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Donchian Midline Reversion

Expert Advisor Documentation

PLATFORM	TYPE	TIMEFRAME	WEBSITE
MetaTrader 5 (MT5)	Mean Reversion (Range Fade)	H1 (M30–H4)	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

Donchian Midline Reversion is a range-trading mean-reversion Expert Advisor that *fades failed breakouts* of a Donchian channel. The channel — defined by the highest high and lowest low over a lookback window — marks the boundaries of the recent trading range, and its midpoint is treated as the natural reversion target.

The core idea is simple: when the most recently closed bar spikes *beyond* an outer band but then *closes back inside* the channel, the breakout has failed. If a momentum oscillator (RSI) confirms that price is stretched to an extreme at the same moment, the odds favour a snap-back toward the middle of the range. The EA enters against the failed break and targets the channel midline.

A minimum channel-width filter (measured in ATR units) keeps the strategy out of dead, compressed conditions where mean-reversion signals whipsaw. Long and short logic are fully symmetric, so the EA trades rejections at both the lower and upper bands.

> **Design intent.** This is a counter-trend, range-bound tool. It performs best in sideways, balanced markets and is deliberately filtered to stand aside when the range is too narrow to offer a worthwhile move back to the midline.

How It Works

Bar-by-bar processing

The EA acts **once per completed bar**. On each new bar it evaluates the previous, just-closed bar (the *signal bar*) and never re-evaluates ticks within a forming bar. This keeps behaviour deterministic and consistent between the C# research engine and the compiled MT5 build.

Building the Donchian channel

The channel is measured from the `ChannelPeriod` bars *immediately before* the signal bar — not including the signal bar itself. This is deliberate: it prevents the signal bar's own pierce from stretching the band it is supposed to break.

- **Upper band** — the highest high over the lookback window.
- **Lower band** — the lowest low over the lookback window.
- **Midline** — `(upper + lower) / 2`, the take-profit target.

Volatility & width filter

The Average True Range (`AtrPeriod`) measures current volatility. The EA requires the raw channel width to be at least `MinWidthAtr × ATR`. If the range is narrower than this, the market is considered too compressed to trade and the signal is skipped.

Entry logic

With a valid, wide-enough channel and a positive ATR, the EA checks the signal bar against the bands and RSI (`RsiPeriod`). The overbought threshold is derived symmetrically as `100 − RsiOversold`.

- **Long (buy)** — the signal bar's low pierced *below* the lower band, its close came back *above* the lower band, and RSI is below `RsiOversold`.
- **Short (sell)** — the signal bar's high pierced *above* the upper band, its close came back *below* the upper band, and RSI is above the overbought level.

> **Example — a long setup**
>
> With `ChannelPeriod = 20` and `RsiOversold = 30`, a bar dips below the 20-bar low, then rallies to close back inside the channel, and RSI reads 27. All three long conditions are satisfied, so the EA buys at the Ask, places its stop just below the rejected low, and targets the channel midline.

Stops, targets & order placement

- **Entry price** — Ask for longs, Bid for shorts.

- **Stop loss** — placed just beyond the rejected extreme, buffered by `SlAtrMult × ATR` (below the signal low for longs, above the signal high for shorts).
- **Take profit** — the channel midline.
- **Sanity check** — the trade is only sent if the target sits on the profitable side of entry and the stop on the protective side (i.e. there is genuine room toward the midline). Otherwise the signal is discarded.

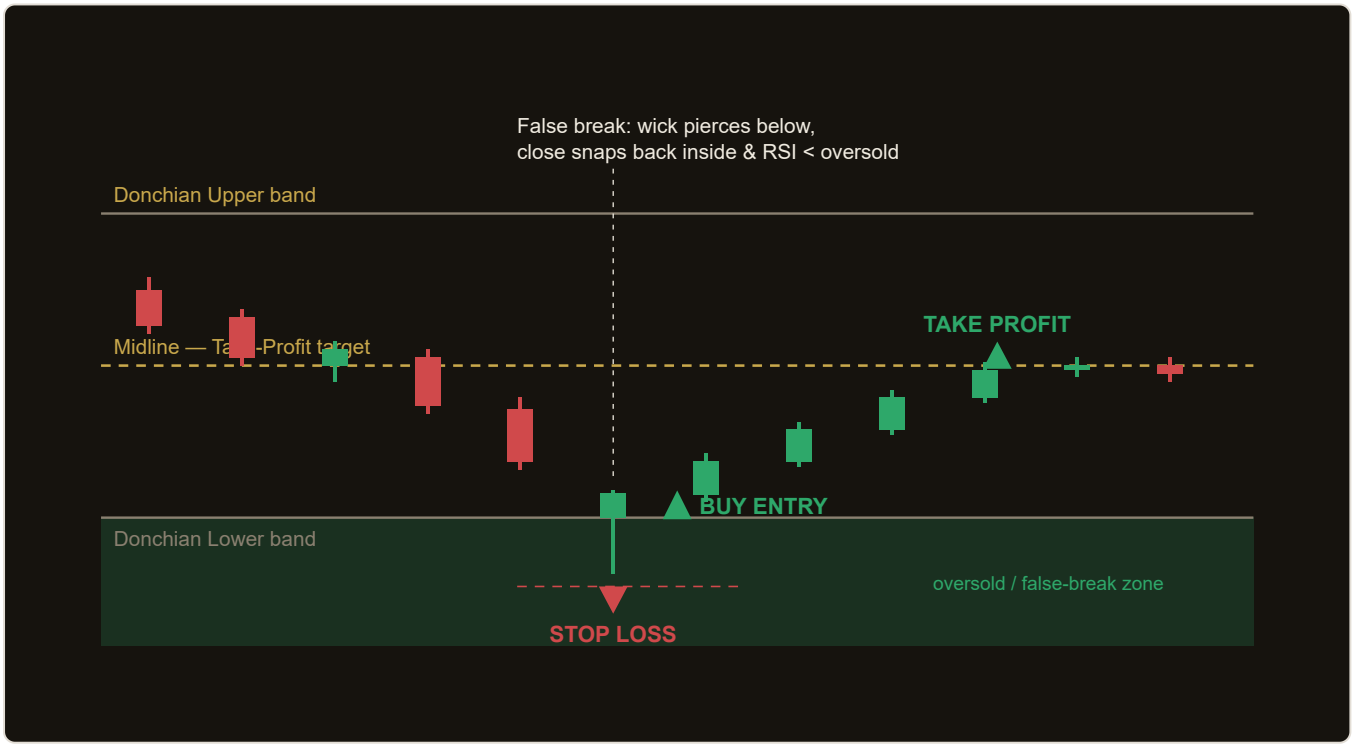
Position management

The EA holds **one position per magic number at a time**. While a trade is open, no new signals are taken; the position is managed entirely by its attached stop-loss and take-profit levels. There is no averaging, grid, or martingale behaviour.

> **Symmetry.** Long and short paths are mirror images of one another. Every filter, buffer, and target applies identically at both bands, so the EA has no directional bias.

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 channel lookback in bars (highest high / lowest low). Range 10–60, step 5. Larger values define a wider, slower range.
RsiPeriod	`14`	RSI averaging period used to confirm an oversold/overbought extreme. Range 7–28, step 1.
RsiOversold	`30`	Oversold threshold for long signals. The overbought threshold for shorts is derived symmetrically as `100 - RsiOversold`. Range 15–40, step 5.
AtrPeriod	`14`	Average True Range period used for the width filter and the stop-loss buffer. Range 7–28, step 1.
MinWidthAtr	`2.0`	Minimum channel width in ATR units. Signals are skipped when `(upper - lower) < MinWidthAtr × ATR`. Range 1.0–5.0, step 0.5.
SlAtrMult	`1.0`	Stop-loss buffer beyond the rejected extreme, in ATR units. Range 0.5–3.0, step 0.25.
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. One position per magic is held at a time.

> **Tuning tip.** Raise `MinWidthAtr` to demand a wider range (fewer but higher-quality reversions) and lower it to trade more actively in quieter markets. Tighten `RsiOversold` toward 20 for stricter momentum confirmation.

Recommended Settings

The strategy is built for balanced, range-bound instruments and timeframes where mean reversion is a persistent characteristic.

- **Symbols** — range-prone FX pairs such as EUR/USD, EUR/GBP, EUR/CHF, or AUD/NZD. Avoid strongly trending or thin, gappy instruments.
- **Timeframe** — H1 as the primary timeframe; M30 to H4 are reasonable alternatives. Lower timeframes increase noise and false rejections.
- **Sessions** — favours quieter, consolidating sessions; be cautious around high-impact news that can drive sustained breakouts.

- **Risk** — start with the default `Lots = 0.10` (or lower) and size positions to your account. The fixed-lot model does not auto-scale to balance.

> **Regime awareness.** As a counter-trend system, this EA can suffer repeated stops during strong, one-directional trends where "failed" breakouts keep succeeding. Pair it with instruments and periods that tend to range, and review the width filter if you see it fading persistent trends.

How to Install on MetaTrader 5

1. Copy `DonchianMidlineReversion.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

> **Before going live.** Run the EA in the MT5 Strategy Tester and on a demo account first. Confirm that the width filter, RSI thresholds, and stop buffer behave as expected on your chosen symbol before committing real capital.

Risk Warning

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