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Intraday Momentum Index Reversal

Expert Advisor Documentation

PLATFORM	TYPE	TIMEFRAME	WEBSITE
MetaTrader 5 (MT5)	Mean Reversion	M15 – H1 (Intraday)	www.algobot.live

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Overview

The **Intraday Momentum Index Reversal** EA is a counter-trend, mean-reversion strategy built around Tushar Chande's **Intraday Momentum Index (IMI)**. Unlike a standard RSI, which measures close-to-close change, the IMI is an oscillator built from candle **bodies**: it sums the up-body ranges (Close − Open on bullish bars) against the down-body ranges (Open − Close on bearish bars). By reading intrabar conviction rather than settlement drift, the IMI's extremes flag genuine buying or selling *exhaustion* that a conventional RSI often misses.

The EA does not blindly fade every IMI extreme. Instead it demands three things to line up before entering: price must be stretched on the correct side of a slow trend mean, the IMI must have actually *turned back out* of its extreme zone, and the reversal candle must confirm with a body in the trade's direction. Exits are fully mechanical — a fixed ATR-based stop loss and take profit manage every position, and only one position per magic number is held at any time.

Why candle bodies? The IMI treats a wide-range candle that closes near its open as neutral, while a decisive body counts strongly. This makes its overbought/oversold readings a cleaner proxy for conviction-driven exhaustion — exactly the condition a reversion trade wants to fade.

How It Works

On every tick the EA checks whether a new bar has closed; all logic runs **once per closed bar**. It maintains a rolling window of recent bars and closing prices, then evaluates the indicator suite on the most recently completed bar.

Indicators Used

- **Intraday Momentum Index (IMI):** computed over `ImiPeriod` bars from candle bodies. The value ranges 0–100; flat bodies return a neutral 50.
- **Trend EMA:** a slow exponential moving average over `TrendEmaPeriod` closes, acting as the mean-reversion baseline that defines which side price is stretched from.
- **Average True Range (ATR):** over `AtrPeriod` bars, used purely to size the stop loss and take profit in volatility-adjusted terms.

Entry Logic

The strategy fades exhaustion only when it aligns with a stretch away from the trend mean and a confirmed turn in the IMI. It reads the IMI on the last closed bar (`imiNow`) and the bar before it (`imiPrev`):

LONG (BUY THE WASHED-OUT DIP)

- Price closes **below** the trend EMA (stretched to the downside), and
- The IMI was at or below the `Oversold` level on the prior bar and has now crossed back **above** it (`imiPrev ≤ Oversold` and `imiNow > Oversold`), and
- The confirming bar is **bullish** (Close > Open).

SHORT (SELL THE BLOWN-OFF RALLY)

- Price closes **above** the trend EMA (stretched to the upside), and
- The IMI was at or above the `Overbought` level on the prior bar and has now crossed back **below** it (`imiPrev ≥ Overbought` and `imiNow < Overbought`), and
- The confirming bar is **bearish** (Close < Open).

> **Long entry in words**
>
> Price has slid beneath the slow EMA, the IMI has bottomed in oversold territory and just ticked back above the threshold, and the latest candle closed green. The EA reads this as selling exhaustion into support and buys the reversion, expecting a snap back toward the mean.

Exit Logic (Stop Loss & Take Profit)

There is no discretionary exit and no trailing logic — each position carries a fixed stop and target set at entry from the current ATR:

```
Long:   SL = entry − StopAtrMult × ATR      TP = entry + TpAtrMult × ATR
Short:  SL = entry + StopAtrMult × ATR      TP = entry − TpAtrMult × ATR
```

With the defaults (`StopAtrMult = 2.0`, `TpAtrMult = 3.0`) the target is 1.5× the stop distance, giving a reward-to-risk ratio of roughly 1.5:1 before spread and slippage. Because stops and targets scale with ATR, the EA automatically widens in volatile conditions and tightens in quiet ones.

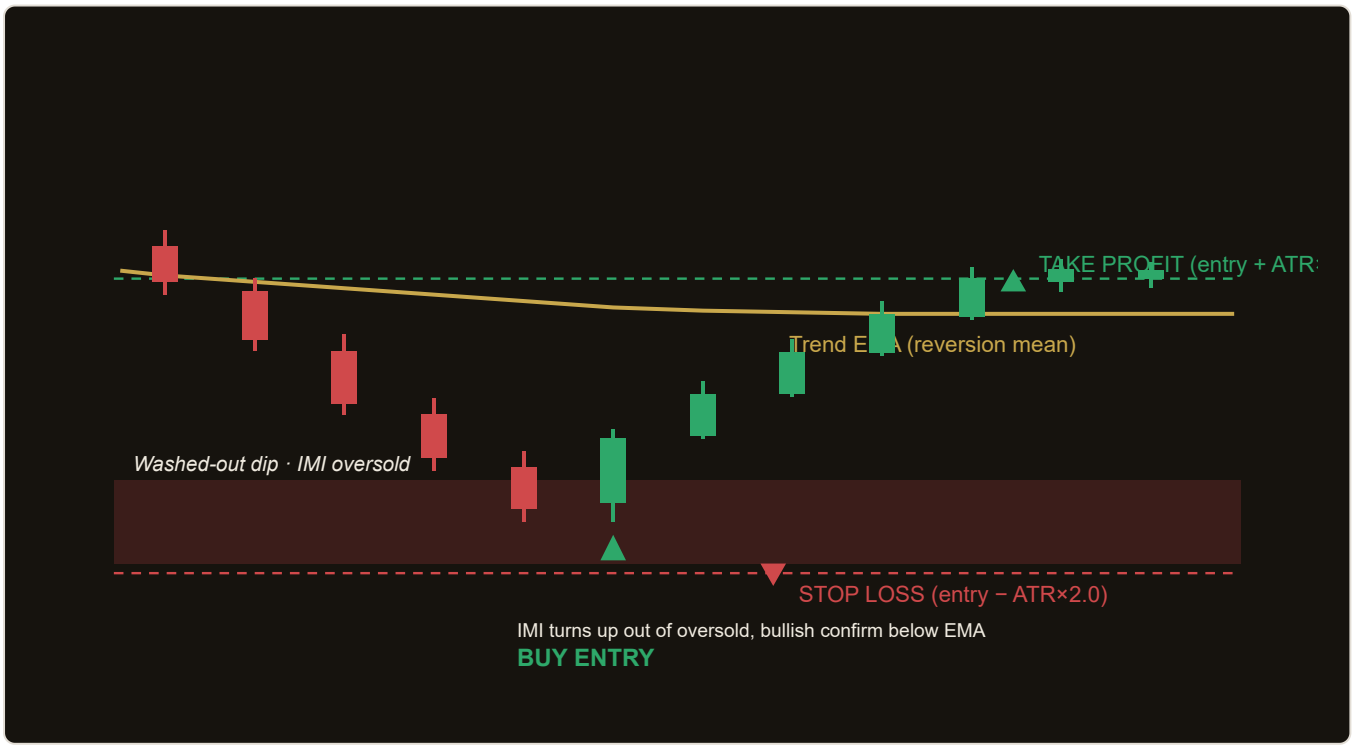
Position & Order Management

- **One position per magic:** a new signal is ignored while a position with the same magic number is already open — the SL/TP manage the exit.
- **Bar-close execution:** signals are evaluated only on completed bars, avoiding intrabar flicker.
- **Fixed lot sizing:** every trade uses the `Lots` volume.
- **Entry prices:** longs enter at the Ask, shorts at the Bid.

> **Note on the MQL5 build:** the MT5 version reads its signal off the last *closed* bar (shift 1) using the platform's native `iMA` and `iATR` handles, while computing the IMI directly from `iClose` / `iOpen`. It mirrors the C# reference logic bar-for-bar.

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
ImiPeriod	`14`	IMI lookback in bars (bodies summed). Range 5–40, step 1. Shorter reacts faster; longer smooths.
Oversold	`30`	IMI oversold threshold. A long requires the IMI to cross back above this level. Range 10–45, step 5.
Overbought	`70`	IMI overbought threshold. A short requires the IMI to cross back below this level. Range 55–90, step 5.
TrendEmaPeriod	`100`	Slow trend EMA period defining the reversion mean. Range 20–300, step 10.
AtrPeriod	`14`	ATR period used to size the stop and target. Range 5–30, step 1.
StopAtrMult	`2.0`	Stop-loss distance as a multiple of ATR. Range 0.5–5.0, step 0.5.
TpAtrMult	`3.0`	Take-profit distance as a multiple of ATR. Range 0.5–6.0, step 0.5.
Lots	`0.10`	Fixed trade volume in lots. Range 0.01–1.0, step 0.05.
Magic	`1001`	Magic number identifying this EA's positions; enforces the one-position-per-magic rule.

Recommended Settings

The defaults are a balanced intraday starting point. Consider the following when tuning:

- **Timeframe:** The IMI is an intraday tool by design — `M15` to `H1` suits it well. Lower timeframes generate more signals but more noise; test before deploying.
- **Symbol:** Best on liquid, mean-reverting instruments (major FX pairs, index CFDs) where over-extensions tend to snap back rather than trend indefinitely.
- **Thresholds:** Tighter extremes (`Oversold 20 / Overbought 80`) produce fewer but higher-conviction reversals; the defaults of 30/70 trade more frequently.
- **Trend EMA:** A longer `TrendEmaPeriod` keeps the mean stable and filters marginal setups; a shorter one lets the EA fade smaller dislocations.
- **Risk multiples:** Keep `TpAtrMult` comfortably above `StopAtrMult` to preserve a favourable reward-to-risk profile.

> **Tip:** Always run the MT5 Strategy Tester across several years and market regimes, and forward-test on a demo account before committing real capital. Mean-reversion strategies are most vulnerable during strong, sustained trends — the trend-EMA filter helps, but no filter is perfect.

How to Install on MetaTrader 5

1. Copy `IntradayMomentumIndexReversal.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

Risk Warning

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