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Williams Fractal Trend Breakout

Expert Advisor Documentation

PLATFORM	TYPE	TIMEFRAME	WEBSITE
MetaTrader 5 (MT5)	Trend-Filtered Breakout	Any (H1–H4 recommended)	www.algobot.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

The **Williams Fractal Trend Breakout** is a trend-filtered breakout Expert Advisor built on the classic Bill Williams fractal. Rather than fading pullbacks or reacting to structure shifts, it waits for price to **close beyond the most recent confirmed swing point** — and only takes that breakout when it agrees with the prevailing EMA trend.

Because a Williams fractal is only confirmed once a fixed number of bars have printed on each side of the swing, the strategy naturally filters out short-lived noise: only genuine, settled swing highs and lows arm a breakout level. Stops and targets are sized from the Average True Range (ATR), so the EA **self-scales** to whatever symbol and timeframe it is attached to.

The logic locks to no specific timeframe — every bar read uses the chart's own period — making it well suited to liquid, trending markets such as GBPUSD, XAUUSD (gold), and major indices across intraday-to-swing horizons.

> **In one sentence:** Buy the close above the last confirmed swing high while the fast EMA is above the slow EMA; sell the close below the last confirmed swing low while the fast EMA is below the slow EMA — with ATR-based stop and target.

How It Works

1. Fractal swing detection

A Williams fractal is defined by its half-width, the `FractalWing` parameter (bars required on each side of the swing):

- **Up fractal (swing high):** a bar whose HIGH is strictly above the highs of `FractalWing` bars on *both* sides. Its high becomes the **long breakout level**.
- **Down fractal (swing low):** the mirror image — a bar whose LOW is strictly below the lows of `FractalWing` bars on both sides. Its low becomes the **short breakout level**.

Confirmation deliberately lags by `FractalWing` bars. The centre bar being tested sits exactly that many bars back from the freshly closed bar, so once it has the required bars on both sides it can be confirmed. Each new confirmation re-arms (overwrites) the corresponding breakout level.

2. Trend filter

Direction is gated by a fast EMA versus a slow EMA of closing prices:

- **Uptrend** — `FastEma > SlowEma` → only *long* breakouts are allowed.
- **Downtrend** — `FastEma < SlowEma` → only *short* breakouts are allowed.

3. Entry logic

All decisions are made on a freshly **closed** bar (never on a still-forming bar):

- **LONG** when the bar closes *above* the last up-fractal high **and** the market is in an uptrend.
- **SHORT** when the bar closes *below* the last down-fractal low **and** the market is in a downtrend.

The moment a level is broken it is **consumed** (disarmed), so the same swing is never traded twice — the EA then waits for a fresh fractal to arm the next opportunity. Only one position per symbol + magic number is held at a time.

4. Exit logic — ATR-based stop & target

On entry, the protective stop and target are placed a multiple of the current ATR away from the fill price:

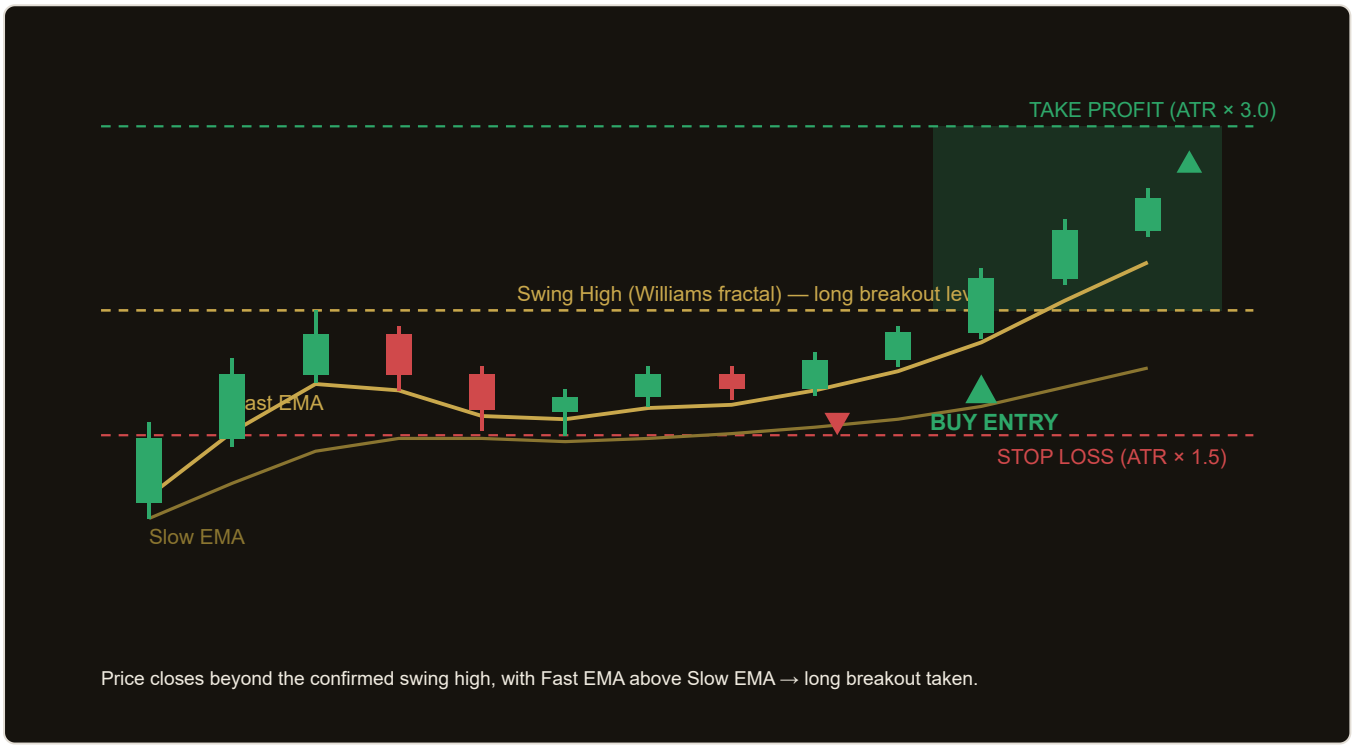
```
LONG :  SL = entry − AtrSlMult × ATR      TP = entry + AtrTpMult × ATR
SHORT:  SL = entry + AtrSlMult × ATR      TP = entry − AtrTpMult × ATR
```

With the defaults (`AtrSlMult = 1.5`, `AtrTpMult = 3.0`) this yields a **2:1 reward-to-risk** target. Positions are managed by these fixed SL/TP levels; there is no trailing or partial-close logic.

Self-consistency: the C# strategy and the MQL5 Expert Advisor mirror each other exactly — the same fractal confirmation, EMA filter, level consumption, and ATR sizing. On initialisation both clamp `FractalWing` to a minimum of 2 and force `SlowEma` to stay strictly slower than `FastEma` (`SlowEma = FastEma + 10` if it was set lower).

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
FractalWing	`2`	Half-width of the fractal — the number of bars required on each side of a swing before it is confirmed. Larger values give slower, cleaner swings. Range 2–5, step 1. (Clamped to a minimum of 2.)
FastEma	`20`	Period of the fast EMA of closes used by the trend filter. Range 5–60, step 5.
SlowEma	`50`	Period of the slow EMA of closes. Uptrend when fast > slow, downtrend when fast < slow. Range 20–200, step 10. (Forced to stay strictly slower than FastEma.)
AtrPeriod	`14`	Averaging period of the ATR used to size the stop and target. Range 7–30, step 1.
AtrSlMult	`1.5`	Stop-loss distance as a multiple of ATR. SL = entry −/+ AtrSlMult × ATR. Range 0.5–4.0, step 0.25.
AtrTpMult	`3.0`	Take-profit distance as a multiple of ATR. TP = entry +/− AtrTpMult × ATR. Range 1.0–6.0, step 0.5.
Lots	`0.10`	Fixed trade size (volume) per position. Range 0.01–1.0, step 0.05.
Magic	`7314`	Magic number identifying this EA's positions. Ensures the one-position-at-a-time rule only counts trades belonging to this strategy on the symbol.

Recommended Settings

The strategy is timeframe-agnostic, but it is designed for liquid, trending instruments where confirmed swing highs and lows carry meaning. The following are sensible starting points — always validate on your own broker's data before going live.

MARKETS & TIMEFRAME

- **Symbols:** GBPUSD, XAUUSD (gold), and major indices — trending, liquid markets suit breakout logic best.
- **Timeframe:** H1–H4 for a balance of signal quality and trade frequency. Lower timeframes generate more (noisier) fractals; higher timeframes give fewer, higher-conviction breakouts.

TUNING NOTES

- **Choppy markets:** raise `FractalWing` (3–4) to demand wider, more settled swings and cut false breakouts.

- **Stronger trend gating:** widen the gap between `FastEma` and `SlowEma` (e.g. 20 / 100) so only well-established trends enable trades.
- **Reward/risk:** the default 1.5 / 3.0 ATR multiples give a 2:1 target. Increase `AtrTpMult` for trend-riding, or tighten `AtrSlMult` to reduce per-trade risk.

Example — GBPUSD H1, default parameters

A confirmed up-fractal prints at 1.27310 while the 20-EMA sits above the 50-EMA. Three bars later a candle closes at 1.27380 — above the swing high — so a long is opened. With ATR = 0.00120, the stop is placed at entry − 1.5 × 0.00120 and the target at entry + 3.0 × 0.00120, a 2:1 reward-to-risk trade. The 1.27310 level is then consumed and will not be traded again until a new fractal forms.

Tip: Backtest each symbol/timeframe combination in the MT5 Strategy Tester across several years of data. Because stops and targets are ATR-scaled, the same parameter set adapts to different volatility regimes without manual pip retuning.

How to Install on MetaTrader 5

1. Copy `WilliamsFractalTrendBreakout.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

Note: The EA acts once per newly closed bar. On first attach it needs enough bar history to confirm a fractal and evaluate the EMAs and ATR before it can arm a level — allow a few bars for the first signals to appear.

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.