

Accumulative Swing Index Breakout

Expert Advisor Documentation

PLATFORM

MetaTrader 5 (MT5)

TYPE

Trend Breakout

TIMEFRAME

H1 – H4

WEBSITE

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 **Accumulative Swing Index Breakout** EA is a trend-breakout system built on J. Welles Wilder's **Swing Index (SI)** and its running total, the **Accumulative Swing Index (ASI)**. Rather than breaking out on raw price — which is noisy, because a single thin, gappy, or small-bodied bar can poke a level without any real commitment behind it — the strategy trades breakouts of a smoothed "true price" line derived from each bar's genuine directional displacement.

Wilder's Swing Index scores every bar from the geometry of its open, close, prior close and true range, separating real displacement from wick noise. Summing SI bar-by-bar produces the ASI, a cumulative curve that behaves like a de-noised price. Wilder taught that when the ASI breaks a prior ASI extreme, it confirms a **genuine trend breakout** even when price alone looks ambiguous. This EA turns that principle into a fully mechanical, single-timeframe system with ATR-based risk control.

Core idea: Instead of asking "did price break the level?", the strategy asks "did the market's *real* accumulated conviction break its own recent range?" The ASI answers that question, filtering out the shallow pokes that trap naïve breakout traders.

How It Works

1. Building the Accumulative Swing Index (ASI)

On each newly-closed bar, the EA computes Wilder's Swing Index using the just-closed bar and the bar before it. The Swing Index blends three price relationships into a single signed score:

- **Directional move:** $(\text{Close} - \text{PrevClose})$ — where price settled versus the prior close.
- **Intrabar commitment:** $0.5 \times (\text{Close} - \text{Open})$ — how the body finished.
- **Carry-over gap:** $0.25 \times (\text{PrevClose} - \text{PrevOpen})$ — the momentum inherited from the previous bar.

This numerator is scaled by a range denominator R (chosen by whichever of the high/low distances dominates) and by K , the larger of the two prior-close distances. Flat or degenerate bars (near-zero range) contribute nothing. Each bar's SI is then added to a running total to form the ASI:

```
SI = 50 × (numerator / R) × K
ASI = ASI + SI           // running cumulative total
```

Note on the T constant: Wilder's original formula includes a limit-move scale factor T . Because this strategy only ever compares the ASI to its *own* history, T is a pure constant on the whole series and is fixed at $T = 1$ — this preserves the breakout geometry exactly while simplifying the calculation.

2. The Entry Signal — a Donchian Breakout on the ASI

The EA applies a Donchian-channel breakout not to price, but to the ASI's own recent range. It scans the previous `BreakoutLookback` ASI values (skipping the current one) to find the prior ASI high and low, then requires a **fresh N-bar extreme** plus a regime filter:

- **Long entry:** ASI prints a fresh `BreakoutLookback`-bar high *and* sits above its own EMA (an established up-regime).
- **Short entry:** ASI prints a fresh `BreakoutLookback`-bar low *and* sits below its own EMA (an established down-regime).

The EMA — of period `AsiTrendPeriod`, applied to the ASI itself — is the regime gate. It ensures the EA only takes a breakout in the direction the smoothed ASI is already trending, rejecting counter-trend spikes.

3. Risk: Stop-Loss and Take-Profit

Position risk is volatility-scaled using the Average True Range (ATR) of period `AtrPeriod`, measured at the just-closed bar:

```
stopDistance = AtrStopMult × ATR
tpDistance   = RewardRisk × stopDistance
```

- **Long:** SL = entry – stopDistance, TP = entry + tpDistance (entry at the Ask).
- **Short:** SL = entry + stopDistance, TP = entry – tpDistance (entry at the Bid).

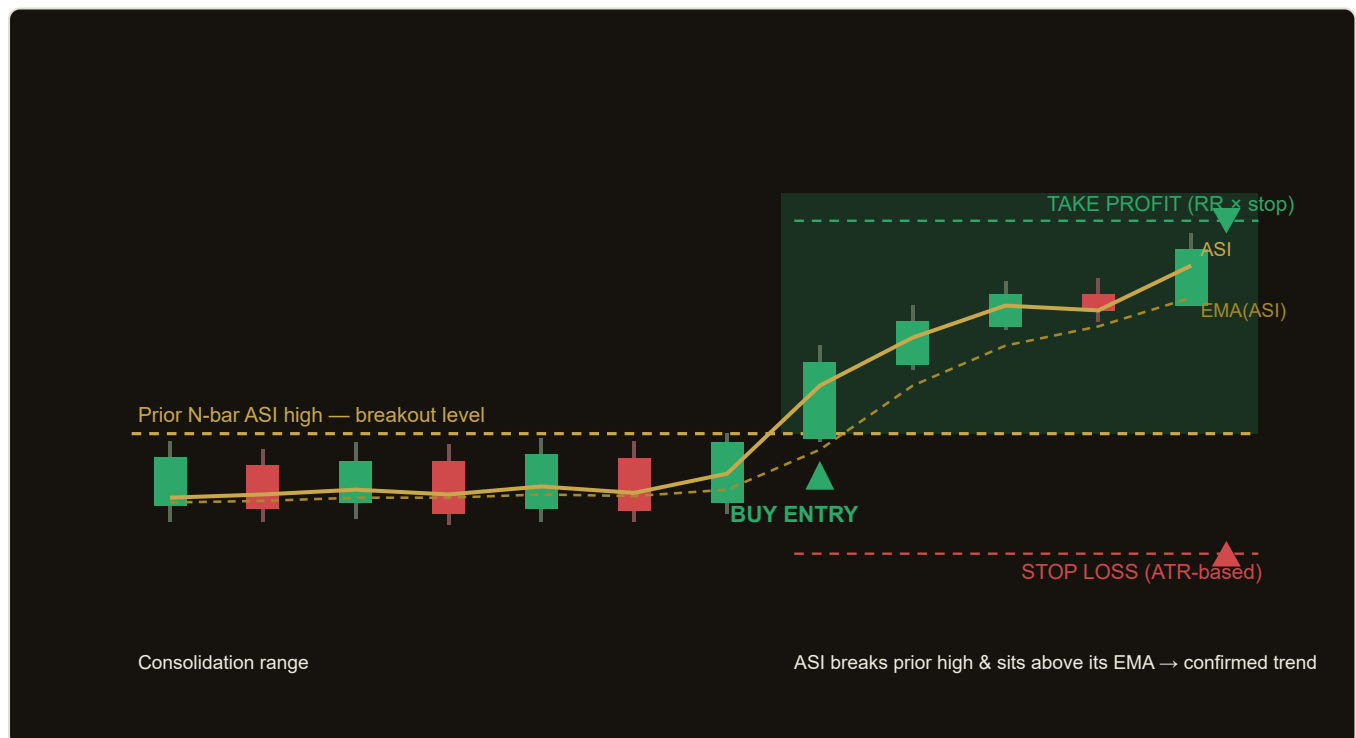
4. Trade Management & Exit

The EA holds a single position at a time and **never stacks** — while a trade is open, no new entries are considered and the fixed SL/TP does most of the work. There is one active management rule: an **opposite ASI breakout is a structural exit**. If a long is open and the ASI prints a fresh down-breakout (below its prior low and below its EMA), the position is closed immediately, and vice-versa for shorts. This lets the EA abandon a trade the moment the market's real conviction flips, ahead of the stop.

One bar, one decision: All logic runs once per newly-closed bar. The EA detects the close of the bar at shift 1, updates the ASI, and evaluates entries/exits on confirmed data only — no intrabar repainting.

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.

In the example, price and the ASI grind sideways in a range. As the ASI pushes to a fresh `BreakoutLookback` - bar high *and* lifts clear of its own EMA, the up-regime is confirmed and a **long** is opened. The stop sits one ATR-multiple below entry; the take-profit is placed at the reward-to-risk multiple of that distance. Had the ASI instead broken to a fresh low below its EMA while long, the position would have been closed early as a structural exit.

Parameters

Parameter	Default	Description
<code>BreakoutLookback</code>	<code>20</code>	Lookback in bars for the ASI Donchian breakout. A fresh N-bar ASI high/low is the trigger. Range 8–60, step 1.
<code>AsiTrendPeriod</code>	<code>10</code>	EMA period applied to the ASI itself. The ASI must be on the breakout side of this EMA — the regime filter. Range 3–40, step 1.
<code>AtrPeriod</code>	<code>14</code>	ATR period used to size the stop and target distances. Range 5–40, step 1.
<code>AtrStopMult</code>	<code>2.00</code>	Stop-loss distance as a multiple of ATR: <code>stop = AtrStopMult × ATR</code> . Range 0.50–5.00, step 0.25.
<code>RewardRisk</code>	<code>1.80</code>	Take-profit distance as a multiple of the stop distance: <code>tp = RewardRisk × stop</code> . Range 1.00–4.00, step 0.10.
<code>Lots</code>	<code>0.10</code>	Fixed position size in lots. Range 0.01–1.00, step 0.05.
<code>Magic</code>	<code>1001</code>	Magic number identifying this EA's positions so trade management only touches its own orders.

Recommended Settings

The defaults are a balanced starting point for major FX pairs on intraday-to-swing timeframes. Tune to the instrument's volatility and your risk tolerance before committing capital.

SYMBOLS & TIMEFRAME

- **Symbols:** Liquid majors with clean trends (e.g. EURUSD, GBPUSD, USDJPY, XAUUSD).
- **Timeframe:** H1 to H4. Higher timeframes produce fewer, cleaner ASI breakouts; lower timeframes increase signal count and noise.

TUNING GUIDANCE

- **Fewer, higher-quality signals:** raise `BreakoutLookback` (e.g. 30–40) and `AsiTrendPeriod` (e.g. 15–20) to demand a stronger, more established regime.
- **More responsive entries:** lower `BreakoutLookback` toward 10–14 — expect more trades and more false breaks.
- **Volatility fit:** widen `AtrStopMult` on choppier instruments to avoid premature stop-outs; tighten it on smooth trenders.
- **Payoff:** a `RewardRisk` of 1.5–2.5 suits trend-following; higher ratios lower the hit rate but let winners run.

Tip: The ASI is a cumulative series, so it needs warm-up. Give the EA at least `BreakoutLookback` + `AsiTrendPeriod` closed bars of history before expecting valid signals, and always validate any parameter set in the MT5 Strategy Tester before going live.

Example configuration — EURUSD H1 (conservative)

`BreakoutLookback` = 30, `AsiTrendPeriod` = 15, `AtrPeriod` = 14, `AtrStopMult` = 2.50, `RewardRisk` = 2.00, `Lots` = 0.10.
This favours fewer but more strongly-confirmed breakouts with a wider volatility stop and a 2:1 payoff target.

How to Install on MetaTrader 5

- 1 Copy `AccumulativeSwingIndexBreakout.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

Verify before live use: Run the EA in the Strategy Tester across several months of history for your chosen symbol and timeframe, then forward-test on a demo account. Confirm that ATR-based stops and the ASI opposite-breakout exit behave as expected before allocating real capital.

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.