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Trend Intensity Index Breakout

Expert Advisor Documentation

PLATFORM	TYPE	TIMEFRAME	WEBSITE
MetaTrader 5 (MT5)	Trend-Following Breakout	H1 / H4	www.algobot.live

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Overview

Trend Intensity Index Breakout is a trend-following breakout Expert Advisor built around the **Trend Intensity Index (TII)**, an indicator introduced by M.H. Pee. Where most trend filters ask *"which way is the average pointing?"*, TII asks a sharper question: *"of the recent price action, how one-sided is it around its own mean?"*

Over the last `TiiPeriod` bars the EA measures each close's deviation from a `MaPeriod` simple moving average (the SMA is recomputed as of each individual bar). Deviations above the mean are summed into a positive pool, deviations below the mean into a negative pool, and the index is:

```
TII = 100 × sumAbove / (sumAbove + sumBelow)      (range 0 .. 100)
```

A reading near **50** means price mass is evenly split around the mean — chop, with no conviction. A push toward **100** means almost all recent action sits *above* the mean (an intense, one-directional up-move); a collapse toward **0** means the opposite. TII is therefore a pure "how committed is this trend" gauge, independent of raw slope.

The EA trades the moment that conviction **ignites** — a fresh cross of the intensity band, confirmed by price sitting on the correct side of its mean. Risk is capped by a hard ATR-based stop and target, and every

position is additionally protected by a trend-neutralisation exit that closes early once the intensity that justified entry has drained away.

> **What makes it different:** TII is used by no sibling Algobot strategy. It reacts to the *distribution* of price around its mean rather than the direction of a moving average, so it can distinguish a genuine, committed breakout from a shallow drift that merely happens to be pointing the right way.

How It Works

The Trend Intensity Index

For each bar in the `TiiPeriod` window, the EA computes the deviation of that bar's close from its own `MaPeriod` SMA. Positive deviations (close above the mean) accumulate into `sumAbove`; negative deviations accumulate (as magnitudes) into `sumBelow`. The index is the share of total deviation that sits above the mean, scaled to 0–100. A perfectly flat window returns the neutral value 50.

The Symmetric Intensity Band

The upper band is set directly by `UpperLevel` (default 65). The lower band is derived as its mirror image, `100 - UpperLevel` (default 35), so the long and short legs are perfectly symmetric around the 50 mid-line.

Entry Logic

The EA acts **once per freshly closed bar**. It reads TII at the latest completed bar (`tiiNow`) and one bar earlier (`tiiPrev`) so it can detect a *fresh* cross of the band, and confirms with the bar's close relative to the SMA:

- **Bull ignition (BUY):** TII crosses *up* through `UpperLevel` (`tiiPrev ≤ UpperLevel` and `tiiNow > UpperLevel`) *and* the close is above the SMA.
- **Bear ignition (SELL):** TII crosses *down* through `LowerLevel` (`tiiPrev ≥ LowerLevel` and `tiiNow < LowerLevel`) *and* the close is below the SMA.

Only fresh crossings trigger — a market that is already deep inside the band produces no new signal, so the EA enters at the ignition point, not partway through a move.

Exit Logic

Exits are two-layered and symmetric:

- **Hard ATR stop & target:** every trade is submitted with a stop-loss at `AtrMultSl × ATR` and a take-profit at `AtrMultTp × ATR` from the entry price, so risk and reward are volatility-scaled on every fill.
- **Trend-neutralisation exit:** the position is closed early once TII crosses back through the **50 mid-line** against the trade — a long is neutralised when `tiiPrev ≥ 50` and `tiiNow < 50`; a short when `tiiPrev ≤`

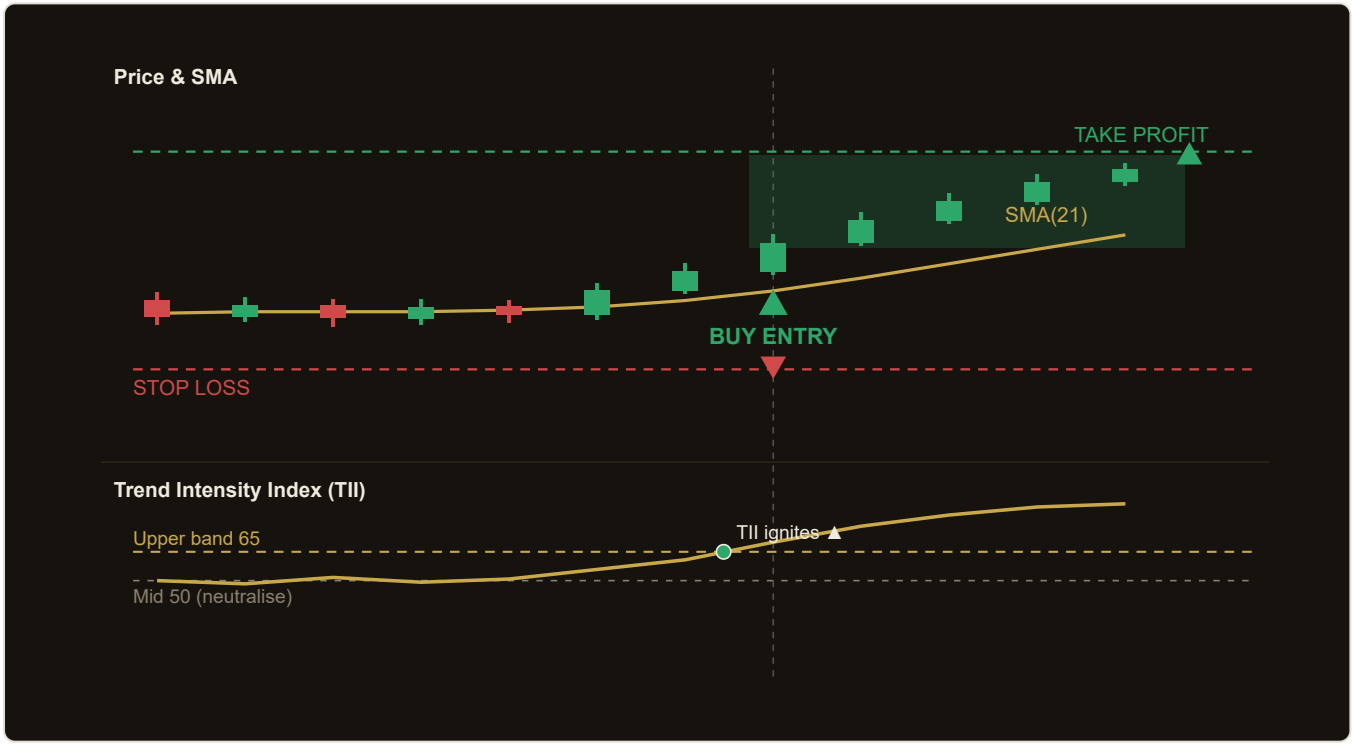
`50` and `tiiNow > 50`. When the intensity that justified entry is gone, the EA does not wait for the stop.

Trade & Risk Management

- **One position per Magic** — the EA holds at most a single open position at a time; existing positions are managed (neutralisation check) before any new entry is considered.
- **Spread filter** — entries are skipped when the current spread exceeds `MaxSpreadPoints` (set to 0 to disable), keeping fills realistic.
- **ATR sizing** — ATR is read from the latest completed bar, so stops and targets adapt to prevailing volatility.
- **Primary-timeframe only** — every calculation is derived from primary-timeframe bars, so the EA runs on whatever timeframe the chart or backtest selects.

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 illustration, price chops sideways around its mean while TII hovers near 50 — no conviction, no trade. As buyers take over, TII climbs and **crosses up through the upper band (65)** just as the close pushes above the SMA. That fresh ignition triggers the **BUY entry**, with an ATR stop below and an ATR take-profit above. Price runs into the take-profit; had momentum instead faded, a TII drop back below the 50 mid-line would have neutralised the trade early.

Parameters

Parameter	Default	Description
MaPeriod	`21`	Period of the simple moving average each close is measured against. Range 5–80, step 1.
TiiPeriod	`30`	Window of bars over which the intensity (above/below-mean deviations) is summed. Range 8–90, step 2.
UpperLevel	`65.0`	Upper intensity band. The lower band is its mirror, `100 - UpperLevel`. Range 52.0–90.0, step 1.0.
AtrPeriod	`14`	ATR period used to size the stop-loss and take-profit. Range 5–40, step 1.
AtrMultSl	`2.0`	ATR multiple for the stop-loss distance. Range 0.5–6.0, step 0.1.
AtrMultTp	`3.0`	ATR multiple for the take-profit distance. Range 0.5–10.0, step 0.1.
MaxSpreadPoints	`30`	Maximum allowed spread (in points) for a new entry. Set to 0 to disable the spread filter. Range 0–200, step 5.
Lots	`0.10`	Fixed trade volume in lots. Range 0.01–1.0, step 0.05.
Magic	`5127`	Magic number identifying this EA's positions. One position is held per magic number.

> **Tip — the mirror band:** you only set `UpperLevel`; the short-side band is computed automatically as `100 - UpperLevel`. Raising `UpperLevel` (e.g. to 70–75) demands stronger one-sided conviction before entry — fewer but higher-quality signals. Lowering it toward 55–60 makes the EA more responsive but more prone to false ignitions in choppy markets.

Recommended Settings

The strategy is designed for the **primary chart timeframe** and works well on liquid instruments. Suggested starting points:

- **Symbols:** liquid FX majors such as EURUSD or GBPUSD, or XAUUSD (gold).
- **Timeframe:** H1 or H4 — long enough for trends to develop conviction, short enough to catch ignitions early.
- **Core defaults:** `MaPeriod = 21`, `TiiPeriod = 30`, `UpperLevel = 65` — a balanced starting point for the intensity engine.

- **Risk sizing:** `AtrPeriod = 14`, `AtrMultSl = 2.0`, `AtrMultTp = 3.0` gives a 1:1.5 risk/reward baseline; tune to the instrument's volatility.
- **Spread filter:** keep `MaxSpreadPoints` tight (e.g. 20–30) on majors; widen it for gold or during high-volatility sessions.

Example configuration — EURUSD H1

`MaPeriod=21, TiiPeriod=30, UpperLevel=65, AtrPeriod=14, AtrMultSl=2.0, AtrMultTp=3.0, MaxSpreadPoints=25, Lots=0.10`

A conservative all-round baseline: the EA waits for a genuine intensity ignition above 65 (or below 35) with price confirming on the correct side of the mean, then rides the move with a 2×ATR stop and 3×ATR target, exiting early if TII collapses back through 50.

Always backtest & forward-test first. Optimise `MaPeriod`, `TiiPeriod` and `UpperLevel` on your chosen symbol and timeframe before committing real capital, and validate on out-of-sample data. Parameters that look ideal in-sample can degrade sharply on unseen markets.

How to Install on MetaTrader 5

1. Copy `TrendIntensityIndexBreakout.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 evaluates its logic once per freshly closed bar, so signals are confirmed on completed candles rather than intra-bar ticks. Leave the chart and terminal running for uninterrupted operation.

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.