

Keltner Breakout Trend Rider

Expert Advisor Documentation

PLATFORM

MetaTrader 5
(MT5)

TYPE

Volatility Breakout / Trend
Following

TIMEFRAME

H1 (symbol & timeframe
agnostic)

WEBSITE

www.algotbot.live

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Overview

Keltner Breakout Trend Rider is a volatility-channel, trend-following breakout Expert Advisor for MetaTrader 5. It constructs a Keltner channel around an exponential moving average (EMA) basis, using a half-width of `ChannelMult × ATR`. When price **closes** beyond the channel for the **first time** — a fresh cross of the band — and the EMA is simultaneously sloping in the same direction, the strategy interprets this as a genuine momentum thrust and rides the trend in that direction.

The slope condition acts as a regime filter that keeps the EA out of directionless chop, where breakouts most often fail. Long and short logic are fully symmetric. Every position is protected by an ATR-based stop-loss and take-profit, a Chandelier-style ATR trailing stop that only ratchets in the trade's favour, and an opposite-band breakout that serves as an early discretionary exit. Only one position per magic number is permitted — there is no averaging, grid, or martingale — so drawdown stays bounded.

Design philosophy. The EA exposes only a handful of economically-meaningful parameters (channel width, stop / target / trail multiples, EMA basis, slope window). There is no hardcoded symbol, session, or time filter — a deliberate overfitting guard that lets the strategy run on whatever symbol and single timeframe the backtest or live chart selects.

How It Works

The Keltner Channel

On each completed bar, the EA computes two components on the just-closed bar:

- **EMA basis** — an exponential moving average of closing prices over `EmaPeriod` bars. This is the centreline of the channel.
- **ATR half-width** — the Average True Range over `AtrPeriod` bars, scaled by `ChannelMult`. This adapts the channel width to current volatility.

```
upper band = EMA + ChannelMult × ATR  
lower band = EMA - ChannelMult × ATR
```

Entry Logic

The strategy is strictly a **bar-close** system: it evaluates once per newly completed bar and never acts intrabar. Two conditions must align for an entry:

- **Fresh band cross.** The previous bar's close was inside the channel and the current bar's close is beyond it. A *crossUp* requires `prevClose ≤ prevUpper` and `close > upper`; a *crossDown* requires `prevClose ≥ prevLower` and `close < lower`. Requiring a fresh cross avoids re-entering on every bar that merely remains outside the band.
- **Slope regime filter.** The EMA must be sloping in the trade direction. The slope is measured as the change in the EMA over the last `SlopeLookback` bars: a long needs `slope > 0`, a short needs `slope < 0`.

```
longSignal = slope > 0 AND crossUp  
shortSignal = slope < 0 AND crossDown
```

Worked example — long entry

With `EmaPeriod = 20`, `AtrPeriod = 14`, and `ChannelMult = 1.5`: suppose `EMA = 1.2000` and `ATR = 0.0040`, giving an upper band of 1.2060. The prior bar closed at 1.2055 (inside), and the current bar closes at 1.2072 (above). Because the EMA has also risen versus five bars ago (positive slope), `longSignal` is true and the EA opens a buy.

Exit Logic & Risk Management

Once a position is open, three independent mechanisms manage the exit:

- **Fixed ATR stop & target.** At entry the EA places a stop-loss at `StopMult × ATR` and a take-profit at `TpMult × ATR` from the fill price. With the defaults (`StopMult = 2.0`, `TpMult = 3.0`) this is a 1.5 : 1 reward-to-risk footprint.

- **Chandelier trailing stop.** Each bar, the EA recomputes a trailing stop at `TrailMult × ATR` from the current price. It only moves the stop when the new level is more favourable than the existing one (it ratchets — never loosens), locking in open profit as the trend extends.
- **Opposite-band early exit.** If a fresh breakout appears in the *opposite* direction while a position is open (e.g. a `shortSignal` while long), the position is closed immediately as a discretionary regime-change exit — before the fixed stop is hit.

One position per magic. While any position for the EA's magic number is open, no new entry is taken. This hard cap — no averaging, no grid — is what keeps worst-case exposure bounded to a single trade at a time.

Position Sizing

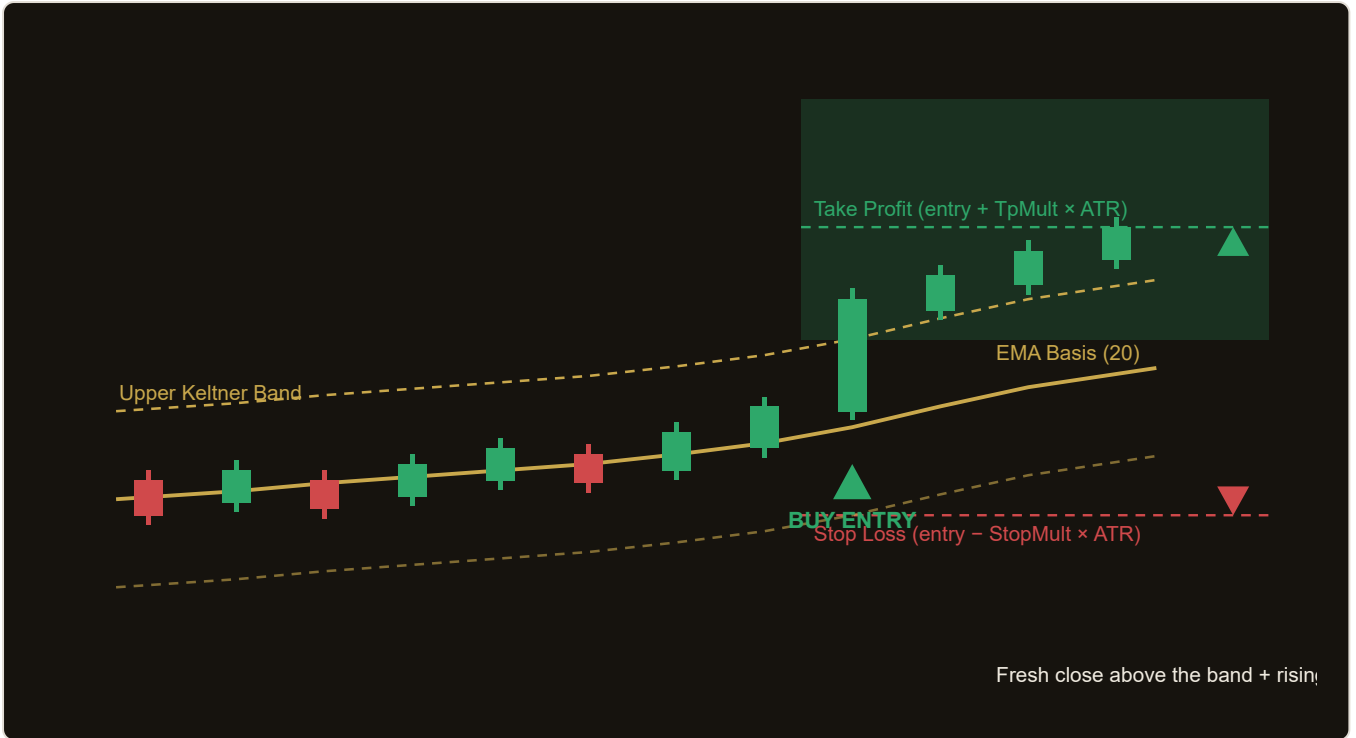
Volume is sized **fixed-fractionally**. At initialisation the EA records a reference balance. On each entry it scales the base lot by account growth and clamps the result:

```
scale = AccountBalance / referenceBalance
volume = round(BaseLots × scale, 2)
volume = clamp(volume, 0.01, MaxLots)
```

The MQL5 build additionally snaps the final volume to the broker's minimum, maximum, and step constraints (`SYMBOL_VOLUME_MIN / MAX / STEP`), so the order is always broker-valid. As the account grows the position size grows with it; as it shrinks the size contracts — with a hard ceiling of `MaxLots`.

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
EmPeriod	20	EMA basis period — the centreline of the Keltner channel. Range 10–60, step 2.
AtrPeriod	14	ATR period used for channel width, stops, targets, and the trailing stop. Range 7–30, step 1.
ChannelMult	1.5	Keltner channel half-width in ATRs. Larger values demand a stronger thrust to trigger. Range 1.0–3.0, step 0.1.
StopMult	2.0	Initial stop-loss distance from entry, in ATRs. Range 1.0–4.0, step 0.25.
TpMult	3.0	Take-profit distance from entry, in ATRs. Range 1.5–6.0, step 0.25.
TrailMult	2.5	Chandelier trailing-stop distance from current price, in ATRs. Range 1.0–5.0, step 0.25.
SlopeLookback	5	Number of bars back used to measure EMA slope for the regime filter. Range 2–20, step 1.
BaseLots	0.10	Base lot size at the reference balance, before fixed-fractional scaling. Range 0.01–1.0, step 0.01.
MaxLots	2.0	Hard ceiling on position volume after scaling. Range 0.10–10.0, step 0.10.
Magic	730144	Magic number identifying this EA's positions. Use a unique value per chart/instance.

Recommended Settings

The EA is symbol- and timeframe-agnostic by design. The defaults are a sensible, balanced starting point; treat the guidance below as a framework rather than a fixed prescription.

INSTRUMENTS

- **Trending markets suit it best.** Major FX pairs, index CFDs, and commodities that produce sustained directional moves let the trailing stop capture extended runs.
- **Avoid choppy, range-bound symbols** where breakouts repeatedly fail — even with the slope filter, whipsaw is the primary adverse condition for a breakout system.

TIMEFRAME

- **H1 is a reasonable default** for a 20-period EMA / 14-period ATR configuration, balancing signal frequency against noise. H4 produces fewer, higher-conviction signals; lower timeframes increase noise and spread sensitivity.

TUNING TIPS

- Widen `ChannelMult` to filter for stronger thrusts (fewer, cleaner trades); narrow it for more frequent signals.
- Keep `TpMult` > `StopMult` to preserve a positive reward-to-risk footprint, and set `TrailMult` between the two so the trail engages meaningfully without being stopped out by ordinary volatility.
- Size conservatively with `BaseLots` and `MaxLots` — the fixed-fractional model compounds exposure as the account grows.

Always validate first. Backtest on quality tick data and forward-test on a demo account with your intended broker before committing real capital. Optimise only the economically-meaningful parameters and beware of curve-fitting to a single historical period.

How to Install on MetaTrader 5

- 1 Copy `KeltnerBreakoutTrendRider.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

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.