

Donchian Regime Breakout

Expert Advisor Documentation

PLATFORM

MetaTrader 5 (MT5)

TYPE

Trend-Following Breakout

TIMEFRAME

H1 – H4

WEBSITE

www.algobot.live

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Overview

Donchian Regime Breakout is a trend-following channel breakout system with a built-in regime filter. A raw Donchian breakout — buying the highest high or selling the lowest low of the last N bars — is a classic idea, but on its own it fires constantly inside sideways ranges, so the majority of those breakouts fail. This strategy keeps the Donchian trigger but only acts on breakouts that *agree with the prevailing trend* and that *carry genuine conviction*.

Three conditions must line up before a trade is taken. First, a long trend EMA must be sloping in the direction of the trade and price must sit on the correct side of it (the **regime filter**). Second, the just-completed bar must **close** beyond the Donchian channel built from the bars behind it (the **breakout trigger**). Third, that close must clear the channel edge by a volatility-scaled margin (the **conviction gate**). Counter-trend breakouts, flat-market breakouts, and marginal pokes over the band are all ignored.

Risk is handled with a fixed ATR-based stop, an ATR-multiple take-profit, a strict one-position-per-magic rule (no pyramiding), and an optional chandelier-style ATR trailing stop that only ever tightens to lock in an open runner. The strategy runs on a single timeframe — whichever chart it is attached to.

How It Works

The strategy evaluates **once per completed bar**. On each new bar it appends the latest completed candle to its rolling history and, once enough bars are available, checks the following logic in order.

1. Regime Filter (the edge)

A long-period trend EMA (default 100) defines the market regime. The slope is measured by comparing the EMA now against the EMA `EmaSlopeLookback` bars ago:

- **Up-regime (longs only):** the EMA is rising *and* the signal-bar close is above it.
- **Down-regime (shorts only):** the EMA is falling *and* the signal-bar close is below it.
- **Flat / counter-trend:** if neither condition holds, no trade is considered — the breakout is ignored entirely.

2. Breakout Trigger

The Donchian channel is built from the `ChannelPeriod` bars *behind* the signal bar — the highest high and lowest low of those bars, explicitly excluding the signal bar itself. A breakout requires the signal bar to **close** beyond the channel edge, not merely touch it intrabar.

Why close-based? Intrabar touches of a channel edge are extremely common and mostly noise. Requiring a *close* beyond the band filters out wicks and fake-outs, so the system only reacts to breaks the market was willing to hold into the bar close.

3. Conviction Gate

The close must clear the channel edge by at least `ConvictionAtrMult × ATR`. Because the margin is expressed in ATR, it self-scales with volatility: wider in fast markets, tighter in quiet ones. This skips marginal pokes just over the band that tend to reverse.

```
conviction = ConvictionAtrMult * ATR
brokeUp    = close > upperChannel + conviction // long (needs up-regime)
brokeDown  = close < lowerChannel - conviction // short (needs down-regime)
```

Entry & Order Placement

When an aligned, conviction-gated breakout occurs, one market order is sent:

- **Long:** buy at the ask; stop-loss = `Ask - SlAtrMult × ATR`; take-profit = `Ask + TpAtrMult × ATR`.
- **Short:** sell at the bid; stop-loss = `Bid + SlAtrMult × ATR`; take-profit = `Bid - TpAtrMult × ATR`.

With the defaults (SL $2 \times \text{ATR}$, TP $4 \times \text{ATR}$) the target sits at twice the initial stop distance, giving a nominal 2:1 reward-to-risk before any trailing takes effect.

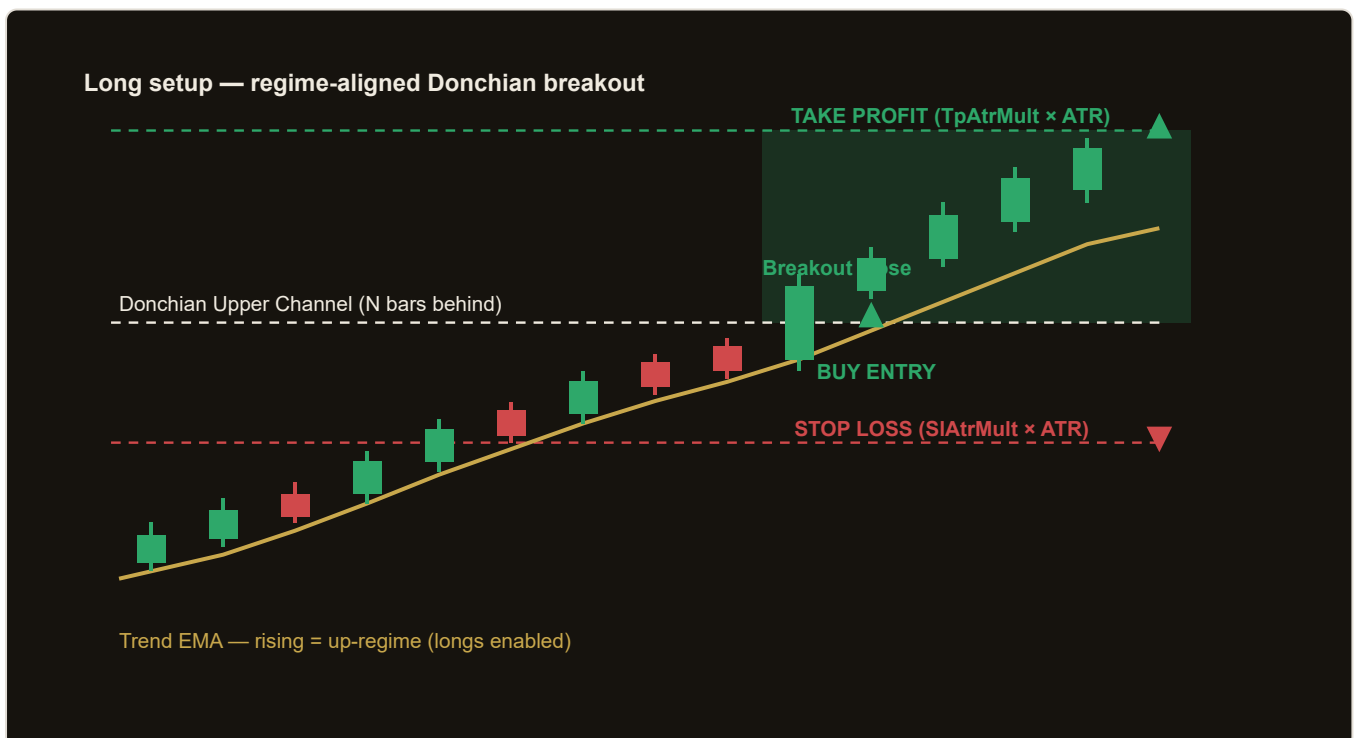
Exit Logic & Trade Management

- **Fixed ATR stop & target:** every trade opens with a hard stop-loss and take-profit set from ATR at entry.
- **Chandelier trailing stop:** if `TrailAtrMult > 0`, an open position's stop is pulled toward price by `TrailAtrMult × ATR`. The stop *only ever tightens* in the trade's favour — it locks in open profit and never widens risk. Setting `TrailAtrMult = 0` disables trailing entirely.
- **One position per magic:** while a position tagged with the strategy's magic number is open, no new entries are taken — there is no pyramiding. Management (trailing) runs, and the bar returns early.

Bar indexing note (MT5 port). In Algot's C# engine, `Bar(sym, tf, 0)` returns the most recent *completed* bar. In MQL5, once a new bar opens, that same "signal bar" is at shift 1. The MQL5 port therefore shifts every signal, channel, and indicator read by +1, so both implementations act on identical data. The Donchian channel spans shifts $2 \dots \text{ChannelPeriod} + 1$.

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
ChannelPeriod	20	Donchian window — the number of completed bars behind the signal bar used to build the breakout channel (highest high / lowest low). Range 10–60, step 5.
TrendEmaPeriod	100	Period of the trend EMA that defines the regime filter. Range 40–200, step 10.
EmaSlopeLookback	5	How many bars back the EMA slope is measured over to confirm trend direction. Range 1–30, step 1.
AtrPeriod	14	ATR window used for the conviction gate, stop, target and trailing distance. Range 7–40, step 1.
ConvictionAtrMult	0.10	The close must clear the channel edge by this × ATR to count as a genuine breakout. Range 0.0–1.0, step 0.05.
SIatrMult	2.0	Initial stop-loss distance = this × ATR from entry. Range 0.5–5.0, step 0.5.
TpAtrMult	4.0	Take-profit distance = this × ATR from entry. Range 1.0–10.0, step 0.5.
TrailAtrMult	2.5	Chandelier trailing-stop distance = this × ATR. Set to 0 to disable trailing. Range 0.0–6.0, step 0.5.
Lots	0.10	Fixed trade volume in lots. Range 0.01–1.0, step 0.01.
Magic	5150207	Magic number identifying this EA's positions; enables the one-position-per-magic (no pyramiding) rule.

Recommended Settings

Being a trend-following breakout system, the strategy performs best on instruments that trend and on timeframes with enough bars per swing to let the regime filter and channel breathe.

- **Timeframe:** H1 to H4 is a sensible starting point. Lower timeframes generate more signals but more noise; higher timeframes give cleaner regimes and fewer trades.
- **Instruments:** liquid, trend-prone markets — major FX pairs, indices, and metals such as XAU/USD.
- **Regime vs. reactivity:** a larger `TrendEmaPeriod` and `EmaSlopeLookback` demand a stronger, more established trend before trading; smaller values react sooner but admit more marginal setups.
- **Conviction:** raise `ConvictionAtrMult` in choppy conditions to demand a firmer break; lower it to catch earlier, softer breakouts.

- **Trailing:** keep `TrailAtrMult` around 2.5–3.0 to ride trends; reduce it to bank profit faster, or set 0 to rely purely on the fixed target.

Example — H1 gold (XAU/USD), trend-riding

ChannelPeriod 20, TrendEmaPeriod 120, EmaSlopeLookback 8, AtrPeriod 14, ConvictionAtrMult 0.15, SlAtrMult 2.0, TpAtrMult 4.0, TrailAtrMult 3.0, Lots 0.10. Demands a well-established trend, a firm break above the channel, and lets the chandelier trail carry winners while the 2×ATR stop caps risk.

Always test first. Backtest and forward-test any parameter set on your own broker's data and spreads before risking live capital. Optimal values differ by instrument, timeframe, and market conditions.

How to Install on MetaTrader 5

- 1 Copy `DonchianRegimeBreakout.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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