

# Multi Horizon Momentum Consensus

Expert Advisor Documentation

| PLATFORM           | TYPE                       | TIMEFRAME      | WEBSITE                                                |
|--------------------|----------------------------|----------------|--------------------------------------------------------|
| MetaTrader 5 (MT5) | Momentum / Trend-Following | H1 (adaptable) | <a href="http://www.algobot.live">www.algobot.live</a> |

**⚠ 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

**Multi Horizon Momentum Consensus** is a volatility-normalized time-series momentum Expert Advisor that trades only broad-based trend *ignition*. Time-series (or "absolute") momentum is one of the most persistent, well-documented return anomalies, but any single lookback window is noisy — a 20-bar push can be up while the underlying drift is flat. Genuine trends, by contrast, tend to announce themselves at every scale at once.

To exploit that, the strategy measures momentum across four geometrically-spaced horizons — **L**, **2L**, **4L**, and **8L** bars — a 16:1 span from fastest to slowest. Each raw displacement is divided by the current Average True Range (ATR) so that all four readings are expressed in the same volatility-comparable units:

$$\text{mom\_h} = (\text{Close}[0] - \text{Close}[h]) / \text{ATR}$$

A trade only fires on a **consensus**: all four horizons must share the same sign (unanimous directional agreement) *and* the average vol-adjusted momentum must clear a magnitude threshold. Requiring agreement across the full 16:1 span filters the bulk of mean-reverting chop — where short and long horizons disagree — and isolates the minority of regimes with genuine one-way drift, exactly where momentum's edge actually lives.

**The core idea in one line:** real trends move price the same direction on every timescale. When the 5-bar, 10-bar, 20-bar, and 40-bar momenta all point the same way and clear a volatility hurdle, the market is trending — not chopping — and that is the only condition under which this EA takes a position.

## How It Works

### 1. Volatility normalization

On each newly-closed bar the EA computes ATR over `AtrPeriod` bars. ATR serves a dual purpose: it puts the four momentum readings on a common scale so they can be compared and averaged, and it later sets the stop-loss and take-profit distances. If ATR is not positive the bar is skipped.

### 2. Four geometrically-spaced momenta

Using the just-closed bar's close as the reference ( `c0` ), the EA measures displacement over four horizons and divides each by ATR:

```
horizons = { L, 2L, 4L, 8L }          // L = BaseLookback
mom_k     = (c0 - Close[h_k]) / ATR    // for each horizon h_k
avgMom     = (mom_1 + mom_2 + mom_3 + mom_4) / 4
```

It tallies how many horizons are positive and how many are negative, and it keeps the average vol-adjusted momentum `avgMom`.

### 3. Consensus & magnitude gate

Two conditions must be met simultaneously to declare a directional regime:

- **Unanimous agreement** — all four horizons share the same sign (`posCount` = 4 for long, or `negCount` = 4 for short).
- **Magnitude** — the average vol-adjusted momentum clears the threshold: `avgMom ≥ +MomentumThreshold` for a long, or `avgMom ≤ -MomentumThreshold` for a short.

### 4. Entry — the fresh ignition cross

Entries are gated to the **fresh transition** into the unanimous state, not every bar it persists. The EA remembers the prior bar's consensus state ( `-1` , `0` , or `+1` ). A long is opened only when a long consensus is present *and* the previous state was not already long — i.e. the market has just ignited into agreement. This "buy the breakout of consensus" rule avoids entering late into a mature, extended move. Long and short logic is fully symmetric.

## 5. Exit — reverse consensus, stop, and target

Every position is bracketed at entry by an ATR-based stop and target:

- **Stop loss** —  $\text{AtrStopMult} \times \text{ATR}$  away from entry.
- **Take profit** —  $\text{AtrTargetMult} \times \text{ATR}$  away from entry.
- **Reverse consensus** — if the opposite unanimous consensus forms while a position is open, the EA closes it decisively and lets the next bar re-arm.

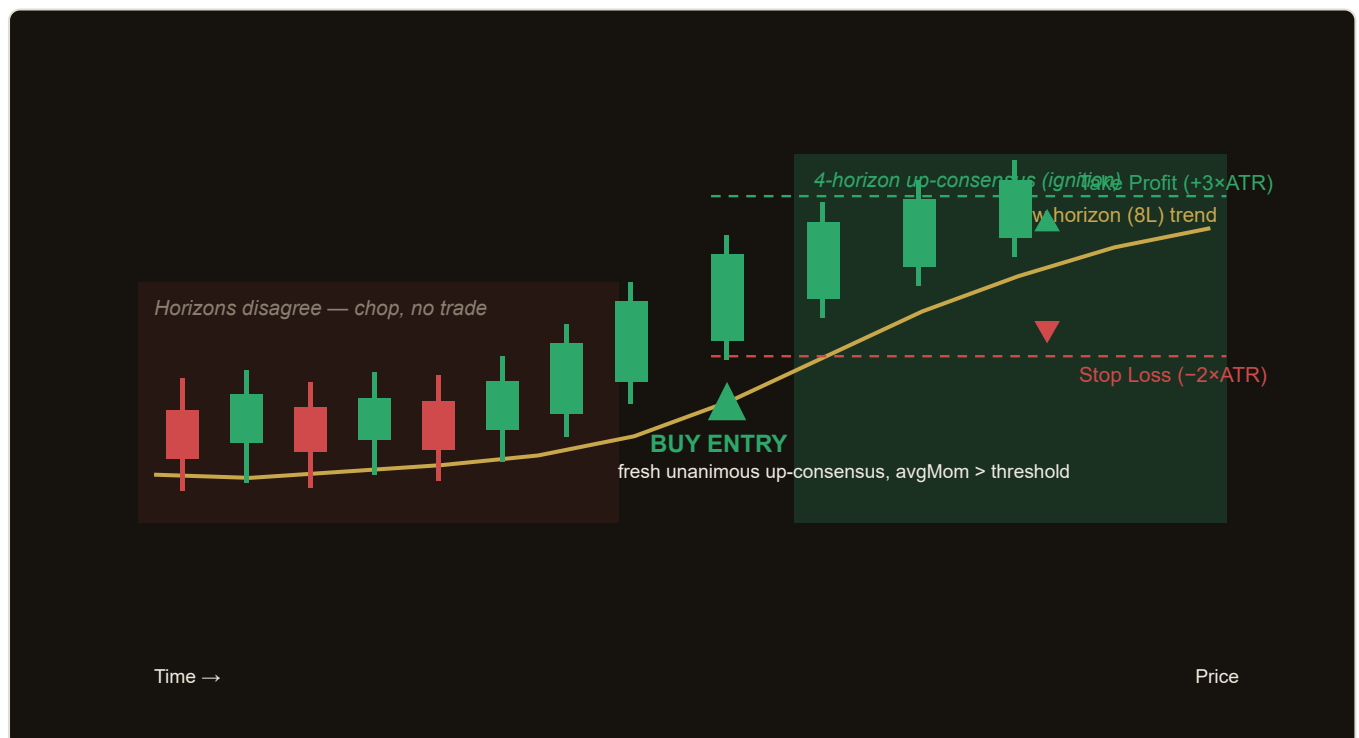
Only one position is held at a time — there is no pyramiding. A long entry uses the Ask price; a short entry uses the Bid.

### Worked example (long)

Suppose  $\text{BaseLookback} = 5$ , so the horizons are 5, 10, 20, and 40 bars, and  $\text{ATR} = 0.0020$ . Price has just pushed higher on the last bar such that all four displacements are positive and the average vol-adjusted momentum is  $+1.9 \text{ ATR}$  — above the default 1.50 threshold. Because the previous bar was *not* in a long consensus, this is a fresh ignition: the EA buys at the Ask, places a stop  $2 \times \text{ATR}$  ( $0.0040$ ) below entry and a target  $3 \times \text{ATR}$  ( $0.0060$ ) above. The position later closes at the take-profit, or earlier if the four momenta flip into a unanimous down-consensus.

## 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

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| Parameter         | Default | Description                                                                                                              |
|-------------------|---------|--------------------------------------------------------------------------------------------------------------------------|
| BaseLookback      | 5       | Shortest momentum horizon in bars. The four horizons are L, 2L, 4L, 8L. Integer, range 3–15, step 1.                     |
| MomentumThreshold | 1.50    | Minimum [average vol-adjusted momentum] (in ATR units) required to call it a trend. Numeric, range 0.50–5.00, step 0.25. |
| AtrPeriod         | 14      | ATR period used for the volatility normalization and for the stop / target distances. Integer, range 7–30, step 1.       |
| AtrStopMult       | 2.00    | Stop-loss distance as a multiple of ATR. Numeric, range 1.00–5.00, step 0.25.                                            |
| AtrTargetMult     | 3.00    | Take-profit distance as a multiple of ATR. Numeric, range 1.00–8.00, step 0.25.                                          |
| Lots              | 0.10    | Position size in lots. Numeric, range 0.01–1.00, step 0.05.                                                              |
| Magic             | 1001    | Magic number identifying this EA's positions so it manages only its own trades.                                          |

## Recommended Settings

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The defaults are a balanced starting point for liquid FX majors on the H1 timeframe. Because momentum on longer horizons is slow to build, the strategy is best suited to intraday-to-swing timeframes (H1 and above) where the four-horizon span covers a meaningful stretch of market structure.

- **Symbols:** liquid FX majors (e.g. EURUSD, GBPUSD, USDJPY) or major indices with clean, trending behaviour.
- **Timeframe:** H1 as the primary reference; H4 for slower, higher-conviction signals.
- **BaseLookback:** 5 (horizons 5/10/20/40). Raise toward 8–10 for slower, more selective trend capture; lower for faster markets.
- **MomentumThreshold:** 1.50 by default. Increase it to demand stronger, cleaner ignitions and reduce trade frequency; decrease it to trade more marginal breakouts.
- **ATR bracket:** a 2.0 stop / 3.0 target gives a 1.5:1 reward-to-risk. Widen the target for trend-riding, tighten the stop only if the instrument's volatility is stable.

**Tuning tip:** because every threshold and distance is expressed in ATR units, the same parameter set adapts automatically as volatility changes and transfers reasonably well across symbols. Start by adjusting `MomentumThreshold` (selectivity) and `BaseLookback` (speed) before touching the ATR bracket. Always validate on out-of-sample data in the Strategy Tester before going live.

## How to Install on MetaTrader 5

- 1 Copy `MultiHorizonMomentumConsensus.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 and needs enough history to fill the deepest horizon ( $8 \times$  `BaseLookback` bars) plus a full ATR window before it begins trading. Allow the chart to load sufficient history — or wait a few bars after attaching — before expecting signals.

## 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.