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# OPEN ALGO METATRADER 5

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# Indice

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## 1 – Introduction

OpenAlgo is an Expert Advisor highly customizable for MetaTrader 5, designed to offer traders maximum customization and stimulate them in exploring numerous strategies through different capital management systems such as Hedging, Martingale, and Anti-Martingale.

The default trading mode is Hedging based on an indicator with a high winrate. This strategy manages changes in market direction, ensuring optimal performance even in sideways markets.

For traders seeking more aggressive approaches, OpenAlgo provides customizable Martingale options with built-in features to mitigate losses and effectively manage drawdown.

Our Expert Advisor goes beyond the limits, allowing traders to use any custom indicator that writes data into buffers. With this flexibility, you can integrate your favorite indicators and trading signals, ensuring a customized and tailored approach to trading.

Experience the power of the OpenAlgo Expert Advisor today and unlock new possibilities in your trading journey.

## 1.1 - Trading mode

The Expert Advisor supports three modes of capital management: Hedging, Martingale, Antimartingale.

This EA comes with a default indicator that works using one of our Hedging strategies; you will be able to employ it by loading the expert with the default parameters.

**WARNING:** If the EA is taken apart, open positions will no longer be managed by the bot! Not even if it is reloaded with the same parameters!

## 1.2 - Hedging

Hedging works on areas described between two prices, these areas can be calculated on blocks formed by highs and lows. On the highs it will place buy orders and on the lows sell orders.

As soon as a trade is opened, the bot will execute a pending order on the other level with doubled lots (if you have selected a lot multiplier of 2), so that a profitable exit is always guaranteed.

## 1.3 – Martingale



The Martingale management system involves opening new positions if the previous ones are at a loss.

This system is available in two modes:

- **Vertical Martingale**
- **Horizontal Martingale**

In the **Vertical Martingale**, it is possible to choose whether to open both buy and sell positions at the same time or to do one trading session at a time. New trades will be opened at set distances, and you can do this according to a fixed distance or by increasing the distance exponentially as you open new positions.

With each new opening, the bot will move the take profit value to the average price of the positions already open plus the take profit value chosen previously, going to a weighted average so that you come out at a profit.

Again, it is possible to open with fixed lots or with increased lots by going to change the lots multiplier and lot step values.

If Stop Loss is used, the first position will have the Stop Loss calculated on the entry price, all subsequent positions will have it at the same value.

The **Horizontal Martingale** provides for one trade at a time and makes the lot increment only if the previous trade was closed at a loss by the EA; this mode can be combined with Hedging and standard trade.

## 1.4 – Antimartingale

Contrary to the Vertical Martingale described above, this mode involves opening new positions when we are in profit. Positions will be opened with a fixed distance and Stop Losses will be placed on the entry of the penultimate open position, guaranteeing us an exit at profit or at break-even.

This mode is considered as a substitute protection to trailingstop and can be enabled in the respective input section.

## 2 – Settings

There are eight sections in the EA initialization menu:

- 1) Settings
- 2) Trade Manager
- 3) Protection
- 4) Indicator
- 5) Trend Filter
- 6) News Filter
- 7) Time Filter
- 8) Customization

### 2.1 - Settings

In the **Settings** Section we will find the following parameters:

ab SETTINGS EA	-----   settings
01 Expert magic number	55438
☰ Lots type	fixed lots
½ Lots / Risk	0.01
½ Max lots	0.0
☰ Stoploss type	stoploss [point]
01 Stop loss	0
☰ TakeProfit type	takeprofit/stoploss ratio
01 TakeProfit	1
☰ Expert working mode	work on new candle
☰ Open trade mode	one trade at time
🔄 Close on opposite signal	false

**Magic Number:** this is the first value we can change, this number is the identifier of the Expert Advisor and is intended to differentiate the positions opened by this Expert from another.

Also, if we want to load OpenAlgo on different assets, this number will have to be different at each new initialization.

**Lots Type:** is a variable that opens us a drop-down menu, where we will find two options.

- 1) Fixed Lots: the Expert will open each first position with the size you want;
- 2) Automatic Lots: the Expert will go to calculate the size, based on the distance between the Entry and the Stop Loss to risk a certain percentage calculated by the equity of the account.

**Lots / Risk:** is a variable directly related to the choice made earlier, if we type 0.1, and above we chose Fixed Lots, then the position that is going to open will be opened with exactly 0.1 lots. On the other hand, if we choose **Automatic Lots** above, then the bot will go and calculate the size needed to open such that it risks 0.1% of equity based on the width between Entry and Stop Loss.

**Max Lots:** is the maximum size value that can be reached. Example: if the bot wants to open a position with 1.2 lots, but we set 1 to Max Lots, then that position will be opened with 1 lot.

**Stoploss Type:** allows us to select three types of Stop Loss for our trades:

- 1) Auto Stoploss: stop losses are calculated Automatically by placing them on the previous lows/maximums;
- 2) Stoploss [point]: it will go to us to set the Stop Loss at a fixed distance expressed in point;
- 3) Stoploss from indicator: it will fetch us the Stop Loss value directly from the buffers of the indicator used (see Indicator section).
- 4)

**Stoploss:** This variable is also directly related to the previous choice. If we use Auto Stoploss or Stoploss from indicator, it will go to add an Offset to the Stop Loss.

If we use Stoploss [point]: it will go to place the Stop Loss exactly at that distance, expressed in point.

**Takeprofit Type:** allows us to select three types of Take Profit for our trades:

- 1) Takeprofit / Stoploss ratio: will go to place the Take Profit with a fixed ratio calculated from the Stop Loss;
- 2) Takeprofit [point]: will go to position the Take Profit at a fixed distance from the entry, expressed in points;
- 3) Takeprofit from indicator: there will go to take the Take Profit value directly-mindedly from the buffers of the indicator used (see Indicator section).

**Takeprofit:** this variable is also directly related to the previous choice. If we use Takeprofit / Stoploss ratio and set 1, it will go to place our targets with a 1:1 ratio based on the Stop Loss.

Whereas if we selected Takeprofit from indicator it will go and add an Offset to the Take Profit.

If we use Takeprofit [point]: it will go to place the take profit exactly at that distance expressed in point.

**Expert working mode:** allows us to select two types of operation:

- 1) Work on new candle: the bot will perform all checks on the indicator every candle change;
- 2) Work on Tick: the bot will perform all Checks on the indicator every Tick.

**Open trade mode:** allows us to select three modes:

- 1) One trade at time: The bot will only be able to open one trade at a time, either buy or sell;
- 2) One buy one sell: The bot will be able to open a buy trade and a sell trade at the same time;
- 3) Multiple trades: the bot has no limitations, it will be able to open whenever the indicator sends a signal.

**Close on opposite signal:** is a boolean variable (true, false) that only works if we use **One trade at time**. It will go there to close the position we opened if a signal comes in the opposite direction.

## 2.2 – Trade Manager

ab TRADE MANAGER	-----   trade manager
Trade type	hedging system
1/2 Lots multiplier	2.0
01 Number of max trade [hedging and martingale]	0
↔ Reverse the strategy [only for hedging]	false
↔ Horizontal martingale [hedging and std trade]	false
01 Limit for horizontal martingale	0
01 Martingale and antimartingale grid	200
1/2 Grid multiplier [1 for std martingale]	1.0
01 Position steps for lots increment [0 disable]	0
↔ Use ema filter on martingale	false

The second section is the **Trade Manager** section.

**Trade type:** allows us to select three types of trades, these types will be fully editable and adaptable in the next parameters.

- 1) Standard trade: when the bot receives a signal from the indicator, it opens a trade with the parameters chosen in the previous section;
- 2) Hedging System: when the bot receives a signal from the indicator, the bot will work following the Hedging strategy described above;
- 3) Martingale System: when the bot receives a signal from the indicator, it will open a position, if that position goes into a loss, it will go on to open new brokerage positions.



**Lots Multiplier:** is a variable that is directly related to the trading patterns chosen earlier, it will multiply the value of lots for new openings.

**Number of max trades** [Hedging and Martingale]: is a variable that goes to limit the number of positions that will be opened for that session. In the case of Hedging it indicates the number of "raises" allowed, while in the case of Martingale, it indicates the maximum number of open positions.

**Reverse the strategy** [only for Hedging]: is a Boolean variable (true, false) that allows for reversing the trade; if it is disabled, the bot will open on the high a buy and on the low a sell (breakout), while if it is enabled it will open on the high a sell and on the low a buy (swing).

**Horizontal Martingale** [Hedging and std trade]: this is a boolean variable (true, false) that enables relaunches on different signals (or blocks). If the previously opened trade on another signal went to Stop Loss, on the next signal it will reopen with the lot value of the previous position doubled.

**Limit for Horizontal Martingale:** is a variable to limit the number of raises allowed in the Horizontal Martingale.

**Martingale and Antimartingale grid:** is a variable that is used only when using the Martingale trade system or in the case of Antimartingale protection, it indicates the distance between trades, expressed in points.

**Grid multiplier:** this is a variable that is used only when using the Martingale trade system and is a value that goes to change the behavior of the grid.

For example, if we had set in the previous variable 200 points and the grid multiplier to 1, each position will be opened at a fixed distance of 200 points. If, on the other hand, we used the value 2 as the grid multiplier, the first mediation will be opened at 200 points, the next at 400, then 800, and so on.

**Position Step for lot increment:** this is a variable that is used if we have a lot multiplier other than 1, for example, if in the case of Martingale system we wanted to open the fourth position with doubled lots, we could set the grid multiplier to 2 and the position step to 3 so that the first three trades would be executed at 0.01 and the next 3 at 0.02, after that 3 more from 0.04 and so on, with every 3 positions a doubling.

**Use ema filter on martingale:** is a boolean variable (true or false) that allows opening a mediation in the case of Martingale System, only if the moving average is in favour of the move. It is used to prevent opening on strong moves against trend.

## 2.3 – Protection

ab PROTECTION	-----   protection
01 Spread filter [0 disabilita]	0
➔ Set Take Profit when use trade protection	false
☰ How did you want protect your trade	no protection
➔ Close half position	false
☰ Calculation type for trailingstop and breakeven	percent
01 Activation for protection and close half position	100
01 Step for trailing or dinamic breakeven	50
☰ Select a drawdown type	drawdown in USD
½ Daily drawdown [0 disable]	0.0

The third section is the **Protection section**.

**Spread filter:** is a variable that disables the opening of trades if the spread exceeds the set value; if you do not want to use it, you can leave it at 0.

**Set Take Profit when using protection:** is a Boolean variable (true or false) that allows us to choose whether to set Take Profits on the first trades (those that will be able to take advantage of the protections). By setting it to True, the trade will be opened with the Target chosen in the previous section. Conversely, on False, it will not set a Take Profit.

**How did you want protect your trade:** allows us to select five types of trade protection:

- 1) Trailing stop: it will move the Stop Loss reached an Activation point, and keep the Stop away from the Entry based on the Step value that is set successively;
- 2) Breakeven: will move the Stop Loss to breakeven (on the Entry value) reached an Activation point;
- 3) Dynamic Breakeven: will move the Stop Loss reached an Activation point, putting it at a predetermined percentage (or distance);
- 4) Antimartingale: will open new positions if you are in profit and if the old positions are safe, at a fixed distance chosen with the grid size variable;
- 5) No protection: will not use any position protection system.

**Close half position:** is a boolean variable (true or false), which will close half the position when the protection is triggered.

**Calculation type for trailingstop e breakeven:** allows us to select two modes for calculating protections:

- 1) Percent: in percent with respect to the distance Entry - Take Profit;
- 2) Points: in points with respect to Entry.

**Activation for protection and close half position:** is a variable indicating the **Activation** point for the Trailing Stop, Breakeven or Dynamic Breakeven.

**Step for Trailing or Dynamic Breakeven:** is a variable that indicates the distance of the Stop Loss from the Protection Activation point.

**Select a drawdown type:** allows us to choose two types of calculation for drawdown protection:

- 1) **Drawdown in percent:** indicates the maximum drawdown value calculated on a percentage of the balance;
- 2) **Drawdown in USD:** indicates the maximum drawdown value allowed in dollars;
- 3) **Daily Drawdown:** indicates the maximum allowable daily loss value.

## 2.4 – Indicator

ab INDICATOR	-----   indicator
ab Indicator name	
ab Configuration file of indicator	
01 Buffer signal BUY	0
01 Buffer signal SELL	1
01 Buffer stop loss	2
01 Buffer take profit	3

The fourth section is the **Indicator** section.

**IMPORTANT:** All indicators will have to write at least the data to the signal BUY and signal SELL buffers in order to work, the buffers related to targets are optional.

**Indicator Name:** in this variable we will specify the name of the indicator for the signal handling we want to use, just write the name of the indicator without extension.

**Configuration file of indicator:** in this variable we can specify the name of the indicator configuration file; it is also necessary to specify the file extension (.set, .txt, .ini).

**WARNING:** the configuration file should be saved in the Terminal/Common directory.

The following inputs will be used to specify buffer indexing.

**Buffer signal BUY:** is a variable indicating the index of the default buffer for opening BUY positions, this buffer will have to be taken from the indicator you want to use.

**Buffer signal SELL:** is a variable indicating the index of the default buffer for opening SELL positions, this buffer will have to be taken from the indicator you want to use.

**Buffer stop loss:** is a variable indicating the index of the default buffer for the **Stop Loss** value of a signal, this buffer will have to be taken from the indicator you want to use.

**Buffer take profit:** is a variable indicating the index of the default buffer for the **Take Profit** value of a signal, this buffer will have to be taken from the indicator you want to use.

## 2.5 - Trend Filter

The fifth section is the **Trend Filter** section.

ab TREND FILTER	-----   trend filter
Use trend filter	false
Type of trend filter	cross and close up/down fast ma
MA fast period	100
MA slow period	200
MA method	Simple
MA timeframe #1	current
MA timeframe #2	current

This section allows us to go to enable a possible trend filter, to avoid openings on signals against trend. The trend filter consists of 2 moving averages, by default 100 and 200 periods, taken at two different timeframes; if the moving averages return a buy trend at both timeframes, then a buy trade can be opened, inhibiting sell trade openings and vice versa.

The trend is detected using the cross between the two moving averages or the close above or below the fast average, or only with the close above or below the fast average.

**Use trend filter:** is a boolean variable (true or false) that allows us to enable or disable the trend filter.

**Type of trend filter:** allows us to select three modes for trend calculation:

1. MA cross: this type will allow us to identify the trend only if the two averages cross each other.
2. cross and close up/down fast MA: this type will allow us to individuate the trend only if the two averages cross and if the price closes above or below the faster average.
3. cross or close up/down fast MA: this type will allow us to individuate the trend if the price closes above or below the faster average or a cross has occurred.
- 4.

**MA fast period:** is a variable that allows us to select the period of the fast moving average.

**MA slow period:** is a variable that allows us to select the period of the slow moving average.

**MA method:** ci permette di scegliere la tipologia di media mobile utilizzata.

**MA timeframe higher:** allows us to go and select on which timeframe to go and look for the trend.

**MA timeframe lower:** allows us to go and select on which timeframe to go and look for the trend.

## 2.6 – News Filter

The sixth section is the **News Filter** section.

ab NEWS FILTER	-----   news filter
➡ Enable news filter	false
ab Currency news	USD/EUR
📄 Select impact news type	Get only high impact news
🕒 Minute before news for placing orders	60

In this section you can choose whether to disable new trade openings a few minutes before and a few minutes after a news item.

**Enable news filter:** is a boolean variable (true or false) that allows us to enable or disable the news filter.

**Currency news:** In this section we can choose the currency of the news that the bot should take into account. If you want to check all currencies, the field can be left blank, but if you want to take into account only dollar and euro news, you should write USD/EUR, where the "/" character is a separating character. In the example picture above, it will only take into account news about euro and dollar, completely ignoring news about other currencies.

**Select impact news type:** allows us to select high-impact, high- and medium-impact, or all news stories.

**Minute before news for placing order:** Instead, it allows us to choose how many minutes earlier to stop the openings at the close of a news story, and then start again tot minutes later.

## 2.7 – Time Filter

The seventh section, on the other hand, is on **Time Filter**.

ab TIME FILTER	-----   time filter
➡ Enable time filter	false
ab Monday: from - to [empty field disable]	01:00 - 12:00
ab Tuesday: from - to [empty field disable]	01:00 - 12:00
ab Wednesday: from - to [empty field disable]	01:00 - 12:00
ab Thursday: from - to [empty field disable]	01:00 - 12:00
ab Friday: from - to [empty field disable]	01:00 - 12:00
ab Saturday: from - to [empty field disable]	
ab Sunday: from - to [empty field disable]	

It allows us to select whether or not to activate it and allows us to choose which time slot the bot will go to work in, day by day. If the field is left blank, the bot will not work.

Allows us to select only one session per day mel format hh:mm - hh:mm

## 2.8 - Customizations

The last section is on **Customizations**.

ab CUSTOMIZATIONS	-----   customization
➡ Show expert data on chart [false to avoid high cpu usage]	false
ab Comment	openalgo
Info text color	<input type="checkbox"/> WhiteSmoke

In this section you can go in and change the visual aspects of the bot. The infobox that is generated will automatically show different information based on the trading manager used.

**Show Expert data on chart:** is a boolean variable (true or false) that allows the infobox containing all the information needed to be able to control the expert to be displayed on the screen.

By default it is set to false to minimize the resources required for operation, but you can enable it at any time if necessary.

**Comment:** you can enter a string that will be the comment of the position that the bot is going to open.

**Info text color:** allows us to choose the color of the infobox information.

### 3 – Indicators

In this section we will define the standards that an indicator must have in order to be used with this Expert Advisor.

As we described earlier the indicator will have to write sell and buy signals to the memory buffers, the expert will accept any type of data that is other than 0 or EMPTY VALUE, this is because the bot will always open at market, and a version with pending orders will be provided in future implementations.

As for the Take Profit and Stop Loss buffers, which are optional, they should contain the actual price at which the relevant Take Profit and Stop Loss should be set.

## F.A.Q.

### - Trades are opened that do not comply with the strategy, what should I do?

Check if the indicator buffers are correct, best to check from source code, often the data window is misleading and does not show the correct order.

Also check the open trade mode parameter, whether multiple trade or single trade is selected.

### - Stop Loss and Take Profit are not set or are far apart, how can I change them?

Check the Stop Loss mode if it is set in point, hitch or with data taken from the 'indicator.

Check the Take Profit mode if it is in point or ratio or with data taken from the indicator.

Having the Stop Loss in point set at 0 and the tp ratio at 1 or higher is a mistake and generates very large values.

### - I use Hedging strategy but the trades are wrong, how come?

Hedging mode can be used in two ways if the indicator provides both buy and sell values to buffer at the same time, the expert will place two pendants for those values. Otherwise, the indicator can provide only buy signals or sell signals, and the expert will open to market by placing its corresponding pending order at the Stop Loss level.

**CAUTION:** To prevent errors make sure you have set the Stop Loss correctly in point or hitch by adding any offset

### - Martingale always opens with the same lots, how to solve?

Check the value of max lots, lot step and that the lot multiplier is different from 1.

### - Expert opens few trades, how to do it?

Check if the indicator buffers are right and if the trend and time if filters are turned on.

### - I don't see the take profit at the trade, how to solve?

Check if you have position protections enabled, because the bot if you have protections enabled will not set the take profit and will move the Stop Loss according to the type of protection you choose. You can still go in and change the positions manually, without interfering with the bot's operation.



**- How come the bot no longer checks the positions?**

Make sure you have not disassembled the bot. If the bot is disassembled and reassembled, or the computer is turned off, it will no longer be able to check and edit open positions.