the regime filter is. A longer EMA only allows well-established trends; a shorter one reacts faster but admits choppier regimes.
- **AtrMultSl** and **RewardRatio** jointly define the risk profile. Widening the stop reduces premature exits but increases per-trade risk; the target scales with the stop.
- **MaxSpreadPoints** should be set relative to your broker's typical spread on the chosen symbol.

Example: EURUSD on H1

Suppose $ATR = 0.0020$ (20 pips) at signal time with $AtrMultSl = 2.0$. The stop distance is $2.0 \times 0.0020 = 0.0040$ (40 pips). With $RewardRatio = 1.5$, the take-profit sits $1.5 \times 0.0040 = 0.0060$ (60 pips) beyond entry. On a \$10,000 balance with $BaseLots = 0.10$ and $ReferenceBalance = 10000$, the EA trades 0.10 lots; at \$20,000 it scales to 0.20 lots.

Tip. Always validate any parameter change with a walk-forward test in the MT5 Strategy Tester on the exact symbol and timeframe you intend to trade before committing real capital. The Fisher recursion is symbol-agnostic, but stop/target behaviour depends heavily on each instrument's volatility.

How to Install on MetaTrader 5

- 1 Copy `FisherTransformReversal.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

Before going live. Run the EA in the Strategy Tester and on a demo account first. Confirm that the spread gate, lot sizing, and ATR bracket behave as expected on your broker's feed.

Risk Warning

Trading foreign exchange, CFDs, and other leveraged financial instruments involves substantial risk of loss and is not suitable for all investors. The strategies and tools described in this document are provided for **educational purposes only** and do not constitute financial advice, investment recommendations, or solicitation to trade. Always consult a qualified financial adviser before making trading decisions. Past backtest performance is not indicative of future results.