

# MasterEA Documentation

## V1.1

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# Introduction

The following documentation is for the MasterEA Expert Advisor. This is a program that can automatically execute trades in the MetaTrader 5 platform. The Expert Advisor is programmed in MetaTrader 5's own language mql5.

MasterEA blog post: [MasterEA blog post](#)

MetaTrader 5 documentation: [MT5 documentation](#)

MQL5 language pdf documentation: [mql5.pdf](#)

MQL5 online documentation: [MQL5 Reference](#)



## MetaTrader 5 installation

1. Download the MT5 platform from the link or directly from your broker's client area / website. [MetaTrader 5](#)
2. It is advisable to install the Metatrader 5 platform on a virtual windows server. Tutorial: [Get a trading VPS! Step by step tutorial](#)

## EA installation

1. In your MT5 platform, go to **Tools > MQL5 Market**. Use the search bar on top of the window and search for "MasterEA". Here you can download the demo or full version of the EA.

2. Go to **View > Navigator**. The MasterEA should be visible under **Expert Advisors > Market**. You might need to refresh the folder by doing a right click on **Expert Advisors > Refresh**.

## Startup

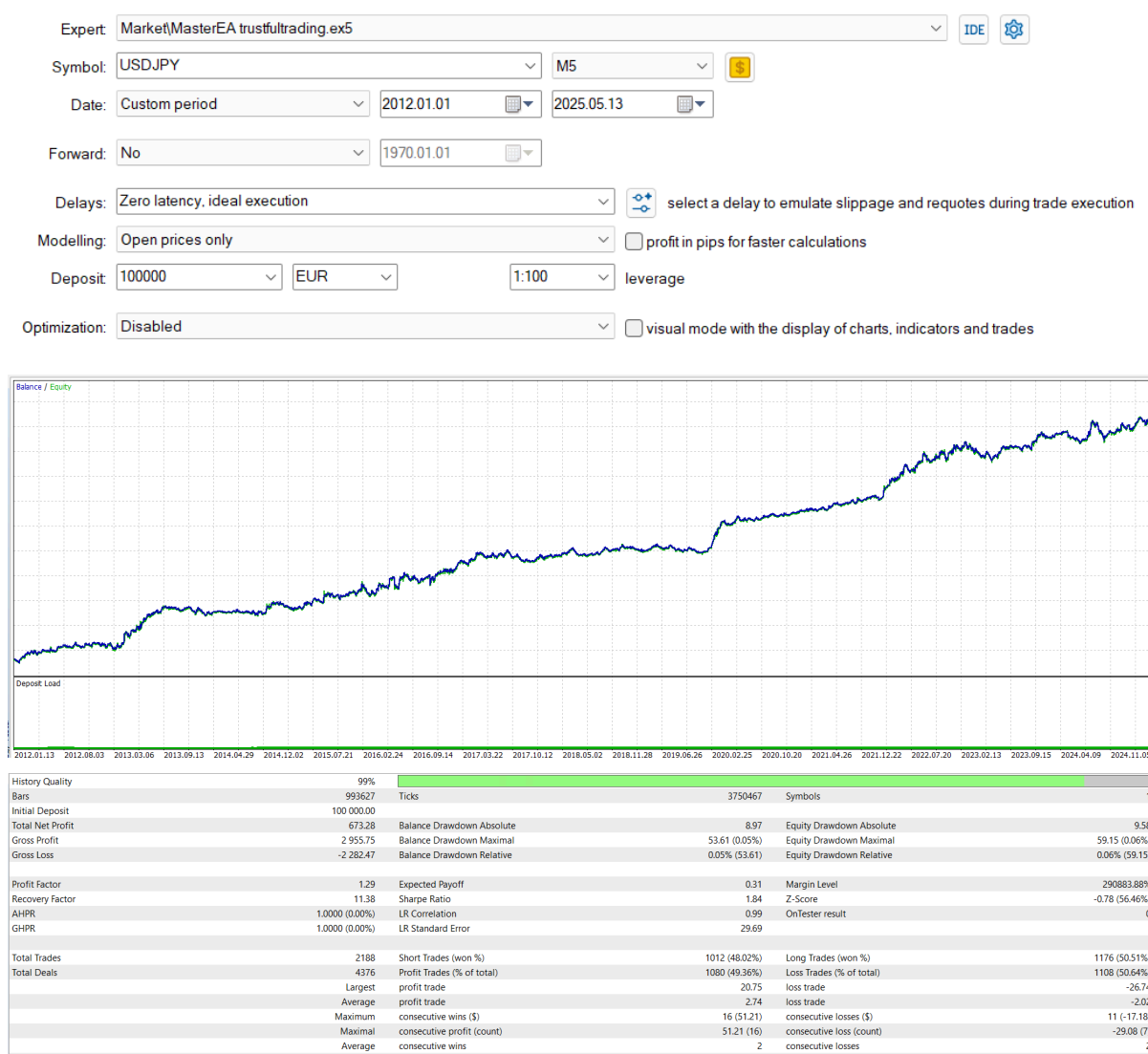
Before you start the EA, make sure to read the documentation.  
It is advisable to first test the EA in the strategy tester of the Metatrader 5 platform. Before starting on a real money account, a test should also be carried out on a demo account.

## Strategy Tester

Documentation: [MetaTrader 5 Built-in Trading Strategy Tester](#)  
[Strategy Testing - Algorithmic Trading, Trading Robots - MetaTrader 5 Help](#)

1. Open the strategy tester in your MT5 platform. **View > Strategy Tester**.
2. On the bottom of the strategy tester window go to the **Settings** tab.
3. To run a single backtest with one of the provided set files, right click in the settings window and click on **Load Settings**. Load one of the .ini files you can download from the blog post: [MasterEA blog post](#)
4. You may need to edit the symbol if your broker uses special symbol names. (Historical data must be available for the backtest). The time based set files are constructed to work with a broker server time of GMT+3. If your broker uses a different timezone, you need to adjust all time relevant strategy settings.
5. Press **Start** to run a single non visual backtest. For a visual test run, check **visual mode**.

## Example of the USDJPY Breakout strategy



## Demo Account

This is only possible with the full version of the EA.

1. Make sure you are connected to a Broker Demo Account
2. The account has to be a hedged account
3. Make sure **Algo Trading** is enabled in the Terminal settings
4. Drag and drop the EA from the navigator window onto the chart
5. In the **Common** tab, check **Allow Algo Trading**
6. Go to the **Inputs** tab and set all inputs or load a set file.
7. Click ok to run the EA
8. To get a green status bar, the input **load data from** should be switched to **inputs and files**.

Check the Experts log for any error messages. (**View** > **Toolbox** > **Experts** tab)

Right click on the blue icon in the top right corner to go to the properties or to remove the EA.

## Live Account

This is only possible with the full version of the EA. It is highly recommended to run the Metatrader 5 platform on a VPS server.

### Get a trading VPS! Step by step tutorial

1. Make sure you are connected to a Broker Live Account
2. The account has to be a hedged account
3. Make sure **Algo Trading** is enabled in the Terminal settings
4. Drag and drop the EA from the navigator window onto the chart
5. In the **Common** tab, check **Allow Algo Trading**
6. Go to the **Inputs** tab and set all inputs or load a set file.
7. Click ok to run the EA
8. To get a green status bar, the input **load data from** should be switched to **inputs and files**.

Check the Experts log for any error messages. (**View > Toolbox > Experts** tab)  
Right click on the blue icon in the top right corner to go to the properties or to remove the EA.

# MasterEA signal and filter functionality

The MasterEA is an advanced algorithmic trading system designed to automate trade decisions across various financial instruments, serving as a versatile tool for users to build their own trading strategies by combining customizable signals and filters. Below is a general description of how entry signals, exit signals, and filters work, suitable for a user manual.

## Entry Signals

Entry signals identify opportunities to open new trades, such as buying or selling a financial instrument. The MasterEA includes multiple signal modules that analyze market conditions, such as price trends, momentum indicators, or candlestick patterns, to generate buy or sell signals. Users can configure which modules are active, allowing them to tailor their strategy to specific trading preferences. When a module detects a favorable condition, it produces a signal that may lead to opening a trade, provided it passes all relevant filters.

## Exit Signals

Exit signals determine when to close open positions, either to secure profits or limit losses. The system employs dedicated exit modules, including time-based and condition-based triggers, alongside some entry signal modules that can also generate exit signals. For example, a module might signal to close a position after a specific time period or when a technical indicator suggests a change in market conditions. These signals ensure positions are closed systematically according to user-defined rules, aligning with the user's strategy.

## Filters

Filters refine entry and exit signals by applying additional criteria to block trades that don't meet specific conditions, enabling users to fine-tune their strategy. The MasterEA offers a variety of filters that evaluate factors like trading hours, market volatility, trend strength, or signal intensity. For instance, a filter might prevent trades during low-volatility periods or block signals that are too weak. Users can activate multiple filters to create a robust screening process, ensuring only the most suitable signals align with their strategic goals.

## Integration and Workflow

The MasterEA seamlessly integrates entry signals, exit signals, and filters to execute trades in real time, empowering users to build and refine their own trading strategies. Entry signals are generated based on market data and passed through active filters to confirm their validity. If approved, a trade is opened. Similarly, exit signals are generated and filtered before closing positions. The system's graphical interface provides real-time updates on signal and filter

activity, helping users monitor and adjust their custom strategy. This flexible design allows traders to combine signal modules and filters creatively, balancing automation with precision.

This integrated approach makes the MasterEA a powerful tool for crafting personalized, rule-based trading strategies adaptable to diverse market environments.

# Graphical user interface

The MasterEA Panel is a trading dashboard for MetaTrader, offering trade monitoring, performance analysis, and EA settings control.

## Panel Interface & Buttons

The panel is divided into main tabs and, for some, sub-tabs.

### Main Tabs (Buttons at the top)

- **Overview:** Displays a general summary of your EA, recent log entries, account info, and a small equity curve.
- **Settings:** Provides access to four sub-tabs (Settings 1 to Settings 4) detailing the EA's configured parameters.
- **Performance:** Offers comprehensive performance analysis, featuring a sidebar with filtering options.
- **Log:** Shows a detailed list of all system messages, warnings, and errors.

### Performance Tab - Sidebar Buttons

- **Time Period** (YYYY.MM.DD input fields):
  - **Start Time Edit Box:** Enter the start date for performance calculation.
  - **End Time Edit Box:** Enter the end date for performance calculation.
- **Selections** (Magic, Symbol, Account):
  - **"All" button** (for Magic/Symbol/Account): Selects all available items (Magic Numbers, Symbols, or Account IDs).
  - **"Clear" button** (for Magic/Symbol/Account): Deselects all items in that category.
  - **"▲" (Up Arrow) button:** Scrolls the list of Magic Numbers, Symbols, or Account IDs up.
  - **"▼" (Down Arrow) button:** Scrolls the list of Magic Numbers, Symbols, or Account IDs down.
  - **Individual Magic/Symbol/Account buttons:** Toggles selection for a specific item. Green border means selected.
- **"Update" button:** Recalculates and refreshes all performance data based on the current filter selections.

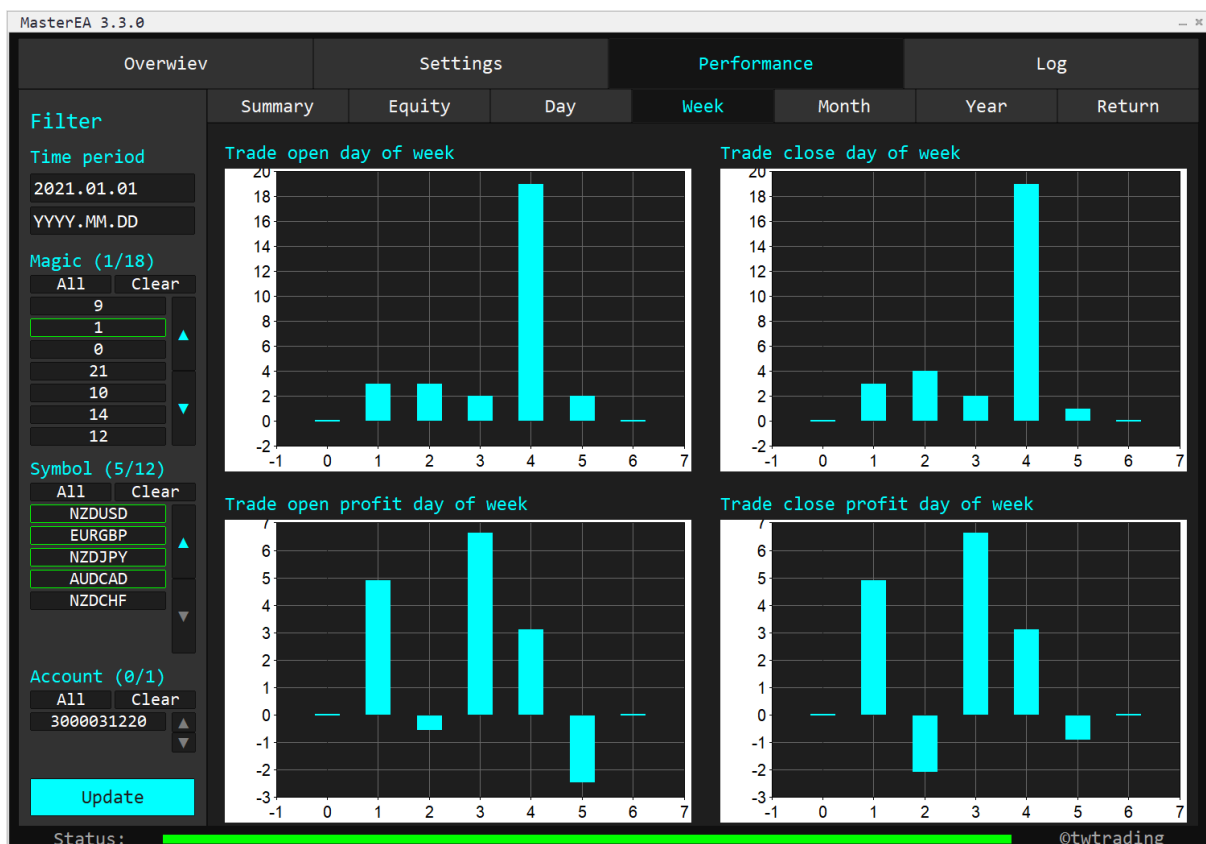
### Performance Tab - Sub-Tab Buttons

- **"Summary":** Displays key performance figures and detailed trade statistics.
- **"Equity":** Shows the equity curve of your trading.

- **"show magics"**: Adds individual equity curves for each selected Magic Number to the chart.
- **"show symbols"**: Adds individual equity curves for each selected Symbol to the chart.
- **"show accounts"**: Adds individual equity curves for each selected Account ID to the chart.
- **"Day"**: Shows performance breakdown by hour of the day (trade open/close counts and profit).
- **"Week"**: Shows performance breakdown by day of the week (trade open/close counts and profit).
- **"Month"**: Shows performance breakdown by day of the month (trade open/close counts and profit).
- **"Year"**: Shows performance breakdown by month of the year (trade open/close counts and profit).
- **"Return"**: Presents a table of monthly returns by year.

## General Panel Interactions

- **Maximize/Minimize**: Standard window controls to expand or collapse the panel.
- **Close**: This will close the panel and remove the EA from the chart.



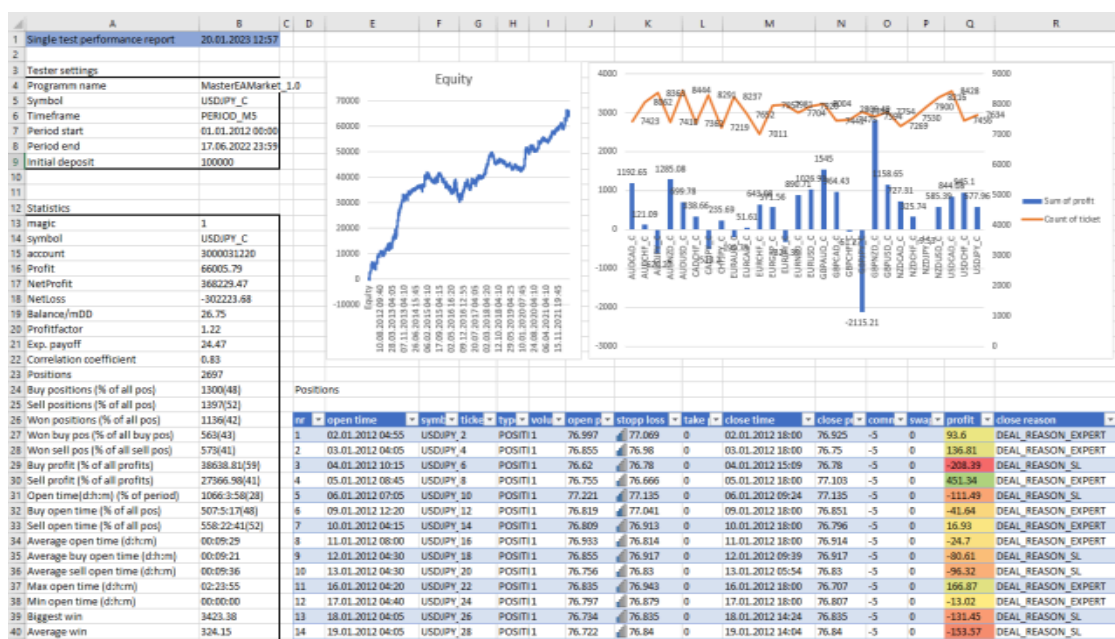


# Test Reports

## Single Test Performance Report

The Single Test Performance Report in the MasterEA is a comprehensive tool that provides users with a detailed summary of a single backtest or forward test's performance, helping traders evaluate the effectiveness of their customized trading strategy. When enabled, this feature generates a text file named "PerformanceReport.txt" in the platform's common files directory, offering a clear overview of the test's results, settings, and trade details. It is designed to assist users in analyzing how their combination of signal modules and filters performs under specific market conditions, making it an essential component for strategy refinement.

The report begins with general test information, including the program name, tested symbol, timeframe, test period, and initial deposit, giving context to the results. It then presents a wide range of performance metrics, such as total profit, profit factor, expected payoff, drawdowns, and trade win rates, providing a holistic view of the strategy's profitability and risk profile. Detailed trade data follows, listing each closed position with specifics like open and close times, prices, volume, profit, and the reasons for closure, along with signal strength metrics for both entry and exit. The report also includes an equity curve, showing balance changes over time, which helps users visualize the strategy's consistency. Additionally, the report's CSV format allows users to import and analyze the test results in Excel for deeper insights and custom calculations. Finally, it documents all input settings used in the test, covering general parameters (e.g., magic



number, lot size, stop-loss settings) and specific configurations for active signal and filter modules (e.g., moving average periods, bar filter conditions, or time filter schedules). This ensures users can replicate or adjust the tested strategy accurately.

By consolidating these insights into a single, easy-to-read file, the Single Test Performance Report empowers users to assess their strategy's strengths and weaknesses, make informed adjustments, and build more robust trading systems with the MasterEA's flexible signal and filter framework. The report is particularly valuable for traders seeking to validate their strategy before live trading or to document performance for record-keeping and analysis.

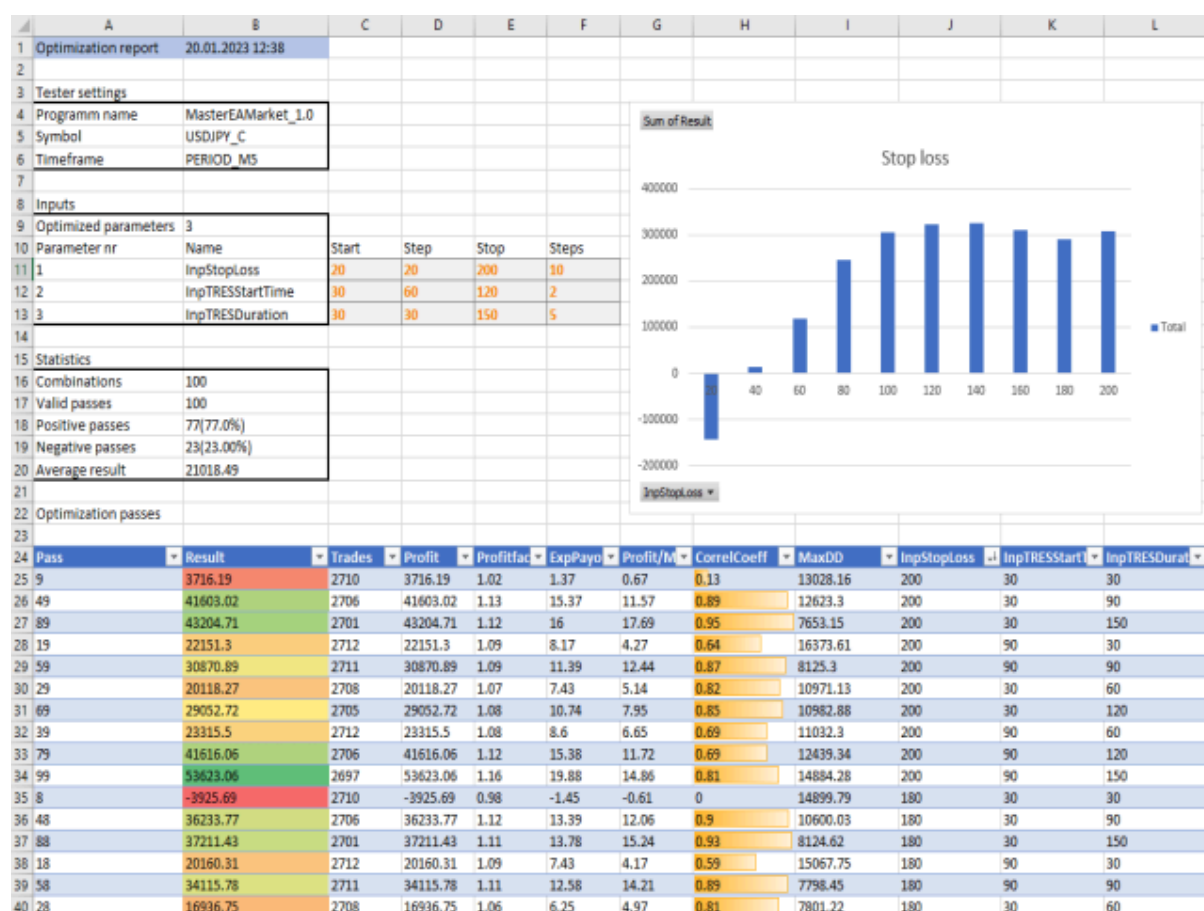
## Optimization Report

The Optimization Report in the MasterEA is a powerful tool designed to help users evaluate and refine their trading strategies by analyzing the performance of multiple backtest runs with varying parameter combinations. When enabled, this feature generates a text file named "OptimizationReport.txt" in the platform's common files directory, providing a detailed summary of all optimization passes. It is tailored for traders building custom strategies using the MasterEA's flexible signal and filter modules, enabling them to identify the most effective parameter settings for their trading approach.

The report starts with general information about the optimization, including the program name, tested symbol, timeframe, and the date of the report, setting the context for the results. It lists the optimized parameters, detailing each parameter's name, start value, step size, stop value, number of steps, and the number of neighbors used for analysis (if neighbor analysis is enabled), offering a clear overview of the tested parameter ranges. Key statistics follow, such as the total number of combinations, valid passes, positive and negative pass percentages, and the average result across all passes, giving users a high-level understanding of the optimization's scope and outcomes. The report then provides a detailed breakdown of each optimization pass, including the pass number, custom criteria result (e.g., balance, profit factor, or a composite metric like optiPro), performance metrics (e.g., profit, trades, drawdowns), and the specific parameter values used. If neighbor analysis is active, it includes metrics like the number of neighboring passes, their average result, and the lowest result in the neighborhood, helping users assess parameter stability. The report's CSV format allows users to import and analyze the test results in Excel for deeper insights and custom calculations. Finally, it includes a full list of all input parameters, ensuring transparency and reproducibility of the optimization setup.

By compiling these comprehensive insights into a single, accessible file, the Optimization Report enables users to compare different parameter configurations, identify optimal settings, and enhance their trading strategies.

within the MasterEA's signal and filter framework. This report is particularly valuable for traders aiming to fine-tune their strategies systematically, ensuring robustness and consistency before deploying them in live trading.



## Neighbor Analysis in the MasterEA Optimization Report

The Neighbor Analysis feature in the MasterEA's Optimization Report is a valuable tool that helps traders assess the robustness and stability of their trading strategy's parameter settings by evaluating the performance of nearby parameter combinations during optimization. This analysis is particularly useful for users building custom strategies with the MasterEA's signal and filter modules, as it identifies parameter sets that not only perform well individually but also maintain consistent results when slightly varied, reducing the risk of overfitting.

### How Neighbor Analysis Works

When enabled via the **run neighbor analysis** setting, Neighbor Analysis examines the performance of each optimization pass by considering the results of other passes with parameter values close to the current pass—referred to as "neighbors." For each parameter being optimized (e.g., a moving average period

or a filter threshold), the user specifies the number of neighboring values to include on either side of the current value using the **number of neighbors for each parameter** input (e.g., **1;0;2** for three parameters, indicating one neighbor for the first, none for the second, and two for the third). For example, if a parameter like a moving average period is set to 20 with one neighbor, the analysis considers periods of 19 and 21 as neighbors, provided they are within the tested range.

For each optimization pass, the system identifies all passes where all optimized parameters fall within the specified neighbor range (e.g.,  $\pm 1$  step for a parameter with one neighbor). It then calculates several key metrics:

- **Number of Neighbors:** The count of passes that qualify as neighbors, indicating how many similar parameter combinations were tested.
- **Average Neighbor Result:** The average performance result (based on the chosen custom criteria, such as profit or optiPro) across all neighboring passes, showing the typical outcome of nearby settings.
- **Lowest Neighbor Result:** The worst performance result among the neighbors, highlighting the potential downside of small parameter changes.

These metrics are included in the Optimization Report alongside each pass's individual results, allowing users to evaluate whether a high-performing parameter set is stable (i.e., its neighbors also perform well) or sensitive to small changes (i.e., neighbors have significantly worse results).

## Practical Implications

Neighbor Analysis helps users select parameter combinations that are robust by favoring those with a high average neighbor result and a lowest neighbor result that is still acceptable. A pass with many neighbors and consistent performance suggests that the strategy is less likely to fail if market conditions or parameter settings shift slightly, enhancing confidence in its reliability. Conversely, a pass with strong individual performance but poor neighbor results may indicate overfitting, where the parameters are too finely tuned to historical data and less likely to perform well in live trading.

By integrating Neighbor Analysis into the Optimization Report, which can be imported into Excel for further analysis, the MasterEA empowers traders to make informed decisions about their strategy's parameter settings, balancing performance with stability to build more resilient trading systems. This feature is especially valuable for users aiming to optimize their strategies systematically and ensure consistent performance across varying market conditions.

## Neighborhood Analysis / Stability test

Parameters: (start,step,stop)

**TriggerLevel** (1,1,10)

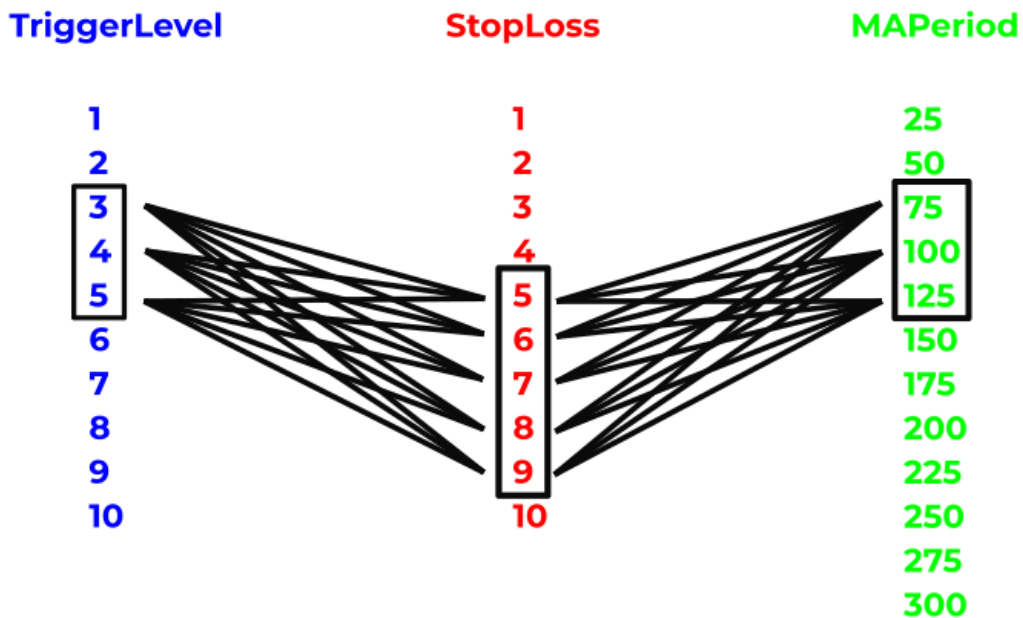
**StopLoss** (1,1,10)

**MAPeriod**(25,25,300)



number of neighbors: 1;2;1

Example for Combination 4,7,100



Number of combinations:  $3 \times 5 \times 3 = 45$

Neighborhood analysis calculates the average of these combinations and displays the lowest combination. This process is performed for each combination.

# Inputs

In MetaTrader 5, input parameters are settings you can tweak to customize how trading tools like Expert Advisors work. They let you adjust things directly from the MT5 platform before running an EA. These parameters make it easy to test different setups or strategies without needing to change the program itself. You can find and set them in the **Inputs** tab when adding the EA to a chart or in the **Inputs** tab in the strategy tester.

At the start, the EA checks if the inputs are valid. Any conflict is written to the log as an error message.

## General Settings

These settings configure the MasterEA's core functionality, including trade identification, strategy naming, debugging, timeframe selection, and symbol selection.

### magicnumber

- Default Value: **1**
- Description: The magic number assigns a unique identifier to trades opened by the MasterEA, allowing it to track and manage its positions separately from other EAs or manual trades on the same MT5 account. This ensures the MasterEA only handles its own trades, streamlining trade management and performance analysis.
- Correct Input Examples:
  - **12345** (a positive integer, uniquely identifies MasterEA trades)
  - **987654** (another valid positive integer for a different MasterEA instance)
- Incorrect Input Examples:
  - **0** (zero is invalid, causes the MasterEA to stop)

### strategy name

- Default Value: **New Name**
- Description: This parameter allows users to assign a custom name to the MasterEA's trading strategy, which appears in logs, performance reports, and other outputs. The name serves as a label to identify the strategy's purpose or approach, aiding organization when managing multiple strategies.
- Correct Input Examples:
  - **ScalpTrend** (short, descriptive name within 15 characters)
  - **MeanRev** (concise name for a mean-reversion strategy)
- Incorrect Input Examples:

- **VeryLongStrategyName2025** (exceeds 15 characters, causes the MasterEA to stop)
- `` (empty string, may lead to identification issues)
- **Strategy@;#1** (special characters may cause processing errors)

## debug password

- Default Value: "password"
- Description: The debug password unlocks a debug mode that generates detailed logs of the MasterEA's operations, useful for troubleshooting or analyzing its decision-making process. The password is provided by trustfultrading in order to obtain detailed information in the event of incorrect behavior.

## modeling timeframe

- Default Value: **PERIOD\_M5** (5-minute timeframe)
- Description: This parameter sets the chart timeframe (e.g., 5-minute candles) used by the MasterEA for market analysis and generating trading signals. The timeframe determines how frequently the MasterEA evaluates market data. In the strategy tester, this input must be equal or a multiple of the tester timeframe.
- Correct Input Examples:
  - **PERIOD\_M15** (15-minute timeframe)
  - **PERIOD\_H1** (1-hour timeframe)
- Incorrect Input Examples:
  - **PERIOD\_CURRENT** (not allowed, must be a specific timeframe, causes error)

## symbol

- Default Value: **CURRENT**
- Description: The symbol parameter specifies the financial instrument(s) the MasterEA trades, such as the symbol on the current chart (e.g., EURUSD) or a predefined set of symbols. Options include **CURRENT** (current chart's symbol), **ALL** (all listed symbols), **NR3** (specific symbol), **LOOP** (cycle through symbols), or **COMBO3** (group of symbols), offering flexibility for single or multi-market trading.
  - **CURRENT**: Trades the symbol on the current chart (e.g., EURUSD if the MasterEA is attached to the EURUSD chart).
  - **ALL**: Trades all symbols listed in symbol line 1-4.
  - **NR#**: Trades a specific symbol from the list (e.g., **NR3** selects the third symbol).
  - **LOOP**: Cycles through the listed symbols, trading one at a time..
  - **COMBO#**: Trades a specific combination of symbols (e.g., **COMBO3** trades a group of three symbols).



- Correct Input Examples:
  - **CURRENT** will trade the chart symbol, no matter the symbol list inputs.
  - **NR3** will trade USDJPY if the symbol list input (symbol line 1-4) is EURUSD;AUDCAD;USDJPY;EURCHF;EURJPY
  - **NR3+5** will trade USDJPY and EURJPY if the symbol list input (symbol line 1-4) is EURUSD;AUDCAD;USDJPY;EURCHF;EURJPY
  - **COMBO4** will test all possible combinations of four symbols.
- Incorrect Input Examples:
  - Everything that does not meet the specified syntax.

### symbol line 1

- Default Value: **EURUSD;USDJPY;GBPNZD**
- Description: This field allows users to list financial instruments (e.g., currency pairs) for the MasterEA to trade. Symbols are entered as a semicolon-separated string, defining the primary trading portfolio for the MasterEA's strategy.
- Usage Example: Enter **AUDUSD;NZDUSD;USDCAD** in symbol line 1 to trade these currency pairs.
- Correct Input Examples:
  - **EURUSD;GBPUSD;USDJPY** (valid currency pairs, semicolon-separated)
  - **XAUUSD;WTI** (includes commodities, correctly formatted)
- Incorrect Input Examples:
  - **EURUSD,USDJPY** (commas instead of semicolons, causes error)
  - **EURUSD;;GBPUSD** (double semicolon, invalid format, stops MasterEA)
  - **INVALIDPAIR;USDJPY** (non-existent symbol, triggers error)

### symbol line 2

- Default Value: "" (empty)
- Description: This field extends the symbol list, providing additional space to specify more financial instruments for trading. It uses the same semicolon-separated format.

### symbol line 3

- Default Value: "" (empty)
- Description: This field extends the symbol list, providing additional space to specify more financial instruments for trading. It uses the same semicolon-separated format.

### symbol line 4

- Default Value: "" (empty)



- Description: This field extends the symbol list, providing additional space to specify more financial instruments for trading. It uses the same semicolon-separated format.

### symbol or combo nr

- Default Value: **0**
- Description: This field is used for symbol processing. No user input required.

## Live Operation Settings

These settings control the MasterEA's behavior during live trading, focusing on data handling, risk management, and visual display options.

### load data from

- Default Value: **inputs**
- Description: This parameter determines whether the MasterEA uses only the user-provided input settings or also loads saved data from files during live trading. The **inputs and files** option retrieves previous trading states, such as past positions or settings, ensuring continuity if the MasterEA or MT5 platform restarts, which is useful for maintaining consistent strategy performance. At the first start, this input must be **inputs**, as no data files have yet been created. The input should then be changed to **inputs and files**. If the EA generates an error, the EA should also be restarted with **inputs** to prevent the old error from being loaded from the files.

### draw indicators

- Default Value: **true**
- Description: The `InpDrawObjects` parameter controls whether the MasterEA displays visual elements, such as lines, arrows, or indicators, on the MT5 chart to illustrate its trading signals and actions, providing real-time feedback on its behavior.
- Usage Example: Enable `InpDrawObjects` (**true**) during strategy testing to visualize signals and filters on the chart, disable it (**false**) for a cleaner interface.

## Risk Settings

These settings allow the MasterEA risk to be controlled at account and strategy level.

### min equity

- Default Value: **0**
- Description: This parameter sets a minimum equity threshold (in the account's currency) for the trading account. If the account's equity falls

below this level, the MasterEA stops all trading activities to protect the account from further losses, acting as a safety mechanism to preserve capital in adverse market conditions or false user inputs. The **min equity** is checked at every valid tick. For faster backtesting, it is recommended to deactivate this function in the strategy tester.

- Usage Example: Set **min equity** to **6000** for a \$10,000 account to halt trading if equity drops below \$6,000.
- Correct Input Examples:
  - **0** (disables min equity protection)
- Incorrect Input Examples:
  - A number greater or equal to the account equity

### max floating

- Default Value: **0**
- Description: This parameter sets a maximum threshold (in the account's currency) for the floating loss of the account. If the account's floating loss exceeds this level, the MasterEA stops all trading activities to protect the account from further losses. The **max floating** protection is checked at every valid tick. For faster backtesting, it is recommended to deactivate this function in the strategy tester.
- Usage Example: Set **max floating** to **500** for a \$10,000 account to halt trading if floating loss of all open positions exceeds -500\$.
- Correct Input Examples:
  - **0** (disables max floating protection)
- Incorrect Input Examples:
  - A number greater or equal to the account equity

### max drawdown

- Default Value: **0**
- Description: This parameter defines the maximum loss (in the account's currency) that the MasterEA's specific strategy can incur before it stops trading. It focuses on strategy-level risk control, stopping the MasterEA if the strategy's drawdown exceeds this limit, allowing to stop one strategy without affecting other account activities. The **max drawdown** is checked at every valid tick, but keep in mind that the drawdown of a strategy is only updated once a position is closed. For faster backtesting, it is recommended to deactivate this function in the strategy tester.
- Usage Example: Set **max drawdown** to **2000** for a strategy to pause trading if the strategy's losses exceed \$2,000 from its high, protecting against poor performance while allowing other strategies to continue. Set to **0** to disable this limit.
- Correct Input Examples:
  - **2000** (pauses strategy if losses exceed \$2,000 from strategy high)
  - **0** (disables max drawdown protection)

## max daily dd

- Default Value: **0**
- Description: This parameter sets a maximum threshold (in the account's currency) for the daily drawdown of the account. If the account's daily drawdown exceeds this level, the MasterEA stops all trading activities to protect the account from further losses. The value is calculated from the closed positions of the current day and all open positions. The 24h time window for the closed positions is fixed and resets at midnight. It is displayed on the panel settings tab. The **max daily dd** protection is checked at every valid tick. For faster backtesting, it is recommended to deactivate this function in the strategy tester.
- Usage Example: Set **max daily dd** to **500** for a \$10,000 account to halt trading if current day closed positions plus open positions exceed -500\$.
- Correct Input Examples:
  - **0** (disables max daily dd protection)
- Incorrect Input Examples:
  - A number greater or equal to the account equity

## max daily drawdown offset in hours

- Default Value: **0**
- Description: This parameter shifts the time window for the **max daily dd** protection. This is useful if you run the EA on a prop firm account where the max daily drawdown rule resets at a different time than the MT5 server time. The currently used time window for closed positions is displayed on the settings tab of the panel. This time window is only relevant for closed positions (closing time) and not for open positions.
- Usage Example: Set **max daily drawdown offset in hours** to **2** to get a time window from 02:00-01:59.
- Incorrect Input Examples:
  - A number outside the range of -23 to 23

## Tester settings, single test

These settings control the MasterEA's behavior during individual test runs in the MT5 Strategy Tester, focusing on reporting and visual display options.

## create single test performance report

- Default Value: **false**
- Description: This parameter determines whether the MasterEA generates a detailed performance report for a single test run in the MT5 Strategy Tester. When enabled, it creates a comprehensive report file (e.g., PerformanceReport.txt) that includes performance metrics, trade details, and input settings, helping traders analyze the strategy's results for a specific test. Read more about the performance report [here](#).

## hide panel in visual testing

- Default Value: **false**
- Description: This parameter controls whether the MasterEA hides its visual panel during visual testing in the MT5 Strategy Tester. When enabled, the panel (which typically displays real-time trading information) is not shown, resulting in a cleaner chart interface, which is useful for focusing on price action or reducing distractions during visual backtests.

## Tester Settings, optimization

These settings configure the MasterEA's behavior during optimization runs in the MT5 Strategy Tester, focusing on trade requirements, optimization criteria, and reporting options.

### minimum trades for a valid run

- Default Value: **0**
- Description: This parameter sets the minimum number of trades required for a test run to be considered valid during optimization in the MT5 Strategy Tester. If the number of trades in a run is below this threshold, the MasterEA discards the results, ensuring only runs with sufficient trading activity are evaluated, which helps filter out unreliable optimization outcomes.
- Usage Example: Set this input to **50** when optimizing a strategy to ensure only test runs with at least 50 trades are considered, improving the reliability of optimization results by excluding runs with too few trades.
- Correct Input Examples:
  - **50** (requires at least 50 trades for a valid run)
  - **0** (no minimum trade requirement, default behavior)

### custom optimization criteria

- Default Value: **no custom criteria**
- Description: This parameter defines the custom optimization criterion used to evaluate test runs during optimization in the MT5 Strategy Tester. It allows traders to select a specific performance metric to rank optimization results, such as balance, profit factor, or a custom formula like **optiPro**.
- Usage Example: Set the input to **profit / mean drawdown** to optimize a strategy based on the profit-to-mean-drawdown ratio, prioritizing runs that maximize profit while minimizing average drawdown for balanced performance.

### create optimization report

- Default Value: **false**

- Description: This parameter determines whether the MasterEA generates a detailed optimization report after completing an optimization in the MT5 Strategy Tester. The report (e.g., OptimizationReport.txt) includes statistics for all optimization passes, such as results, trades, and performance metrics, requiring a custom criterion (set via custom optimization criteria) to rank the passes. Read more about the optimization report [here](#).
- Usage Example: Set this input to **true** and custom optimization criteria to **profit factor** when optimizing a strategy to produce a report detailing each pass's profit factor, trade count, and other metrics, aiding in selecting the best parameter set.

### run neighbor analysis

- Default Value: **false**
- Description: This parameter enables or disables neighbor analysis during optimization in the MT5 Strategy Tester. When activated, the MasterEA analyzes the performance of neighboring parameter values for each optimization pass, calculating metrics like the average and lowest results of nearby parameter combinations. This helps assess the stability of parameter sets by checking how similar settings perform, requiring an optimization report to be enabled (create optimization report set to true). Read more about the neighbor analysis [here](#).
- Usage Example: Set this parameter to **true** with to analyze how parameter sets perform compared to similar settings, identifying robust configurations that maintain performance across slight variations, such as a stop-loss range.

### number of neighbors for each parameter

- Default Value: **1;0;2**
- Description: This parameter specifies the number of neighboring parameter values to consider for each optimized parameter during neighbor analysis, entered as a semicolon-separated string (e.g., **1;0;2** for three parameters). Each number indicates how many steps to the left and right of the current parameter value to include in the analysis, helping evaluate the stability of parameter sets. It is only used when **run neighbor analysis** is **true** and must match the number of optimized parameters.
- Usage Example: Set this parameter to **2;1;0** when optimizing three parameters (e.g., stop-loss, take-profit, and period) to analyze two neighbors for the first, one for the second, and none for the third, ensuring the stop-loss setting is robust across a wider range of values.
- Correct Input Examples:
  - 1;0;2 (analyzes 1 neighbor for parameter 1, 0 for parameter 2, 2 for parameter 3)
- Incorrect Input Examples:

- 1;2 (mismatches number of optimized parameters, e.g., if three are optimized, causes error)
- -1;0;2 (negative values invalid, triggers error)
- 1,0;2 (commas instead of semicolons, causes error)

## Panel settings

These settings control the appearance and behavior of the MasterEA's visual panel, particularly useful during backtesting and live monitoring.

### active tab

- Default Value: **overview**
- Description: This parameter determines which tab of the visual panel is initially displayed when the EA starts. During visual testing, if set to **switch at month start**, the panel will automatically cycle through all tabs at the start of each month to show the different views. If set to any other value, that specific tab will remain active throughout the visual test or live session.

### panel size

- Default Value: **auto**
- Description: This parameter controls how the panel's size is determined.
  - **auto**: The panel automatically scales its size based on the monitor's settings, attempting to maintain a consistent visual size across different resolutions.
  - **custom**: Allows the user to explicitly set the panel's width and height using the **width in pixel** and **height in pixel** parameters.

### width in pixel

- Default Value: **1000**
- Description: This parameter sets the custom width of the panel in pixels. It is only relevant and used when the **panel size** parameter is set to **custom**.
- Correct Input Examples:
  - **800** (Sets the panel width to 800 pixels)
  - **1200** (Sets the panel width to 1200 pixels)
- Incorrect Input Examples:
  - **0** (Width must be greater than 0, causes an error)
  - **-100** (Negative values are not allowed, causes an error)

### height in pixel

- Default Value: **700**

- Description: This parameter sets the custom height of the panel in pixels. It is only relevant and used when the **panel size** parameter is set to **custom**.
- Correct Input Examples:
  - **600** (Sets the panel height to 600 pixels)
  - **900** (Sets the panel height to 900 pixels)
- Incorrect Input Examples:
  - **0** (Height must be greater than 0, causes an error)
  - **-50** (Negative values are not allowed, causes an error)

## font size

- Default Value: **10**
- Description: This parameter sets the custom font size for the text within the panel. It is only relevant and used when the **panel size** parameter is set to **custom**.
- Correct Input Examples:
  - **8** (Sets the font size to 8)
  - **12** (Sets the font size to 12)
- Incorrect Input Examples:
  - **0** (Font size must be greater than 0, causes an error)
  - **-5** (Negative values are not allowed, causes an error)

## panel colors

- Default Value: **dark**
- Description: This parameter selects the color theme for the panel.
  - **dark:** Applies a dark color scheme.
  - **light:** Applies a light color scheme.
  - **custom:** Allows the user to specify custom colors for various panel elements using the individual color inputs below.

## color caption

- Default Value: **Aqua**
- Description: Sets the color for main caption text within the panel.

## color sub caption

- Default Value: **Aqua**
- Description: Sets the color for sub-caption text within the panel.

## color text 1

- Default Value: **White**
- Description: Sets the primary standard text color used in the panel.

### color text 2

- Default Value: **Gray**
- Description: Sets the secondary standard text color used in the panel, often for less prominent information.

### color text status

- Default Value: **DarkGray**
- Description: Sets the color for status text or indicators in the panel.

### color text ok

- Default Value: **Lime**
- Description: Sets the text color used to indicate successful operations or positive status.

### color text warning

- Default Value: **Coral**
- Description: Sets the text color used to indicate warnings or potential issues.

### color text error

- Default Value: **Red**
- Description: Sets the text color used to indicate errors or critical issues.

### color tab active

- Default Value: **21,21,21**
- Description: Sets the background color for the currently active tab button.

### color tab inactive

- Default Value: **53,53,53**
- Description: Sets the background color for inactive tab buttons.

### color tab font active

- Default Value: **Aqua**
- Description: Sets the font color for the text on the currently active tab button.

### color tab font inactive

- Default Value: **WhiteSmoke**
- Description: Sets the font color for the text on inactive tab buttons.



### color tab border

- Default Value: **32,32,32**
- Description: Sets the border color for the tab buttons.

### color tab background

- Default Value: **32,32,32**
- Description: Sets the background color for tab buttons.

### color panel background

- Default Value: **16,16,16**
- Description: Sets the main background color for the panel's client area, beneath the tabs.

### color graph background

- Default Value: **White**
- Description: Sets the background color for the graphs displayed within the panel.

### color graph grid background

- Default Value: **32,32,32**
- Description: Sets the background color specifically for the grid area within the graphs.

### color graph grid

- Default Value: **DimGray**
- Description: Sets the color for the grid lines on the graphs.

### color graph line

- Default Value: **Aqua**
- Description: Sets the color for the data lines drawn on the graphs (e.g., equity curve).

## Trade operation settings

These settings configure the MasterEA's trade execution and management, including lot size calculation, maximum positions allowed, and stop loss/take profit configurations.

### lot mode

- Default Value: **fixed lots**

- Description: This parameter determines the method used to calculate the trading lot size for new positions.
  - **fixed lots:** Uses a fixed lot size specified by **lots / amount / %**
  - **lots based on risk in money:** Calculates lot size based on a fixed monetary risk amount specified by **lots / amount / %**
  - **lots based on % of account:** Calculates lot size based on a percentage of the account equity specified by **lots / amount / %**

### lots / amount / %

- Default Value: **1.0**
- Description: This parameter specifies the value used for lot size calculation, depending on the selected lot mode. It can represent a fixed lot size, a monetary risk amount, or a percentage of account equity.
- Correct Input Examples:
  - **0.1** (A valid fixed lot size)
  - **100.0** (A valid monetary risk amount)
  - **0.5** (A valid percentage of account)
- Incorrect Input Examples:
  - **-0.5** (Negative values are not allowed)
  - **0** (Zero is invalid)

### max buy positions per symbol

- Default Value: **max buy positions per symbol**
- Description: This parameter sets the maximum number of simultaneous buy positions allowed for a single symbol.
- Correct Input Examples:
  - no positions (Allows no buy positions for the symbol)
  - 1 (Allows up to 1 buy position for the symbol)
  - 10 (Allows up to 10 buy positions for the symbol)

### max sell positions per symbol

- Default Value: **max sell positions per symbol**
- Description: This parameter sets the maximum number of simultaneous sell positions allowed for a single symbol.
- Correct Input Examples:
  - no positions (Allows no sell positions for the symbol)
  - 1 (Allows up to 1 sell position for the symbol)
  - 10 (Allows up to 10 sell positions for the symbol)

### stop loss mode

- Default Value: **no stop loss**
- Description: This parameter defines the method used to calculate the stop loss level for new positions.

- **no stop loss** (No stop loss is used)
- **stop loss in pips** (Stop loss is set based on a fixed pip distance)
- **stop loss as factor of ATR** (Stop loss is calculated as a factor of the Average True Range)
- **stop loss as % of the market** (Stop loss is calculated as a percentage of the market price)
- **stop loss as factor of standard deviation** (Stop loss is calculated as a factor of the Standard Deviation)
- **stop loss as % of extreme (high/low)** (Stop loss is calculated based on recent price extremes)
- **stop loss as % of entry signal** (Stop loss is calculated as a percentage relative to the used entry signal)

## stop loss

- Default Value: **0**
- Description: This parameter specifies the value used for stop loss calculation, depending on the selected stop loss mode. Its meaning varies (pips, ATR factor, percentage, etc.) based on the **stop loss mode**.
- Correct Input Examples:
  - **50** (If stop loss in pips, represents 50 pips)
  - **1.5** (If stop loss as factor of ATR, represents 1.5 times the ATR value)
- Incorrect Input Examples:
  - **-10** (Negative values are not allowed if **no stop loss** is not selected)

## stop loss logic

- Default Value: **stop loss logic**
- Description: This parameter determines how the stop loss level is managed after a position is opened.
  - fixed stop loss (The stop loss remains at its initial level)
  - price trailing (The stop loss trails the price)
  - time trailing (The stop loss trails based on time elapsed)

## trailing per hour, % of sl

- Default Value: **0**
- Description: This parameter is used when **stop loss logic** is set to **time trailing**. It specifies the percentage of the initial stop loss distance that the stop loss will trail per hour.
- Correct Input Examples:
  - **1.0** (Trails 1% of the initial stop loss distance per hour)
  - **0.5** (Trails 0.5% of the initial stop loss distance per hour)
- Incorrect Input Examples:
  - **0** (Zero is not allowed when stop loss logic is time trailing)
  - **-1.0** (Negative values are not allowed)

## stop loss soft mode

- Default Value: **no stop loss**
- Description: This parameter defines the method used to calculate a "soft" stop loss level. This soft stop loss can trigger an exit signal to close a position. The calculation methods are the same as **stop loss mode**.

## stop loss soft

- Default Value: **50**
- Description: This parameter specifies the value used for the soft stop loss calculation, depending on the selected **stop loss soft mode**. Its meaning varies based on the mode.
- Correct Input Examples:
  - 30 (If stop loss in pips, represents 30 pips)
  - 1.5 (If stop loss as factor of ATR, represents 1.5 times the ATR value)
- Incorrect Input Examples:
  - **-20** (Negative values are not allowed if **no stop loss** is not selected)

## take profit mode

- Default Value: **no take profit**
- Description: This parameter defines the method used to calculate the take profit level for new positions.
  - **no take profit** (No take profit is used)
  - **take profit in pips** (Take profit is set based on a fixed pip distance)
  - **take profit as factor of ATR** (Take profit is calculated as a factor of the Average True Range)
  - **take profit as % of the market** (Take profit is calculated as a percentage of the market price)
  - **take profit as factor of standard deviation** (Take profit is calculated as a factor of the Standard Deviation)
  - **take profit as % of extreme (high/low)** (Take profit is calculated based on recent price extremes)
  - **take profit as % of stop loss** (Take profit is calculated as a percentage relative to the stop loss distance)
  - **take profit as % of signal** (Take profit is calculated as a percentage relative to the used entry signal)

## take profit

- Default Value: **100**
- Description: This parameter specifies the value used for take profit calculation, depending on the selected **take profit mode**. Its meaning varies (pips, ATR factor, percentage, etc.) based on the mode.
- Correct Input Examples:
  - **100** (If take profit in pips, represents 100 pips)

- **2.0** (If take profit as factor of ATR, represents 2.0 times the ATR value)
- Incorrect Input Examples:
- **-50** (Negative values are not allowed if **no take profit** is not selected)

## ATR for stop loss / take profit

### timeframe

- Default Value: **1 Hour**
- Description: This parameter sets the chart timeframe used for calculating the Average True Range (ATR) when **stop loss mode** or **take profit mode** is set to **stop loss as factor of ATR** or **take profit as factor of ATR**.
- Incorrect Input Examples:
  - **current** (Not allowed, must be a specific timeframe)
  - A timeframe smaller than the **modeling timeframe**
  - A timeframe that is not a multiple of the tester timeframe in strategy tester

### period

- Default Value: **14**
- Description: This parameter sets the number of bars used for calculating the Average True Range (ATR) when **stop loss mode** or **take profit mode** is set to **stop loss as factor of ATR** or **take profit as factor of ATR**.
- Correct Input Examples:
  - **20** (A valid period between 1 and 300)
- Incorrect Input Examples:
  - **0** (Zero is not allowed)
  - **-10** (Negative values are not allowed)
  - **350** (Exceeds the maximum allowed period)

## Standard deviation for stop loss / take profit

### timeframe

- Default Value: **1 Hour**
- Description: This parameter sets the chart timeframe used for calculating the Standard Deviation when **stop loss mode** or **take profit mode** is set to **stop loss as factor of standard deviation** or **take profit as factor of standard deviation**.
- Incorrect Input Examples:
  - **current** (Not allowed, must be a specific timeframe)
  - A timeframe smaller than the **modeling timeframe**
  - A timeframe that is not a multiple of the tester timeframe in strategy tester

## period

- Default Value: **14**
- Description: This parameter sets the number of bars used for calculating the Standard Deviation when **stop loss mode** or **take profit mode** is set to **stop loss as factor of standard deviation** or **take profit as factor of standard deviation**.
- Correct Input Examples:
  - **20** (A valid period between 1 and 300)
- Incorrect Input Examples:
  - **0** (Zero is not allowed)
  - **-10** (Negative values are not allowed)
  - **350** (Exceeds the maximum allowed period)

## Extreme for stop loss / take profit

### timeframe

- Default Value: **1 Hour**
- Description: This parameter sets the chart timeframe used for calculating price extremes when **stop loss mode** or **take profit mode** is set to **stop loss as % of extreme (high/low)** or **take profit as % of extreme (high/low)**.
- Incorrect Input Examples:
  - **current** (Not allowed, must be a specific timeframe)
  - A timeframe smaller than the **modeling timeframe**
  - A timeframe that is not a multiple of the tester timeframe in strategy tester

### bars

- Default Value: **14**
- Description: This parameter sets the number of bars used for calculating price extremes when **stop loss mode** or **take profit mode** is set to **stop loss as % of extreme (high/low)** or **take profit as % of extreme (high/low)**.
- Correct Input Examples:
  - **20** (A valid period between 1 and 300)
- Incorrect Input Examples:
  - **0** (Zero is not allowed)
  - **-10** (Negative values are not allowed)
  - **350** (Exceeds the maximum allowed period)

## Time range entry signal

These settings configure the MasterEA's time range entry signal functionality, including its mode, signal generation method, direction, reference points, and breakout levels.

## mode

- Default Value: **Inactive**
- Description: This parameter controls whether the Time Range Entry Signal is inactive or used for entry signals.

## method

- Default Value: **One signal per range**
- Description: This parameter determines the number of signals generated per range.
  - **One signal per range**: Only one signal (either buy or sell) can be generated within a calculated range.
  - **One signal per side**: Allows for one buy signal and one sell signal to be generated within a calculated range.

## direction

- Default Value: **Normal** Description: This parameter sets the direction of the trading signals.
- **Normal**: Generates a buy signal on a high breakout and a sell signal on a low breakout.
- **Reversed**: Generates a sell signal on a high breakout and a buy signal on a low breakout.

## reference point

- Default Value: **daily**
- Description: This parameter defines the starting point for calculating the time range.
  - **Daily**: The reference is 00:00 of the current day.
  - **Weekly**: The reference is Monday at 00:00 of the current week.
  - **Monthly**: The reference is the first day of the current month at 00:00.

## range start time in minutes after reference point

- Default Value: **600**
- Description: This specifies the start time of the range in minutes after the **reference point**.
- Correct Input Examples:
  - **600** (10 hours after the reference point)
  - **0** (at the reference point).
- Incorrect Input Examples:
  - **1500** (for daily reference, exceeds 1440 minutes).

## range end as duration in minutes from range start

- Default Value: **120**

- Description: This sets the duration of the range in minutes, beginning from the range start.
- Correct Input Examples:
  - **120** (2 hours duration)
- Incorrect Input Examples:
  - **12400** (for daily reference, exceeds 10080 minutes).

### reset time in minutes after reference point

- Default Value: **1080**
- Description: This sets the time in minutes after the **reference point** when a new range calculation should occur. This only happens if there are no open trades from the current range.
- Correct Input Examples:
  - **1080** (18 hours after reference)
  - **-1** (disables reset time).
- Incorrect Input Examples:
  - For daily reference **1500** would be invalid as it exceeds 1440 minutes.

### breakout level 1 active

- Default Value: **false**
- Description: If **true**, the price must break this level instead of the exact range high/low for the first breakout.

### breakout lvl 1 in %

- Default Value: **50**
- Description: This is the percentage level for the first breakout. **0%** is at the range high, and **-100%** is at the range low. For low breakouts, the level is mirrored.

### breakout level 2 active

- Default Value: **false**
- Description: If **true**, the price must break this level after the **first breakout level** for the position to open. This level is only active if the **breakout lvl 1** is also **true**.

### breakout lvl 2 in %

- Default Value: **50**
- Description: This is the percentage level for the second breakout. Similar to **breakout lvl 1**, **0%** is at the range high, and **-100%** is at the range low. The level is mirrored for low breakouts.



## exclude sunday as a trading day

- Default Value: **true**
- Description: If **true**, Sunday will be excluded as a trading day. If a range's end time falls on a Sunday, it will be shifted to the next valid trading day.

## Day of week filter

### reference point on monday

- Default Value: **true**
- Description: If **reference point** is **daily**, setting this to **true** allows range calculation on Mondays. If **false**, range calculation is prevented.

### reference point on tuesday

- Default Value: **true**
- Description: If **reference point** is **daily**, setting this to **true** allows range calculation on Tuesdays. If **false**, range calculation is prevented.

### reference point on wednesday

- Default Value: **true**
- Description: If **reference point** is **daily**, setting this to **true** allows range calculation on Wednesdays. If **false**, range calculation is prevented.

### reference point on thursday

- Default Value: **true**
- Description: If **reference point** is **daily**, setting this to **true** allows range calculation on Thursdays. If **false**, range calculation is prevented.

### reference point on friday

- Default Value: **true**
- Description: If **reference point** is **daily**, setting this to **true** allows range calculation on Fridays. If **false**, range calculation is prevented.

### reference point on sunday

- Default Value: **false**
- Description: If **reference point** is **daily**, setting this to **true** allows range calculation on Sundays. If **false**, range calculation is prevented. This interacts with **exclude sunday as a trading day**.

## object color

- Default Value: **Blue**

- Description: This sets the **color** for the visual objects (e.g., lines) drawn on the chart by the **Time range entry signal**.

## Time Entry Signal Settings

These settings configure the time-based entry signals for the MasterEA, allowing users to define specific times for initiating buy or sell trades based on daily, weekly, or monthly reference points.

### mode

- Default Value: **entry signals**
- Description: This parameter determines whether the time entry signal functionality is active.

### expire in minutes for entries

- Default Value: **10**
- Description: This parameter specifies the duration (in minutes) after which a time entry signal expires if no trade is executed. This might happen if there is a data gap or connection loss. The EA will not open trades based on a time entry signal after this period has elapsed.
- Correct Input Examples:
  - **5** (Sets expiration to 5 minutes)
  - **15** (Sets expiration to 15 minutes)
- Incorrect Input Examples:
  - **0** (Expiration must be greater than 0, causes an error)
  - **-5** (Negative values are not allowed, causes an error)

### time period

- Default Value: **daily reference point at 00:00**
- Description: This parameter defines the reference period for calculating time entry signals.
  - **daily reference point at 00:00**: Uses the start of the current day (00:00) as the reference, with time entries specified in minutes (0–1439).
  - **weekly reference point at monday 00:00**: Uses the start of the current week (Monday 00:00) as the reference, with time entries specified in minutes (0–10079).
  - **monthly reference point at start of the month**: Uses the start of the current month (1st at 00:00) as the reference, with time entries specified in minutes (0–44639).

### time entry 1 mode

- Default Value: **buy entry**

- Description: This parameter specifies the type of trade to initiate for the first time entry signal.
  - buy entry: Opens a buy position at the specified time.
  - sell entry: Opens a sell position at the specified time.
  - buy and sell entry: Opens both buy and sell positions at the specified time.

### time entry 1

- Default Value: **900**
- Description: This parameter sets the time (in minutes) added to the reference point for the first time entry signal. A value of -1 disables this time entry. The valid range depends on the selected time period (e.g., 0–1439 for daily, 0–10079 for weekly, 0–44639 for monthly).
- Correct Input Examples:
  - **900** (Sets time entry at 15:00 for daily reference, i.e., 900 minutes after 00:00)
  - **-1** (Disables time entry 1)
- Incorrect Input Examples:
  - **1440** (Exceeds daily limit if time period is daily, causes an error)
  - **-10** (Negative values other than -1 are not allowed, causes an error)

### object color

- Default Value: **Green**
- Description: This parameter sets the color of the vertical line objects drawn on the chart to represent time entry signals. These objects are visible when the EA is run in visual mode or when object drawing is enabled.

## Moving Average signal

These settings configure the Moving Average (MA) signal functionality for the MasterEA, enabling the definition of trade signals based on price interactions with moving averages, turning points, inflection points, or moving average crossovers (Signal 1 and Signal 2).

### mode

- Default Value: **inactive**
- Description: This parameter determines whether the Moving Average signal functionality is active.
  - **inactive**: Moving Average signal is inactive.
  - **entry signals**: Enables MA-based entry signals for opening trades.
  - **entry and exit signals**: Moving Average is used for entry and exit.
  - **exit signals**: Enables MA-based exit signals for closing trades.

- **exit signal after soft stop loss:** Once the soft stop loss is triggered the moving average signal is used to exit positions.

## method

- Default Value: **price crosses ma**
- Description: This parameter specifies the method used to generate Moving Average signals.
  - **price crossover:** Signals are generated when the price crosses the moving average.
  - **ma turning points:** Signals are generated based on turning points in the moving average.
  - **ma inflection points:** Signals are generated based on inflection points in the moving average.
  - **ma crossover:** Signals are generated when the fast moving average crosses the slow moving average (requires slow period > 0).
  - **price-ma distance:** Signals are generated when the distance between price and ma exceeds the set threshold. This threshold is set in the **price-ma distance settings** section.

## direction

- Default Value: **normal**
- Description: This parameter determines the direction interpretation of Moving Average signals.
  - **normal:** Buy signals are generated on upward movements (e.g., price crossing above MA), and sell signals on downward movements.
  - **reverse:** Buy signals are generated on downward movements, and sell signals on upward movements.

## timeframe

- Default Value: **1 Hour**
- Description: This parameter specifies the chart timeframe used for calculating the Moving Average signals. It must be equal to or greater than the **modeling timeframe** and, in testing mode, a multiple of the tester timeframe.
- Incorrect Input Examples:
  - **current** (Cannot be 'current', causes an error)

## period

- Default Value: **14**
- Description: This parameter sets the period (number of bars) for the fast moving average calculation. It must be between 1 and 300.
- Correct Input Examples:
  - **14** (Sets fast MA period to 14 bars)

- **50** (Sets fast MA period to 50 bars)
- Incorrect Input Examples:
  - **0** (Period must be greater than 0, causes an error)
  - **301** (Exceeds maximum limit of 300, causes an error)

## confirmation bars

- Default Value: **3**
- Description: This parameter specifies the number of bars required to confirm a Moving Average signal before it is considered valid for generating a trade entry or exit. E.g. for the **price crosses ma** method, it verifies that the price remains above (for buy signals) or below (for sell signals) the fast moving average for the specified number of bars.
- Correct Input Examples:
  - **3** (Requires 3 bars for confirmation)
  - **10** (Requires 10 bars for confirmation)
- Incorrect Input Examples:
  - **-1** (Negative values are not allowed, causes an error)
  - **201** (Exceeds maximum limit of 200, causes an error)

## ma color

- Default Value: **Blue**
- Description: This parameter sets the color of the moving average line displayed on the chart when the EA is run in visual mode or when object drawing is enabled.

## MA crossover settings

### period for slow moving average

- Default Value: **0**
- Description: This parameter sets the period (number of bars) for the slow moving average calculation, used only when the method is set to **moving avg. crossover**. It must be between 1 and 300 and greater than the **fast period**, or 0 if not used.
- Correct Input Examples:
  - **0** (if not used)
  - **50** (Sets slow MA period to 50 bars)
- Incorrect Input Examples:
  - **0** (if **method** is set to **moving avg. crossover**)

## slow ma color

- Default Value: **Red**

- Description: This parameter sets the color of the slow moving average line displayed on the chart when the EA is run in visual mode or when object drawing is enabled, and the slow period is greater than 0.

## Price-MA distance settings

### trigger level as factor of ATR

- Default Value: **0.0**
- Description: This parameter sets the distance for the trigger level as a factor of the ATR value. The ATR value used is calculated using the same period and timeframe as the moving average.
- Correct Input Examples:
  - **2.0** (Sets trigger level to  $ma \pm 2 \cdot ATR$ )
- Incorrect Input Examples:
  - **0** (if **method** is set to **price-ma distance**)
  - a negative value

## JRSX signal

These settings configure the Jurik Relative Strength Index (JRSX) signal functionality for the MasterEA, enabling the definition of trade signals based on the JRSX indicator's behavior in overbought or oversold regions, including entering, exiting, or turning points.

### mode

- Default Value: **inactive**
- Description: This parameter determines whether the JRSX signal functionality is active.
  - **inactive**: JRSX signal is inactive.
  - **entry signals**: Enables JRSX -based entry signals for opening trades.
  - **entry and exit signals**: JRSX is used for entry and exit.
  - **exit signals**: Enables JRSX -based exit signals for closing trades.
  - **exit signal after soft stop loss**: Once the soft stop loss is triggered the JRSX signal is used to exit positions.

### method

- Default Value: **entering overbought/sold**
- Description: This parameter specifies the method used to generate JRSX signals.
  - **entering overbought/sold**: Signals are generated when the JRSX enters the overbought (above the overbought level) or oversold (below 100 minus the overbought level) regions.

- **exiting overbought/sold:** Signals are generated when the JRSX exits the overbought or oversold regions.
- **turning points:** Signals are generated based on turning points in the JRSX within the overbought or oversold regions.

## direction

- Default Value: **normal**
- Description: This parameter determines the direction interpretation of JRSX signals.
  - normal: Buy signals are generated when JRSX indicates oversold conditions (e.g., entering oversold region), and sell signals when indicating overbought conditions.
  - reverse: Buy signals are generated when JRSX indicates overbought conditions, and sell signals when indicating oversold conditions.

## timeframe

- Default Value: **1 Hour**
- Description: This parameter specifies the chart timeframe used for calculating the JRSX signals. It must be equal to or greater than the **modeling timeframe** and, in testing mode, a multiple of the tester timeframe.
- Incorrect Input Examples:
  - **current** (Cannot be 'current', causes an error)

## period

- Default Value: **14**
- Description: This parameter sets the period (number of bars) for the JRSX indicator calculation.
- Correct Input Examples:
  - **14** (Sets JRSX period to 14 bars)
  - **50** (Sets JRSX period to 50 bars)
- Incorrect Input Examples:
  - **0** (Period must be greater than 0, causes an error)
  - **301** (Exceeds maximum limit of 300, causes an error)

## overbought level

- Default Value: **75**
- Description: This parameter sets the threshold level for the JRSX indicator to define overbought and oversold regions. Values above this level indicate overbought conditions, while values below (100 - overbought level) indicate oversold conditions. It must be between 0 and 100.
- Correct Input Examples:
  - **75** (Sets overbought level to 75, oversold to 25)

- **80** (Sets overbought level to 80, oversold to 20)
- Incorrect Input Examples:
  - **-1** (Negative values are not allowed, causes an error)
  - **101** (Exceeds maximum limit of 100, causes an error)

## confirmation bars

- Default Value: **0**
- Description: This parameter specifies the number of bars required to confirm a JRSX signal before it is considered valid for generating a trade entry or exit. E.g. for the **entering overbought/sold** method, it verifies that the JRSX remains outside the overbought region (below the overbought level) for sell signals or oversold region (above 100 minus the overbought level) for buy signals across the confirmation period.
- Correct Input Examples:
  - **3** (Requires 3 bars for confirmation)
  - **10** (Requires 10 bars for confirmation)
- Incorrect Input Examples:
  - **-1** (Negative values are not allowed, causes an error)
  - **201** (Exceeds maximum limit of 200, causes an error)

## RSI signal

These settings configure the Relative Strength Index (RSI) signal functionality for the MasterEA, enabling the definition of trade signals based on the RSI indicator's behavior in overbought or oversold regions, including entering, exiting, turning points, or inflection points.

## mode

- Default Value: **inactive**
- Description: This parameter determines whether the RSI signal functionality is active.
  - **inactive**: RSI signal is inactive.
  - **entry signals**: Enables RSI-based entry signals for opening trades.
  - **entry and exit signals**: RSI is used for entry and exit.
  - **exit signals**: Enables RSI-based exit signals for closing trades.
  - **exit signal after soft stop loss**: Once the soft stop loss is triggered the RSI signal is used to exit positions.

## method

- Default Value: **entering overbought/sold**
- Description: This parameter specifies the method used to generate RSI signals.



- **entering overbought/sold:** Signals are generated when the RSI enters the overbought (above the overbought level) or oversold (below 100 minus the overbought level) regions.
- **exiting overbought/sold:** Signals are generated when the RSI exits the overbought or oversold regions.
- **turning points:** Signals are generated based on turning points in the RSI within the overbought or oversold regions.
- **inflection points:** Signals are generated based on inflection points in the RSI.

## direction

- Default Value: **normal**
- Description: This parameter determines the direction interpretation of RSI signals.
  - normal: Buy signals are generated when RSI indicates oversold conditions (e.g., entering oversold region), and sell signals when indicating overbought conditions.
  - reverse: Buy signals are generated when RSI indicates overbought conditions, and sell signals when indicating oversold conditions.

## timeframe

- Default Value: **1 Hour**
- Description: This parameter specifies the chart timeframe used for calculating the RSI signal. It must be equal to or greater than the **modeling timeframe** and, in testing mode, a multiple of the tester timeframe.
- Incorrect Input Examples:
  - **current** (Cannot be 'current', causes an error)

## period

- Default Value: **14**
- Description: This parameter sets the period (number of bars) for the RSI indicator calculation.
- Correct Input Examples:
  - **14** (Sets RSI period to 14 bars)
  - **50** (Sets RSI period to 50 bars)
- Incorrect Input Examples:
  - **0** (Period must be greater than 0, causes an error)
  - **301** (Exceeds maximum limit of 300, causes an error)

## overbought level

- Default Value: **75**
- Description: This parameter sets the threshold level for the RSI indicator to define overbought and oversold regions. Values above this level indicate

overbought conditions, while values below (100 - overbought level) indicate oversold conditions. It must be between 0 and 100.

- Correct Input Examples:
  - **75** (Sets overbought level to 75, oversold to 25)
  - **80** (Sets overbought level to 80, oversold to 20)
- Incorrect Input Examples:
  - **-1** (Negative values are not allowed, causes an error)
  - **101** (Exceeds maximum limit of 100, causes an error)

## confirmation bars

- Default Value: **0**
- Description: This parameter specifies the number of bars required to confirm a RSI signal before it is considered valid for generating a trade entry or exit. E.g. for the **entering overbought/sold** method, it verifies that the RSI remains outside the overbought region (below the overbought level) for sell signals or oversold region (above 100 minus the overbought level) for buy signals across the confirmation period.
- Correct Input Examples:
  - **3** (Requires 3 bars for confirmation)
  - **10** (Requires 10 bars for confirmation)
- Incorrect Input Examples:
  - **-1** (Negative values are not allowed, causes an error)
  - **201** (Exceeds maximum limit of 200, causes an error)

## line color

- Default Value: **Blue**
- Description: This parameter sets the color of the RSI indicator line displayed on the chart when the EA is run in visual mode or when object drawing is enabled.

## Stochastic signal

These settings configure the Stochastic signal functionality for the MasterEA, enabling the definition of trade signals based on the Stochastic oscillator's behavior in overbought or oversold regions for two independent signal configurations (Signal 1 and Signal 2). Each configuration supports signals based on entering, exiting, turning points, inflection points, or signal line crossovers.

## mode

- Default Value: **inactive**
- Description: This parameter determines whether the **Stochastic signal** functionality is active.
  - **inactive**: Stochastic signal is inactive.

- **entry signals:** Enables Stochastic-based entry signals for opening trades.
- **entry and exit signals:** Stochastic is used for entry and exit.
- **exit signals:** Enables Stochastic-based exit signals for closing trades.
- **exit signal after soft stop loss:** Once the soft stop loss is triggered the Stochastic signal is used to exit positions.

## method

- Default Value: **entering overbought/sold**
- Description: This parameter specifies the method used to generate Stochastic signal.
  - **entering overbought/sold:** Signals are generated when the Stochastic main line enters the overbought (above the overbought level) or oversold (below 100 minus the overbought level) regions.
  - **exiting overbought/sold:** Signals are generated when the Stochastic main line exits the overbought or oversold regions.
  - **turning points:** Signals are generated based on turning points in the Stochastic main line within the overbought or oversold regions.
  - **inflection points:** Signals are generated based on inflection points in the Stochastic main line, indicating changes in momentum rate.
  - **signal line crossovers:** Signals are generated when the Stochastic main line crosses the signal line within the overbought or oversold regions (requires **d-period**  $\geq 2$ ).

## direction

- Default Value: **normal**
- Description: This parameter determines the direction interpretation of Stochastic signal.
  - **normal:** Buy signals are generated when Stochastic indicates oversold conditions (e.g., entering oversold region), and sell signals when indicating overbought conditions.
  - **reverse:** Buy signals are generated when Stochastic indicates overbought conditions, and sell signals when indicating oversold conditions.

## confirmation bars

- Default Value: **3**
- Description: This parameter specifies the number of bars required to confirm a Stochastic signal before it is considered valid for generating a trade entry or exit. E.g. for the **entering overbought/sold** method, it verifies that the Stochastic remains outside the overbought region (below the overbought level) for sell signals or oversold region (above 100 minus the overbought level) for buy signals across the confirmation period.

- Correct Input Examples:
  - **3** (Requires 3 bars for confirmation)
  - **10** (Requires 10 bars for confirmation)
- Incorrect Input Examples:
  - **-1** (Negative values are not allowed, causes an error)
  - **201** (Exceeds maximum limit of 200, causes an error)

## timeframe

- Default Value: **1 Hour**
- Description: This parameter specifies the chart timeframe used for calculating the Stochastic signal. It must be equal to or greater than the **modeling timeframe** and, in testing mode, a multiple of the tester timeframe.
- Incorrect Input Examples:
  - **current** (Cannot be 'current', causes an error)

## k-period

- Default Value: **5**
- Description: This parameter sets the number of bars used to calculate the %K line (main line) of the Stochastic oscillator signal.
- Correct Input Examples:
  - **5** (Sets %K period to 5 bars)
  - **14** (Sets %K period to 14 bars)
- Incorrect Input Examples:
  - **0** (Period must be greater than 0, causes an error)
  - **301** (Exceeds maximum limit of 300, causes an error)

## d-period

- Default Value: **1**
- Description: This parameter sets the number of bars used to calculate the %D line (signal line) of the Stochastic oscillator signal. For methods other than **signal line crossovers**, it must be 1.
- Correct Input Examples:
  - **1** (Sets %D period to 1 bar, used for non-crossover methods)
  - **3** (Sets %D period to 3 bars, valid for signal line crossovers)
- Incorrect Input Examples:
  - **0** (Period must be at least 1, causes an error)
  - **1** (Invalid for signal line crossovers, causes an error)

## slowing

- Default Value: **3**
- Description: This parameter sets the slowing factor applied to the Stochastic oscillator signal, smoothing the %K line to reduce noise.

- Correct Input Examples:
  - **3** (Sets slowing to 3 bars)
  - **5** (Sets slowing to 5 bars)
- Incorrect Input Examples:
  - **0** (Slowing must be greater than 0, causes an error)
  - **101** (Exceeds maximum limit of 100, causes an error)

### level overbought

- Default Value: **70**
- Description: This parameter sets the threshold level for the Stochastic oscillator to define overbought and oversold regions. Values above this level indicate overbought conditions, while values below (100 minus the overbought level) indicate oversold conditions. It must be between 0 and 100.
- Correct Input Examples:
  - **70** (Sets overbought level to 70, oversold to 30)
  - **80** (Sets overbought level to 80, oversold to 20)
- Incorrect Input Examples:
  - **-1** (Negative values are not allowed, causes an error)
  - **101** (Exceeds maximum limit of 100, causes an error)

### main line color

- Default Value: **Blue**
- Description: This parameter sets the color of the Stochastic main line (%K) displayed on the chart when the EA is run in visual mode or when object drawing is enabled.

### signal line color

- Default Value: **Red**
- Description: This parameter sets the color of the Stochastic signal line (%D) displayed on the chart when the EA is run in visual mode or when object drawing is enabled.

## Bollinger Bands signal

These settings configure the Bollinger Bands signal functionality for the MasterEA, enabling the definition of trade signals based on price interactions with the Bollinger Bands indicator for two independent signal configurations (Signal 1 and Signal 2). Each configuration supports signals based on price exiting the channel, entering the channel, or crossing the middle line, with signal sizing influenced by the band width.

## mode

- Default Value: **inactive**
- Description: This parameter determines whether the **Bollinger bands signal** functionality is active.
  - **inactive**: Bollinger band signal is inactive.
  - **entry signals**: Enables Bollinger band-based entry signals for opening trades.
  - **entry and exit signals**: Bollinger band is used for entry and exit.
  - **exit signals**: Enables Bollinger band-based exit signals for closing trades.
  - **exit signal after soft stop loss**: Once the soft stop loss is triggered the Bollinger band signal is used to exit positions.

## method

- Default Value: **exiting the channel**
- Description: This parameter specifies the method used to generate Bollinger Bands Signals.
  - **exiting the channel**: Signals are generated when the price exits the Bollinger Bands channel, moving below the lower band or above the upper band.
  - **entering the channel**: Signals are generated when the price re-enters the Bollinger Bands channel, moving above the lower band or below the upper band.
  - **cross middle line**: Signals are generated when the price crosses the middle line (moving average) of the Bollinger Bands.

## direction

- Default Value: **normal**
- Description: This parameter determines the direction interpretation of Bollinger Bands Signal.
  - **normal**: Buy signals are generated when the price interacts with the lower band (e.g., exiting below it) or crosses the middle line upward, and sell signals when interacting with the upper band or crossing the middle line downward.
  - **reverse**: Buy signals are generated when the price interacts with the upper band or crosses the middle line downward, and sell signals when interacting with the lower band or crossing the middle line upward.

## confirmation bars

- Default Value: **3**
- Description: This parameter specifies the number of bars required to confirm a Bollinger Bands Signal before it is considered valid for generating

a trade entry or exit. E.g. for the **entering the channel** method, it verifies that the price remains outside the channel across the confirmation period.

- Correct Input Examples:
  - **3** (Requires 3 bars for confirmation)
  - **10** (Requires 10 bars for confirmation)
- Incorrect Input Examples:
  - **-1** (Negative values are not allowed, causes an error)
  - **201** (Exceeds maximum limit of 200, causes an error)

## timeframe

- Default Value: **1 Hour**
- Description: This parameter specifies the chart timeframe used for calculating the Bollinger band signal. It must be equal to or greater than the **modeling timeframe** and, in testing mode, a multiple of the tester timeframe.
- Incorrect Input Examples:
  - **current** (Cannot be 'current', causes an error)

## period

- Default Value: **14**
- Description: This parameter sets the period (number of bars) for the Bollinger band indicator calculation.
- Correct Input Examples:
  - **14** (Sets Bollinger band period to 14 bars)
  - **50** (Sets Bollinger band period to 50 bars)
- Incorrect Input Examples:
  - **0** (Period must be greater than 0, causes an error)
  - **301** (Exceeds maximum limit of 300, causes an error)

## deviation

- Default Value: **2.0**
- Description: This parameter sets the standard deviation multiplier for the Bollinger Bands signal, determining the width of the upper and lower bands relative to the middle line.
- Correct Input Examples:
  - **2.0** (Sets deviation to 2.0 standard deviations)
  - **1.5** (Sets deviation to 1.5 standard deviations)
- Incorrect Input Examples:
  - **0** (Below minimum limit of 0.1, causes an error)
  - **11** (Exceeds maximum limit of 10, causes an error)

## color

- Default Value: **Blue**

- Description: This parameter sets the color of the Bollinger Bands (middle, upper, and lower lines) displayed on the chart when the EA is run in visual mode or when object drawing is enabled.

## Bar signal

These settings configure the Bar signal functionality for the MasterEA, enabling the definition of trade signals based on comparisons of price values (open, high, low, close) across recent bars (up to 5 bars back) for up to five independent conditions. Signals are generated when the specified conditions are met, comparing value 1 greater than value 2 for buy signals and value 1 less than value 2 for sell signals.

### mode

- Default Value: **inactive**
- Description: This parameter determines whether the Bar signal functionality is active.
  - **inactive**: Bar signals are disabled, and no trades will be initiated based on bar conditions.
  - **entry signals**: Enables Bar-based entry signals for opening trades.
  - **exit signals**: Enables Bar-based exit signals for closing trades.
  - **exit signal after soft stop loss**: Once the soft stop loss is triggered the Bar signal is used to exit positions.

### timeframe

- Default Value: **1 Hour**
- Description: This parameter specifies the chart timeframe used for evaluating bar signals. It must be equal to or greater than the modeling timeframe and, in testing mode, a multiple of the tester timeframe. This timeframe is relevant for all 5 conditions of the bar signal.
- Correct Input Examples:
  - **H1** (Uses 1-hour chart for Bar signal calculations)
  - **D1** (Uses daily chart for Bar signal calculations)
- Incorrect Input Examples:
  - **current** (Cannot be 'current', causes an error)

### condition 1, value 1 greater

- Default Value: **open 0**
- Description: This parameter specifies the first value (value 1) for the first condition in the Bar signal logic, which is compared to value 2 to generate buy or sell signals. It represents a price point (open, high, low, or close) from one of the last 6 bars (0 to 5 bars ago). For buy signals, value 1 must be greater than value 2 (e.g., open of the current bar greater than open of the



previous bar). For sell signals, value 1 must be less than value 2, with special handling for high and low prices (e.g., selecting low for value 1 when high is selected for buy signals). The EA evaluates this condition as part of up to five conditions, all of which must be true for a signal to be generated. Setting this to **inactive** disables the condition, but at least one condition must be active for the signal to function.

- Correct Input Examples:
  - open 0 (Compares open price of current bar)
  - close 1 (Compares close price of previous bar)
- Incorrect Input Examples:
  - open 6 (Invalid, exceeds maximum bar index of 5)

### condition 1, value 2

- Default Value: **open 1**
- Description: This parameter specifies the second value (value 2) for the first condition in the Bar signal logic, which is compared against value 1 to generate buy or sell signals. It represents a price point (open, high, low, or close) from one of the last 6 bars (0 to 5 bars ago). For buy signals, value 1 must be greater than value 2 (e.g., open of the current bar greater than open of the previous bar).
- Correct Input Examples:
  - open 1 (Compares open price of previous bar)
  - high 2 (Compares high price of two bars ago)
- Incorrect Input Examples:
  - close 6 (Invalid, exceeds maximum bar index of 5)

## HighLow signal

These settings configure the MasterEA's HighLow signal module, which generates trade signals based on price breakouts from a defined high/low channel over a specified timeframe and number of bars. The module supports filtering by channel size and index position to refine signal accuracy.

### mode

- Default Value: **inactive**
- Description: This parameter determines whether the HighLow signal functionality is active.
  - **inactive**: HighLow signal is disabled
  - **entry signals**: Enables HighLow-based entry signals for opening trades.
  - **exit signals**: Enables HighLow-based exit signals for closing trades.
  - **exit signal after soft stop loss**: Once the soft stop loss is triggered the HighLow signal is used to exit positions.

## timeframe

- Default Value: **1 Hour**
- Description: This parameter specifies the chart timeframe used for evaluating HighLow signals. It must be equal to or greater than the modeling timeframe and, in testing mode, a multiple of the tester timeframe.
- Correct Input Examples:
  - **H1** (Uses 1-hour chart for HighLow signal calculations)
  - **D1** (Uses daily chart for HighLow signal calculations)
- Incorrect Input Examples:
  - **current** (Cannot be 'current', causes an error)

## number of bars for high/low

- Default Value: **20**
- Description: This parameter sets the number of bars used to calculate the highest high and lowest low of the price channel in the HighLow signal module. It defines the lookback period for determining the channel's range.
- Correct Input Examples:
  - **10** (uses 10 bars for channel calculation)
  - **80** (uses 80 bars for channel calculation)
- Incorrect Input Examples:
  - **0** (must be greater than 0, causes error)
  - **1001** (exceeds maximum of 1000, causes error)
  - **-20** (negative values invalid, causes error)

## index filter in %

- Default Value: **0**
- Description: This parameter applies a filter to the HighLow signal module based on the position of the highest high or lowest low within the specified **number of bars for high/low**. It specifies a percentage of the lookback period (0–49%) that defines a forbidden zone at the start and end of the period. If the high or low occurs within this zone (e.g., within the first or last N bars, where N is **number of bars** × **index filter in %** / 100), the breakout signal is ignored to avoid false signals from recent or outdated extremes. Set to 0 to disable this filter.
- Usage Example: Set **index filter in %** to **10** with **number of bars for high/low** set to **200** to ignore breakouts if the high or low occurs in the first or last 20 bars of the 200-bar period, ensuring signals are based on more stable price extremes.
- Correct Input Examples:
  - **0** (disables index filter)
  - **10** (ignores highs/lows in first/last 10% of bars)

- **25** (ignores highs/lows in first/last 25% of bars)
- Incorrect Input Examples:
  - **50** (exceeds maximum of 49, causes error)
  - **-5** (negative values invalid, causes error)

### channel size filter in points

- Default Value: **0**
- Description: This parameter sets a minimum size (in points) for the price channel (difference between the highest high and lowest low) to validate breakout signals in the HighLow signal module. If the channel size is bigger than this value, no signals are generated. Set to **0** to disable this filter.
- Correct Input Examples:
  - **0** (disables size filter)
  - **500** (requires channel size less than 500 points / 50 pips)
- Incorrect Input Examples:
  - **-100** (negative values invalid, causes error)

### color

- Default Value: **Blue**
- Description: This parameter sets the color of the visual objects (e.g., horizontal lines and text) drawn on the chart to mark the channel when the module is active and visual display is enabled.

## Time exit signal

These settings configure the MasterEA's Time Exit signal module, which generates signals to close positions at specific times based on a reference period (daily, weekly, or monthly). The module allows up to five time-based exit conditions, each with a configurable mode to specify which positions to close, and supports visual display of exit times on the chart.

### active

- Default Value: **false**
- Description: This parameter enables or disables the Time Exit signal module in the MasterEA.

### expire in minutes for exits

- Default Value: **1440**
- Description: This parameter specifies the duration (in minutes) after a time exit event during which the exit signal remains valid. Once this period expires, the signal is no longer active, preventing outdated exits. The value must be greater than 0 when the module is active.

- Usage Example: Set **expire in minutes for exits** to **720** to allow a time exit signal (e.g., closing all positions at 8:00 PM) to remain active for 12 hours, ensuring positions are closed if the signal is triggered within this window.
- Correct Input Examples:
  - **720** (signal active for 12 hours)
  - **1440** (signal active for 24 hours)
- Incorrect Input Examples:
  - **0** (must be greater than 0 when module is active, causes error)
  - **-60** (negative values invalid, causes error)

## time period

- Default Value: **time period**
- Description: This parameter defines the reference period for calculating time exit events. It determines the starting point for adding time exit offsets: daily uses 00:00 of the current day, weekly uses Monday 00:00 of the current week, and monthly uses the first day of the month at 00:00. The period affects the valid range for time exit values (e.g., 0–1439 minutes for daily, 0–10079 minutes for weekly, 0–44639 minutes for monthly).
- Usage Example: Set **time period** to **weekly reference point at monday 00:00** to schedule time exits relative to Monday 00:00, such as closing positions at 12:00 PM on Wednesday (3600 minutes offset), suitable for weekly trading strategies.

## time exit 1 mode

- Default Value: **exit all positions**
- Description: This parameter specifies which positions are closed when the first time exit event occurs. Options include closing all positions, all buy or sell positions, or the first or last buy/sell position opened. The time exit only triggers if its corresponding time value is non-negative and the module is active.
- Usage Example: Set **time exit 1 mode** to **exit all buy positions** with **time exit 1** set to **1200** and **time period** set to **daily reference point at 00:00** to close all buy positions at 8:00 PM daily, useful for exiting long positions before market close.

## time exit 1

- Default Value: **1200**
- Description: This parameter sets the time offset (in minutes) from the reference period for the first time exit event. The offset is added to the reference time (e.g., 00:00 for daily) to determine when the exit signal triggers. Set to -1 to disable this time exit. The value must be within the valid range for the selected time period (e.g., 0–1439 for daily).
- Correct Input Examples:

- **960** (triggers at 4:00 PM for daily period)
  - **-1** (disables time exit 1)
  - **3600** (triggers at 12:00 PM Wednesday for weekly period)
- Incorrect Input Examples:
  - **1440** (exceeds daily period limit, causes error)
  - **-2** (invalid negative value, causes error)

## object color

- Default Value: **Red**
- Description: This parameter sets the color of the visual objects (e.g., vertical lines) drawn on the chart to mark time exit events when the module is active and visual display is enabled.

## Duration exit signal

These settings configure the MasterEA's Duration Exit signal module, which generates signals to close positions after a specified duration from their opening time. The module allows separate duration settings for buy and sell positions, with an option to link sell durations to buy settings, and supports visual display of exit times on the chart.

### duration exit signal active

- Default Value: **true**
- Description: This parameter enables or disables the Duration Exit signal module in the MasterEA.

### duration exit buy in minutes

- Default Value: **60**
- Description: This parameter specifies the duration (in minutes) after which buy positions are closed by the Duration Exit signal module. The duration is measured from the position's opening time, and a signal is generated when this period elapses. The value must be greater than 0 if the module is active
- Correct Input Examples:
  - **60** (closes buy positions after 1 hour)
  - **240** (closes buy positions after 4 hours)
  - **1440** (closes buy positions after 24 hours)
- Incorrect Input Examples:
  - **0** (must be greater than 0 if module is active, causes error)
  - **-60** (negative values invalid, causes error)

### link sell to buy

- Default Value: **true**

- Description: This parameter determines whether the duration for sell positions is linked to the buy duration setting. When set to **true**, sell positions use the same duration as specified in **duration exit buy in minutes**, ignoring the **duration exit sell in minutes** setting. When set to **false**, sell positions use the separate duration specified in **duration exit sell in minutes**.

### duration exit sell in minutes

- Default Value: **-1**
- Description: This parameter specifies the duration (in minutes) after which sell positions are closed by the Duration Exit signal module, measured from the position's opening time. It is only used if **link sell to buy** is **false**. Set to **-1** to disable duration-based exits for sell positions when not linked to buy settings. The value must be greater than **0** if the module is active, **link sell to buy** is **false**, and no buy duration is set.
- Usage Example: Set **duration exit sell in minutes** to **120** with **link sell to buy** set to **false** to close sell positions 2 hours after opening, allowing different exit timings for short positions compared to buy positions.
- Correct Input Examples:
  - **-1** (disables sell duration exits if not linked)
  - **120** (closes sell positions after 2 hours)
  - **720** (closes sell positions after 12 hours)
- Incorrect Input Examples:
  - **-2** (invalid negative value, causes error)
  - **0** (must be greater than 0 if module is active and not linked, causes error)

### object color

- Default Value: **Crimson**
- Description: This parameter sets the color of the visual objects (e.g., vertical lines) drawn on the chart to mark duration exit times for positions when the module is active and visual display is enabled.

## Time filter

These settings configure the MasterEA's Time Filter module, which restricts trade entries and exits during specified time windows based on a reference period (daily, weekly, or monthly). The module supports up to five time filters, each with a configurable mode to block specific actions (e.g., buy/sell entries or exits), and allows excluding Sunday trading and visual display of filter windows on the chart.

### time filter active

- Default Value: **false**

- Description: This parameter enables or disables the Time Filter module in the MasterEA.

### exclude sunday

- Default Value: **true**
- Description: This parameter determines whether trading actions are restricted on Sundays when using a weekly reference period. When set to true, the module prevents time filters from starting or ending on Sundays.

### time filter period

- Default Value: **time filter period**
- Description: This parameter defines the reference period for calculating time filter windows. It determines the starting point for adding time filter offsets: daily uses 00:00 of the current day, weekly uses Monday 00:00 of the current week, and monthly uses the first day of the month at 00:00. The period affects the valid range for time filter start times (e.g., 0–1439 minutes for daily, 0–10079 for weekly, 0–44639 for monthly).

### time filter 1 mode

- Default Value: **time filter 1 mode**
- Description: This parameter specifies which trading actions are restricted during the first time filter window. Options include blocking buy and/or sell entries, exits, or both.

### time filter 1

- Default Value: **200**  
Description: This parameter sets the start time offset (in minutes) from the reference period for the first time filter window. The offset is added to the reference time (e.g., 00:00 for daily) to determine when the filter begins. Set to -1 to disable this time filter. The value must be within the valid range for the selected time period (e.g., 0–1439 minutes for daily, 0–10079 for weekly, 0–44639 for monthly).
- Usage Example: Set *time filter 1* to 900 with *time filter period* set to *daily reference point at 00:00* to start a filter at 3:00 PM daily.
- Correct Input Examples:
  - **900** (starts at 3:00 PM for daily period)
  - **-1** (disables time filter 1)
  - **3600** (starts at 12:00 PM Wednesday for weekly period)
- Incorrect Input Examples:
  - **-2** (invalid negative value, causes error)

### time filter 1 duration

- Default Value: **60**
- Description: This parameter specifies the duration (in minutes) of the first time filter window, during which the specified trading actions are restricted. The duration must be non-negative and, for daily periods, less than 10080 minutes (7 days).
- Usage Example: Set **time filter 1 duration** to **120** with **time filter 1** set to **960** to block trading from 4:00 PM to 6:00 PM daily.
- Correct Input Examples:
  - **60** (1-hour filter duration)
  - **120** (2-hour filter duration)
- Incorrect Input Examples:
  - **-60** (negative values invalid, causes error)
  - **10080** (exceeds daily period duration limit, causes error)

### object color

- Default Value: **DarkViolet**
- Description: This parameter sets the color of the visual objects (e.g., vertical lines) drawn on the chart to mark the start and end of time filter windows when the module is active and visual display is enabled.

## Moving Average filter

These settings configure the MasterEA's Moving Average Filter module, which restricts trade entries and exits based on conditions involving one or more moving averages (fast, medium, slow). The module supports various methods (e.g., price above fast MA, fast MA rising) and directions (normal or reverse), with configurable timeframes and periods, and allows visual display of moving averages on the chart.

### mode

- Default Value: **inactive**
- Description: This parameter determines the operational mode of the Moving Average filter module.
  - **inactive**: Moving Average filter is disabled
  - **entry signals**: Moving Average filter will filter entry signals.
  - **entry and exit signals**: Moving Average filter will filter entry and exit signals.
  - **exit signals**: Moving Average filter will filter exit signals.
  - **exit signal after soft stop loss**: Not allowed for a filter.

### method

- Default Value: **method**



- Description: This parameter specifies the condition used by the Moving Average Filter module to evaluate trading signals.
  - **price, up: price above fast:** This option allows buy signals when the current price is above the fast moving average and sell signals when below it, filtering trades based on the price's position relative to the fast moving average for trend confirmation.
  - **single, up: fast is rising:** This option permits buy signals when the fast moving average is increasing (current value higher than the previous) and sell signals when it is decreasing, filtering trades based on the directional trend of the fast moving average.
  - **dual, up: fast>medium:** This option enables buy signals when the fast moving average is above the medium moving average and sell signals when below it, filtering trades based on the relative position of fast and medium moving averages for stronger trend validation.
  - **dual+, up: f>m+f rise, n: f>m+f fall or f<m+f rise:** This option allows buy signals when the fast moving average is above the medium and rising, sell signals when fast is below medium and falling, and neutral (no signals) when fast is above medium but falling or below medium but rising.

## direction

- Default Value: **direction**
- Description: This parameter sets the direction of the moving average filter conditions. Normal direction applies the standard logic (e.g., buy when price is above fast MA), while reverse direction inverts the logic (e.g., buy when price is below fast MA).

## timeframe

- Default Value: **timeframe**
- Description: This parameter specifies the chart timeframe used to calculate the moving averages for the filter module. It defines the candlestick period (e.g., 1-hour, 4-hour, daily) for the moving average calculations. The timeframe must be equal to or greater than the modeling timeframe and, in tester mode, must be a multiple of the tester timeframe.
- Incorrect Input Examples:
  - **current** (not allowed, causes error)

## fast period

- Default Value: **14**
- Description: This parameter sets the period (number of bars) for the fast moving average used in the filter module.
- Incorrect Input Examples:
  - **0** (must be between 1–300, causes error)

- **301** (exceeds maximum of 300, causes error)

### medium period

- Default Value: **0**
- Description: This parameter sets the period (number of bars) for the medium moving average, used in dual or triple moving average methods. It must be greater than the fast period, between 1 and 300, and set to 0 if not used (e.g., in price or single methods).
- Correct Input Examples:
  - **0** (disables medium MA for price/single methods)
  - **20** (20-bar medium MA)
- Incorrect Input Examples:
  - **301** (exceeds maximum of 300, causes error)

### slow period

- Default Value: **0**
- Description: This parameter sets the period (number of bars) for the slow moving average, used in the triple moving average method. It must be greater than the medium period, between 1 and 300, and set to 0 if not used (e.g., in price, single, or dual methods).
- Correct Input Examples:
  - **0** (disables slow MA for non-triple methods)
  - **50** (50-bar slow MA)
- Incorrect Input Examples:
  - **301** (exceeds maximum of 300, causes error)

### fast color

- Default Value: **Blue**
- Description: This parameter sets the color of the fast moving average line drawn on the chart when the module is active and visual display is enabled.

### medium color

- Default Value: **Orange**
- Description: This parameter sets the color of the medium moving average line drawn on the chart when used in dual or triple methods and visual display is enabled.

### slow color

- Default Value: **BlueViolet**
- Description: This parameter sets the color of the slow moving average line drawn on the chart when used in the triple method and visual display is enabled.

## Stochastic filter

These settings configure the MasterEA's Stochastic Filter module, which restricts trade entries and exits based on Stochastic oscillator conditions (e.g., overbought or oversold levels). The module supports directional and non-directional methods, normal or reverse logic, configurable timeframes, and visual display of the Stochastic indicator on the chart.

### mode

- Default Value: **inactive**
- Description: This parameter determines the operational mode of the Stochastic Filter module. It controls whether the module is active and whether it filters trade entries, exits, or both based on Stochastic oscillator conditions.
  - **inactive**: Stochastic filter is disabled
  - **entry signals**: Stochastic will filter entry signals.
  - **entry and exit signals**: Stochastic will filter entry and exit signals.
  - **exit signals**: Stochastic will filter exit signals.
  - **exit signal after soft stop loss**: Not allowed for a filter.

### method

- Default Value: **method**
- Description: This parameter specifies the Stochastic oscillator condition used to filter trading signals.
  - **directional, overbought:buy, oversold:sell** (directional filtering based on overbought/oversold)
  - **non directional, extreme:trade, neutral:no trade** (trade only in extreme zones)

### direction

- Default Value: **direction**
- Description: This parameter sets the direction of the Stochastic filter conditions. Normal direction applies standard logic (e.g., buy in oversold, sell in overbought for directional method), while reverse direction inverts the logic (e.g., buy in overbought, sell in oversold).

### timeframe

- Default Value: **timeframe**
- Description: This parameter specifies the chart timeframe used to calculate the Stochastic oscillator. It defines the candlestick period (e.g., 1-hour, 4-hour, daily) for the Stochastic calculations. The timeframe must be equal to or greater than the modeling timeframe and, in tester mode, must be a multiple of the tester timeframe.

- Incorrect Input Examples:
  - **current** (not allowed, causes error)

### k-period

- Default Value: **5**
- Description: This parameter sets the number of bars used to calculate the %K line (main line) of the Stochastic oscillator filter.
- Correct Input Examples:
  - **5** (Sets %K period to 5 bars)
  - **14** (Sets %K period to 14 bars)
- Incorrect Input Examples:
  - **0** (Period must be greater than 0, causes an error)
  - **301** (Exceeds maximum limit of 300, causes an error)

### slowing

- Default Value: **3**
- Description: This parameter sets the slowing factor applied to the Stochastic oscillator filter, smoothing the %K line to reduce noise.
- Correct Input Examples:
  - **3** (Sets slowing to 3 bars)
  - **5** (Sets slowing to 5 bars)
- Incorrect Input Examples:
  - **0** (Slowing must be greater than 0, causes an error)
  - **101** (Exceeds maximum limit of 100, causes an error)

### level overbought

- Default Value: **70**
- Description: This parameter sets the threshold level for the Stochastic oscillator to define overbought and oversold regions. Values above this level indicate overbought conditions, while values below (100 minus the overbought level) indicate oversold conditions. It must be between 0 and 100.
- Correct Input Examples:
  - **70** (Sets overbought level to 70, oversold to 30)
  - **80** (Sets overbought level to 80, oversold to 20)
- Incorrect Input Examples:
  - **-1** (Negative values are not allowed, causes an error)
  - **101** (Exceeds maximum limit of 100, causes an error)

### main line color

- Default Value: **Blue**

- Description: This parameter sets the color of the Stochastic main line (%K) displayed on the chart when the EA is run in visual mode or when object drawing is enabled.

## Bollinger Bands filter

These settings configure the MasterEA's Bollinger Bands Filter module, which restricts trade entries and exits based on price position relative to Bollinger Bands or band width conditions. The module supports various methods (e.g., outside/inside directional, expansion) and directions (normal or reverse), with configurable timeframes, periods, and deviations, and allows visual display of Bollinger Bands on the chart.

### mode

- Default Value: **inactive**
- Description: This parameter determines the operational mode of the Stochastic Filter module. It controls whether the module is active and whether it filters trade entries, exits, or both based on Stochastic oscillator conditions.
  - **inactive**: Bollinger bands filter is disabled
  - **entry signals**: Bollinger bands will filter entry signals.
  - **entry and exit signals**: Bollinger bands will filter entry and exit signals.
  - **exit signals**: Bollinger bands will filter exit signals.
  - **exit signal after soft stop loss**: Not allowed for a filter.

### method

- Default Value: **method**
- Description: This parameter specifies the condition used by the Bollinger Bands Filter module to evaluate trading signals.
  - **outside directional**: This option allows buy signals when the price is above the upper Bollinger Band and sell signals when below the lower band, filtering trades directionally to capture breakouts in trending markets.
  - **inside directional**: This option permits buy signals when the price is below the upper band but above the middle band and sell signals when above the lower band but below the middle band
  - **outside**: This option enables trading signals when the price is outside either the upper or lower Bollinger Band, filtering trades non-directionally to allow both buy and sell entries in extreme price conditions regardless of direction.
  - **expansion**: This option allows trading signals when the Bollinger Bands are expanding (current band width is greater than or equal to

the previous), filtering trades to capture periods of increasing volatility, suitable for breakout or momentum strategies.

## timeframe

- Default Value: **1 Hour**
- Description: This parameter specifies the chart timeframe used for calculating the Bollinger band filter. It must be equal to or greater than the **modeling timeframe** and, in testing mode, a multiple of the tester timeframe.
- Incorrect Input Examples:
  - **current** (Cannot be 'current', causes an error)

## period

- Default Value: **14**
- Description: This parameter sets the period (number of bars) for the Bollinger band indicator calculation.
- Correct Input Examples:
  - **14** (Sets Bollinger band period to 14 bars)
  - **50** (Sets Bollinger band period to 50 bars)
- Incorrect Input Examples:
  - **0** (Period must be greater than 0, causes an error)
  - **301** (Exceeds maximum limit of 300, causes an error)

## deviation

- Default Value: **2.0**
- Description: This parameter sets the standard deviation multiplier for the Bollinger Bands filter, determining the width of the upper and lower bands relative to the middle line.
- Correct Input Examples:
  - **2.0** (Sets deviation to 2.0 standard deviations)
  - **1.5** (Sets deviation to 1.5 standard deviations)
- Incorrect Input Examples:
  - **0** (Below minimum limit of 0.1, causes an error)
  - **11** (Exceeds maximum limit of 10, causes an error)

## color

- Default Value: **Blue**
- Description: This parameter sets the color of the Bollinger Bands (middle, upper, and lower lines) displayed on the chart when the EA is run in visual mode or when object drawing is enabled.

## Aroon filter

These settings configure the MasterEA's Aroon Filter module, which restricts trade entries and exits based on the Aroon indicator's up and down lines, evaluating trend strength through various methods (e.g., relative line values, distance, levels). The module supports normal or reverse logic, configurable timeframes, periods, and level thresholds, with visual display of the Aroon indicator lines on the chart.

### mode

- Default Value: **inactive**
- Description: This parameter determines the operational mode of the Aroon Filter module. It controls whether the module is active and whether it filters trade entries, exits, or both based on Aroon indicator conditions.
  - **inactive**: Aroon filter is disabled
  - **entry signals**: Aroon will filter entry signals.
  - **entry and exit signals**: Aroon will filter entry and exit signals.
  - **exit signals**: Aroon will filter exit signals.
  - **exit signal after soft stop loss**: Not allowed for a filter.

### method

- Default Value: **method**
- Description: This parameter specifies the Aroon indicator condition used to filter trading signals. Options include filtering based on the up line exceeding the down line, the distance between lines exceeding a high level, the up/down line surpassing a high level, or both lines meeting high and low level thresholds. The method determines the logic for permitting or restricting trades.
  - **greater, upT:upL>downL**: This option allows buy signals when the Aroon up line is greater than the down line and sell signals when the down line is greater than the up line.
  - **distance, upT:upL>downL + (upL-downL)>highL**: This option permits buy signals when the Aroon up line exceeds the down line and the difference between them is greater than the high level threshold, and sell signals when the down line exceeds the up line with a similar difference.
  - **level, upT:upL>highL + upL>downL**: This option enables buy signals when the Aroon up line is above both the high level threshold and the down line, and sell signals when the down line is above both the high level and the up line.
  - **2 levels, upT:upL>highL + downL<lowL**: This option allows buy signals when the Aroon up line is above the high level threshold and the down line is below the low level threshold, and sell signals when the down line is above the high level and the up line is below the low level.

## direction

- Default Value: **normal**
- Description: This parameter sets the direction of the Aroon filter conditions. Normal direction applies standard logic (e.g., buy when up line > down line for greater method), while reverse direction inverts the logic (e.g., buy when down line > up line).

## timeframe

- Default Value: **1 Hour**
- Description: This parameter specifies the chart timeframe used for calculating the Aroon filter. It must be equal to or greater than the **modeling timeframe** and, in testing mode, a multiple of the tester timeframe.
- Incorrect Input Examples:
  - **current** (Cannot be 'current', causes an error)

## period

- Default Value: **14**
- Description: This parameter sets the period (number of bars) for the Aroon indicator calculation.
- Incorrect Input Examples:
  - **0** (Period must be greater than 0, causes an error)
  - **301** (Exceeds maximum limit of 300, causes an error)

## high level

- Default Value: **-1**
- Description: This parameter sets the high level threshold (0–100) for the Aroon up or down line in distance, level, and 2 levels methods. It defines a minimum value that the up line (for buy signals) or down line (for sell signals) must exceed to allow trades. Set to -1 to disable for the greater method. For other methods, it must be between 0 and 100.
- Usage Example: Set **high level** to **70** with **method** set to **level**, **upT:upL>highL + upL>downL** to allow buy entries when the Aroon up line exceeds 70 and the down line.
- Correct Input Examples:
  - **-1** (disables high level for greater method)
  - **70** (high level at 70)
- Incorrect Input Examples:
  - **101** (exceeds maximum of 100, causes error)
  - **-2** (invalid negative value, causes error)

## low level

- Default Value: **-1**



- Description: This parameter sets the low level threshold (0–100) for the Aroon down line (for buy signals) or up line (for sell signals) in the 2 levels method. It defines a maximum value that the down line or up line must be below to allow trades. Set to -1 to disable for methods other than 2 levels. For the 2 levels method, it must be between 0 and 100.
- Usage Example: Set **low level** to **30** with **method** set to **2 levels**, **upT:upL>highL + downL<lowL** to allow buy entries when the down line is below **30** and the up line exceeds the high level.
- Correct Input Examples:
  - **-1** (disables low level for non-2 levels methods)
  - **30** (low level at 30)
- Incorrect Input Examples:
  - **101** (exceeds maximum of 100, causes error)
  - **-2** (invalid negative value, causes error)

### color up line

- Default Value: **Lime**
- Description: This parameter sets the color of the Aroon up line drawn on the chart when the module is active and visual display is enabled.

### color down line

- Default Value: **Red**
- Description: This parameter sets the color of the Aroon down line drawn on the chart when the module is active and visual display is enabled.

## ATR Percent filter

These settings configure the MasterEA's ATR Percent Filter module, which restricts trade entries and exits based on the Average True Range (ATR) as a percentage of price, comparing it to a specified level to gauge volatility. The module supports normal or reverse logic, configurable timeframes, periods, and level thresholds, with visual display of the ATR Percent indicator on the chart.

### mode

- Default Value: **inactive**
- Description: This parameter determines the operational mode of the ATR Percent Filter module. It controls whether the module is active and whether it filters trade entries, exits, or both based on the ATR Percent value compared to a specified level.
  - **inactive**: ATR filter is disabled
  - **entry signals**: ATR will filter entry signals.
  - **entry and exit signals**: ATR will filter entry and exit signals.
  - **exit signals**: ATR will filter exit signals.

- **exit signal after soft stop loss:** Not allowed for a filter.

## direction

- Default Value: **direction**
- Description: This parameter sets the direction of the ATR Percent filter conditions. Normal direction allows trades when the ATR Percent is above the specified level, while reverse direction allows trades when the ATR Percent is below the level

## timeframe

- Default Value: **1 Hour**
- Description: This parameter specifies the chart timeframe used for calculating the ATR filter. It must be equal to or greater than the **modeling timeframe** and, in testing mode, a multiple of the tester timeframe.
- Incorrect Input Examples:
  - **current** (Cannot be 'current', causes an error)

## period

- Default Value: **14**
- Description: This parameter sets the period (number of bars) for the ATR indicator calculation.
- Incorrect Input Examples:
  - **0** (Period must be greater than 0, causes an error)
  - **301** (Exceeds maximum limit of 300, causes an error)

## level

- Default Value: **0.5**
- Description: This parameter sets the threshold level (0–100) for the ATR Percent value to determine whether trades are allowed. The value must be between 0 and 100 to ensure valid filtering.
- Correct Input Examples:
  - **0.5** (threshold at 0.5%)
  - **2.5** (threshold at 2.5%)
- Incorrect Input Examples:
  - **-0.5** (negative values invalid, causes error)
  - **101** (exceeds maximum of 100, causes error)

## color

- Default Value: **Blue**
- Description: This parameter sets the color of the ATR Percent indicator line drawn on the chart when the module is active and visual display is enabled.

## Efficiency Ratio filter

These settings configure the MasterEA's Efficiency Ratio Filter module, which restricts trade entries and exits based on the Efficiency Ratio indicator, which measures the directional efficiency of price movements over a specified period. The module supports directional and non-directional methods, normal or reverse logic with above/below level conditions, configurable timeframes, periods, and level thresholds, with visual display of the Efficiency Ratio indicator on the chart.

### mode

- Default Value: **inactive**
- Description: This parameter determines the operational mode of the Efficiency Ratio Filter module. It controls whether the module is active and whether it filters trade entries, exits, or both based on the Efficiency Ratio value compared to a specified level.
  - **inactive**: ATR filter is disabled
  - **entry signals**: ATR will filter entry signals.
  - **entry and exit signals**: ATR will filter entry and exit signals.
  - **exit signals**: ATR will filter exit signals.
  - **exit signal after soft stop loss**: Not allowed for a filter.

### method

- Default Value: **method**
- Description: This parameter specifies the Efficiency Ratio condition used to filter trading signals. The directional method allows buy signals for positive Efficiency Ratio values (uptrend) and sell signals for negative values (downtrend), while the non-directional method allows trades only when the Efficiency Ratio is in extreme zones (outside the neutral range defined by the level). The method determines the logic for permitting or restricting trades.
  - **directional, up:buy, down:sell**: This option allows buy signals when the Efficiency Ratio is positive and meets the level threshold (e.g., above the level for normal above direction) and sell signals when it is negative and meets the corresponding negative level threshold.
  - **non directional, extreme:trade, neutral:no trade**: This option permits buy and sell signals when the Efficiency Ratio is in extreme zones (outside the range defined by the level, e.g., above the level or below the negative level), blocking trades in the neutral zone between these thresholds.

### direction

- Default Value: **direction**
- Description: This parameter sets the direction and threshold condition for the Efficiency Ratio filter.

- **normal, above:** This option allows buy signals when the Efficiency Ratio is positive and above the specified level and sell signals when it is negative and below the negative level.
- **normal, below:** This option permits buy signals when the Efficiency Ratio is positive but below the specified level (or negative) and sell signals when it is negative and above the negative level (or positive).
- **reverse, above:** This option enables buy signals when the Efficiency Ratio is negative and above the negative level (stronger downtrend) and sell signals when it is positive and above the specified level.
- **reverse, below:** This option allows buy signals when the Efficiency Ratio is negative and below the negative level (weaker downtrend) or positive and sell signals when it is positive and below the specified level (weaker uptrend) or negative.

## timeframe

- Default Value: **1 Hour**
- Description: This parameter specifies the chart timeframe used for calculating the Efficiency Ratio filter. It must be equal to or greater than the **modeling timeframe** and, in testing mode, a multiple of the tester timeframe.
- Incorrect Input Examples:
  - **current** (Cannot be 'current', causes an error)

## period

- Default Value: **14**
- Description: This parameter sets the period (number of bars) for the Efficiency Ratio indicator calculation.
- Incorrect Input Examples:
  - **0** (Period must be greater than 0, causes an error)
  - **301** (Exceeds maximum limit of 300, causes an error)

## level

- Default Value: **0.25**
- Description: This parameter sets the threshold level (0–100) for the Efficiency Ratio to determine whether trades are allowed. The value must be between 0 and 100.
- Correct Input Examples:
  - **0.25** (threshold at 0.25)
  - **0.5** (threshold at 0.5)
- Incorrect Input Examples:
  - **-0.5** (negative values invalid, causes error)
  - **101** (exceeds maximum of 100, causes error)

## color

- Default Value: **Blue**
- Description: This parameter sets the color of the Efficiency Ratio indicator line drawn on the chart when the module is active and visual display is enabled.

## Bar filter

These settings configure the MasterEA's Bar Filter module, which restricts trade entries and exits based on up to five bar conditions (e.g., up/down bars, body size, wicks, ATR-based comparisons) evaluated on specified timeframes and bar indices. The module supports directional (mirrored conditions for buy/sell) or non-directional logic, with configurable ATR settings for volatility scaling, enabling precise filtering of price action patterns.

## mode

- Default Value: **inactive**
- Description: This parameter determines the operational mode of the Bar Filter module. It controls whether the module is active and whether it filters trade entries, exits, or both based on defined bar conditions.
  - **inactive**: Bar filter is disabled
  - **entry signals**: Bar filter will filter entry signals.
  - **entry and exit signals**: Bar filter will filter entry and exit signals.
  - **exit signals**: Bar filter will filter exit signals.
  - **exit signal after soft stop loss**: Not allowed for a filter.

## directional

- Default Value: **directional**
- Description: This parameter specifies whether the bar conditions are applied directionally or non-directionally. Directional mode allows buy signals when conditions are met as defined (e.g., up bar) and sell signals when mirrored (e.g., down bar), while non-directional mode applies conditions uniformly, blocking all trades if any condition fails.

## timeframe 1

- Default Value: **timeframe**
- Description: This parameter specifies the chart timeframe for evaluating the first bar condition. It defines the candlestick period (e.g., 1-hour, daily) for analyzing the bar's properties (e.g., up/down, body size). The timeframe must be equal to or greater than the modeling timeframe and, in tester mode, a multiple of the tester timeframe. At least one condition must be active.

## condition 1

- Default Value: **condition**
- Description: This parameter defines the first bar condition to filter trades, such as up/down bars, body/range size relative to  $ATR * multiplier$ , wick sizes, or price relationships (e.g., open-close) between the current and previous bar. The condition must be satisfied for trades to be allowed, with directional mode mirroring conditions for sell signals. The **1** in conditions like  $open - open1 > atr * m$  refers to the previous bar relative to the specified bar index by the **bar index** input.
- Correct Input Examples:
  - **up bar**: This option allows buy signals when the specified bar's close price is above its open price and sell signals when below (in directional mode).
  - **down bar**: This option permits buy signals when the specified bar's close price is below its open price and sell signals when above (in directional mode).
  - **inside body**: This option enables trades when the specified bar's body (open to close range) is fully contained within the previous bar's body.
  - **inside range**: This option allows trades when the specified bar's range (high to low) is fully contained within the previous bar's range.
  - **body > atr\*m**: This option permits trades when the specified bar's body size (absolute difference between open and close) exceeds the ATR scaled by the multiplier.
  - **body < atr\*m**: This option enables trades when the specified bar's body size (absolute difference between open and close) is smaller than the ATR scaled by the multiplier.
  - **range > atr\*m**: This option allows trades when the specified bar's range (high to low) exceeds the ATR scaled by the multiplier.
  - **range < atr\*m**: This option permits trades when the specified bar's range (high to low) is smaller than the ATR scaled by the multiplier.
  - **uwick > atr\*m**: This option enables buy signals when the specified bar's upper wick (high to the maximum of open/close) exceeds the ATR scaled by the multiplier and sell signals when the lower wick does (in directional mode).
  - **uwick < atr\*m**: This option allows buy signals when the specified bar's upper wick (high to the maximum of open/close) is smaller than the ATR scaled by the multiplier and sell signals when the lower wick is (in directional mode).
  - **lwick > atr\*m**: This option permits buy signals when the specified bar's lower wick (minimum of open/close to low) exceeds the ATR scaled by the multiplier and sell signals when the upper wick does (in directional mode).

- **lwick < atr\*m**: This option enables buy signals when the specified bar's lower wick (minimum of open/close to low) is smaller than the ATR scaled by the multiplier and sell signals when the upper wick is (in directional mode).
- **body/range > m**: This option allows trades when the ratio of the specified bar's body size to its range (high to low) exceeds the multiplier.
- **body/range < m**: This option permits trades when the ratio of the specified bar's body size to its range (high to low) is below the multiplier.
- **open-open1 > atr\*m**: This option enables buy signals when the specified bar's open price exceeds the previous bar's open by more than the ATR scaled by the multiplier and sell signals when the previous bar's open exceeds the current (in directional mode).
- **open1-open > atr\*m**: This option allows buy signals when the previous bar's open price exceeds the specified bar's open by more than the ATR scaled by the multiplier and sell signals when the current bar's open exceeds the previous (in directional mode).
- **open-high1 > atr\*m**: This option permits buy signals when the specified bar's open price exceeds the previous bar's high by more than the ATR scaled by the multiplier and sell signals when the previous bar's high exceeds the current open (in directional mode).
- **high1-open > atr\*m**: This option enables buy signals when the previous bar's high exceeds the specified bar's open price by more than the ATR scaled by the multiplier and sell signals when the current bar's open exceeds the previous high (in directional mode).
- **open-low1 > atr\*m**: This option allows buy signals when the specified bar's open price exceeds the previous bar's low by more than the ATR scaled by the multiplier and sell signals when the previous bar's low exceeds the current open (in directional mode).
- **low1-open > atr\*m**: This option permits buy signals when the previous bar's low exceeds the specified bar's open price by more than the ATR scaled by the multiplier and sell signals when the current bar's open exceeds the previous low (in directional mode).
- **open-close1 > atr\*m**: This option enables buy signals when the specified bar's open price exceeds the previous bar's close by more than the ATR scaled by the multiplier and sell signals when the previous bar's close exceeds the current open (in directional mode).
- **close1-open > atr\*m**: This option allows buy signals when the previous bar's close exceeds the specified bar's open price by more than the ATR scaled by the multiplier and sell signals when the current bar's open exceeds the previous close (in directional mode).
- **high-open1 > atr\*m**: This option permits buy signals when the specified bar's high exceeds the previous bar's open by more than

the ATR scaled by the multiplier and sell signals when the previous bar's open exceeds the current high (in directional mode).

- **open1-high > atr\*m**: This option enables buy signals when the previous bar's open exceeds the specified bar's high by more than the ATR scaled by the multiplier and sell signals when the current bar's high exceeds the previous open (in directional mode).
- **high-high1 > atr\*m**: This option allows buy signals when the specified bar's high exceeds the previous bar's high by more than the ATR scaled by the multiplier and sell signals when the previous bar's high exceeds the current high (in directional mode).
- **high1-high > atr\*m**: This option permits buy signals when the previous bar's high exceeds the specified bar's high by more than the ATR scaled by the multiplier and sell signals when the current bar's high exceeds the previous high (in directional mode).
- **high-low1 > atr\*m**: This option enables buy signals when the specified bar's high exceeds the previous bar's low by more than the ATR scaled by the multiplier and sell signals when the previous bar's low exceeds the current high (in directional mode).
- **low1-high > atr\*m**: This option allows buy signals when the previous bar's low exceeds the specified bar's high by more than the ATR scaled by the multiplier and sell signals when the current bar's high exceeds the previous low (in directional mode).
- **high-close1 > atr\*m**: This option permits buy signals when the specified bar's high exceeds the previous bar's close by more than the ATR scaled by the multiplier and sell signals when the previous bar's close exceeds the current high (in directional mode).
- **close1-high > atr\*m**: This option enables buy signals when the previous bar's close exceeds the specified bar's high by more than the ATR scaled by the multiplier and sell signals when the current bar's high exceeds the previous close (in directional mode).
- **low-open1 > atr\*m**: This option allows buy signals when the specified bar's low exceeds the previous bar's open by more than the ATR scaled by the multiplier and sell signals when the previous bar's open exceeds the current low (in directional mode).
- **open1-low > atr\*m**: This option permits buy signals when the previous bar's open exceeds the specified bar's low by more than the ATR scaled by the multiplier and sell signals when the current bar's low exceeds the previous open (in directional mode).
- **low-high1 > atr\*m**: This option enables buy signals when the specified bar's low exceeds the previous bar's high by more than the ATR scaled by the multiplier and sell signals when the previous bar's high exceeds the current low (in directional mode).
- **high1-low > atr\*m**: This option allows buy signals when the previous bar's high exceeds the specified bar's low by more than the ATR



scaled by the multiplier and sell signals when the current bar's low exceeds the previous high (in directional mode).

- **low-low1 > atr\*m**: This option permits buy signals when the specified bar's low exceeds the previous bar's low by more than the ATR scaled by the multiplier and sell signals when the previous bar's low exceeds the current low (in directional mode).
- **low1-low > atr\*m**: This option enables buy signals when the previous bar's low exceeds the specified bar's low by more than the ATR scaled by the multiplier and sell signals when the current bar's low exceeds the previous low (in directional mode).
- **low-close1 > atr\*m**: This option allows buy signals when the specified bar's low exceeds the previous bar's close by more than the ATR scaled by the multiplier and sell signals when the previous bar's close exceeds the current low (in directional mode).
- **close1-low > atr\*m**: This option permits buy signals when the previous bar's close exceeds the specified bar's low by more than the ATR scaled by the multiplier and sell signals when the current bar's low exceeds the previous close (in directional mode).
- **close-open1 > atr\*m**: This option enables buy signals when the specified bar's close exceeds the previous bar's open by more than the ATR scaled by the multiplier and sell signals when the previous bar's open exceeds the current close (in directional mode).
- **open1-close > atr\*m**: This option allows buy signals when the previous bar's open exceeds the specified bar's close by more than the ATR scaled by the multiplier and sell signals when the current bar's close exceeds the previous open (in directional mode).
- **close-high1 > atr\*m**: This option permits buy signals when the specified bar's close exceeds the previous bar's high by more than the ATR scaled by the multiplier and sell signals when the previous bar's high exceeds the current close (in directional mode).
- **high1-close > atr\*m**: This option enables buy signals when the previous bar's high exceeds the specified bar's close by more than the ATR scaled by the multiplier and sell signals when the current bar's close exceeds the previous high (in directional mode).
- **close-low1 > atr\*m**: This option allows buy signals when the specified bar's close exceeds the previous bar's low by more than the ATR scaled by the multiplier and sell signals when the previous bar's low exceeds the current close (in directional mode).
- **low1-close > atr\*m**: This option permits buy signals when the previous bar's low exceeds the specified bar's close by more than the ATR scaled by the multiplier and sell signals when the current bar's close exceeds the previous low (in directional mode).
- **close-close1 > atr\*m**: This option enables buy signals when the specified bar's close exceeds the previous bar's close by more than

the ATR scaled by the multiplier and sell signals when the previous bar's close exceeds the current close (in directional mode).

- **close1-close > atr\*m**: This option allows buy signals when the previous bar's close exceeds the specified bar's close by more than the ATR scaled by the multiplier and sell signals when the current bar's close exceeds the previous close (in directional mode).

## bar index 1

- Default Value: **index**
- Description: This parameter specifies the bar index (0 to 5) for the first condition, where 0 is the current bar, 1 is the previous bar, and so on. It determines which bar's properties are evaluated for the condition (e.g., up bar on bar 0). The index must align with available historical data.
- Usage Example: Set **bar index 1** to **bar 1** to evaluate the first condition (e.g., down bar) on the previous bar.
- Correct Input Examples:
  - bar 0 (current bar)
  - bar 2 (two bars ago)

## multiplier 1

- Default Value: **1**
- Description: This parameter sets the multiplier for the first condition when applicable (e.g.,  $\text{body} > \text{atr} \cdot m$ ), scaling the ATR value to define thresholds for size-based conditions (e.g., body, range, wicks). A value below 0 deactivates the condition, and at least one condition must be active. The multiplier must be non-negative when active to ensure valid calculations.
- Usage Example: Set multiplier 1 to 1.5 with condition 1 set to  $\text{body} > \text{atr} \cdot m$  to allow trades when the bar's body size exceeds 1.5 times the ATR, filtering for significant price movements.
- Correct Input Examples:
  - **1.5** (multiplier of 1.5)
  - **-1** (deactivates condition)
- Incorrect Input Examples:
  - **-2** (invalid for active condition, causes error if no other conditions active)

## ATR

### timeframe

- Default Value: **timeframe**
- Description: This parameter specifies the chart timeframe for calculating the ATR used in size-based bar conditions (e.g.,  $\text{body} > \text{atr} \cdot m$ ). It must be

equal to or greater than the modeling timeframe and, in tester mode, a multiple of the tester timeframe.

- Incorrect Input Examples:
  - **current** (not allowed, causes error)

## period

- Default Value: **14**
- Description: This parameter sets the lookback period (number of bars) for calculating the ATR used in size-based bar conditions.
- Incorrect Input Examples:
  - **0** (must be between 1–300, causes error)
  - **301** (exceeds maximum of 300, causes error)

## Signal size filter

These settings configure the MasterEA's Signal Size Filter module, which restricts trade entries and exits based on the signal size (a numerical value representing signal strength or magnitude) falling within a specified minimum and maximum range. The module supports filtering for entries, exits, or both, enabling precise control over trade signals based on their intensity. The signal size depends on the used entry or exit signal. Here are the supported signals for size filtering:

- Time range entry signal (range in pips)
- Stochastic oscillator signal (high-low of the used period in pips)
- Bollinger band signal (Distance between upper and middle band in pips)

## mode

- Default Value: **inactive**
- Description: This parameter determines the operational mode of the Signal Size Filter module, controlling whether the module is active and whether it filters trade entries, exits, or both based on the signal size being within the defined minimum and maximum range.
  - **inactive**: Signal size filter is disabled
  - **entry signals**: Signal size filter will filter entry signals.
  - **entry and exit signals**: Signal size filter will filter entry and exit signals.
  - **exit signals**: Signal size filter will filter exit signals.
  - **exit signal after soft stop loss**: Not allowed for a filter.

## minimum

- Default Value: **0**
- Description: This parameter sets the minimum signal size threshold (inclusive) that a signal must meet to allow trades. Signals with a size below this value are blocked for entries or exits, depending on the mode. The

value must be non-negative and less than the maximum to ensure a valid range.

- Correct Input Examples:
  - **0** (no minimum threshold)
- Incorrect Input Examples:
  - **-1** (negative values invalid, causes error)

## maximum

- Default Value: **999999**
- Description: This parameter sets the maximum signal size threshold (inclusive) that a signal must not exceed to allow trades. Signals with a size above this value are blocked for entries or exits, depending on the mode. The value must be greater than the minimum to ensure a valid range.
- Usage Example: Set **maximum** to **100** to block trades when the signal size exceeds 100, preventing overly strong signals from triggering entries or exits.

Correct Input Examples:

  - **999999** (effectively no upper limit)
- Incorrect Input Examples:
  - **-1** (negative values invalid, causes error)

Thanks for using the MasterEA! I'm thrilled to welcome you to the algo trading community.

Should you have any questions about using the MasterEA, require technical support, or wish to share your feedback or suggestions, please don't hesitate to reach out. I'm always available via my website: [trustfultrading.com](https://trustfultrading.com)

I'm continuously working to further develop the MasterEA and optimize your trading experience. Your input is incredibly valuable to me!

