Neural Agent v.3.19
User Documentation

Neural Agent Settings

Execution Settings

* Strategy mode
Allows the user to change general algorithm logic. Allowed values are HEDGING, CLASSIC and SCALPER. You can read about the specific modes separately below.

* Execution mode
Defines what types of orders to use in strategy. The available options are LIMIT_ORDERS and STEALTH. It is recommended to use LIMIT_ORDERS. In LIMIT_ORDERS mode, NA will operate with limit orders. In STEALTH mode, market orders will be used. The Stealth Mode market order could place the order slightly differently than the Limit Order mode due to data processing time delays. Hedging in STEALTH mode will use limit orders in any case. STEALTH mode can be used to decrease the number of requests to the MT server.

* Skip orders smaller than minimum allowed size
You can enable or disable the functionality to skip orders that are smaller than the minimum size allowed by the broker. For instance, if you have a small account or if the risk allocated for an instrument results in an order size smaller than the minimum allowed, the order will not be placed if this functionality is turned on. However, if you switch off this functionality, the order will be placed with the minimum allowed size, but in doing so, you may exceed your defined risk.

For example, if the broker's defined minimum order size for an instrument is 0.01 lot and the calculated order size is 0.005 lot, and the "Skip orders smaller than minimum allowed size" option is set to **true**, then the order will be skipped.

On the other hand, if the "Skip orders smaller than minimum allowed size" option is set to **false**, then the order will be placed with the minimum order size defined by the broker, which in this case would be 0.01 lot.

* Use Stop Loss
NA can operate without an SL, and the bot's logic will not rely on any specific static SL values (except in SCALPER mode). However, if you do require stops, you can simply switch them on.

* Scale risk based on strength %
Defines the dedicated risk to be scaled according to the strength percentage of the specific instrument. For example, if you allocate 30% of your total account for trading (using the 'Total Risk Allocation Of Account' option in Navigator) and a maximum of 12% for each instrument (using the 'Risk Each Market' option in Navigator), then the risk for the instrument will be 3.6% (12% of the dedicated 30%) of your account. If the 'Scale risk based on strength %' is **true,** additional calculations will be performed. NA will consider the instrument's strength, which is displayed on the Trend Index in BFT Navigator.
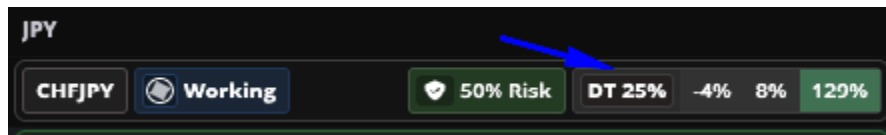
For instance, let's take CHFJPY as an example. The current total strength for CHFJPY is 25%. Therefore, the risk will be adjusted using the following logic: The 3.6% from the previous step will be multiplied by 25% of the strength value. This results in an adjusted risk of 0.9%.

adjusted risk = dedicated risk / 100 * total strength

* Lock position SL in Profit
With this option, the bot can lock in your profit by placing a stop loss in profitable positions when the price hits a certain level. For example:

A stop loss will be placed in a profitable position, ensuring that if the price reverses, the position will be closed with a profit. This functionality will work even if the 'Use Stop Loss' feature is switched off.

* Minimal points of price shift to modify orders
Define a minimal shift in price for SL, TP, or the open price to trigger the modify order functionality in NA. The Neural Bands on different timeframes are updated every minute, and based on this data, NA determines various order parameters such as SL, TP, and Open Price. To prevent unnecessary frequent updates in the bot, users can utilize this parameter. However, it's important to note that increasing this option will decrease the sensitivity of the bot. The default parameter is set at 3 points. For instance, if we consider EURUSD with 3 points, the corresponding value would be 0.00003. This means that any price change within this range will not trigger any order updates.

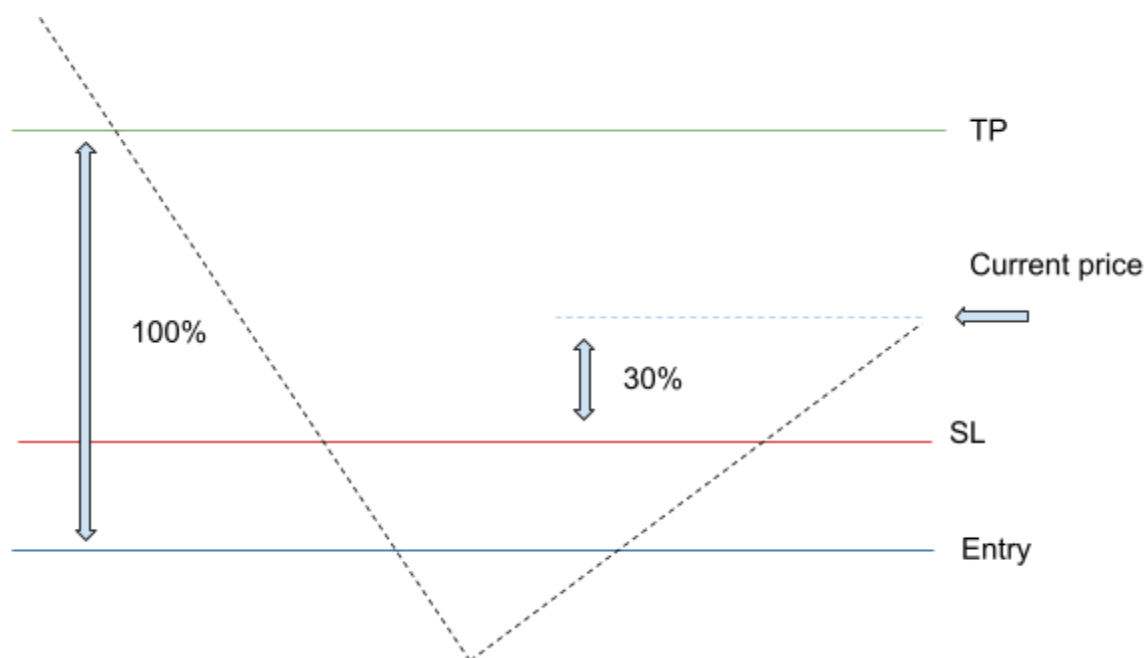* Lock SL in Profit - minimal profit (%)
Define minimal % shift for SL to lock in profit. Example for 30% minimal shift parameter:
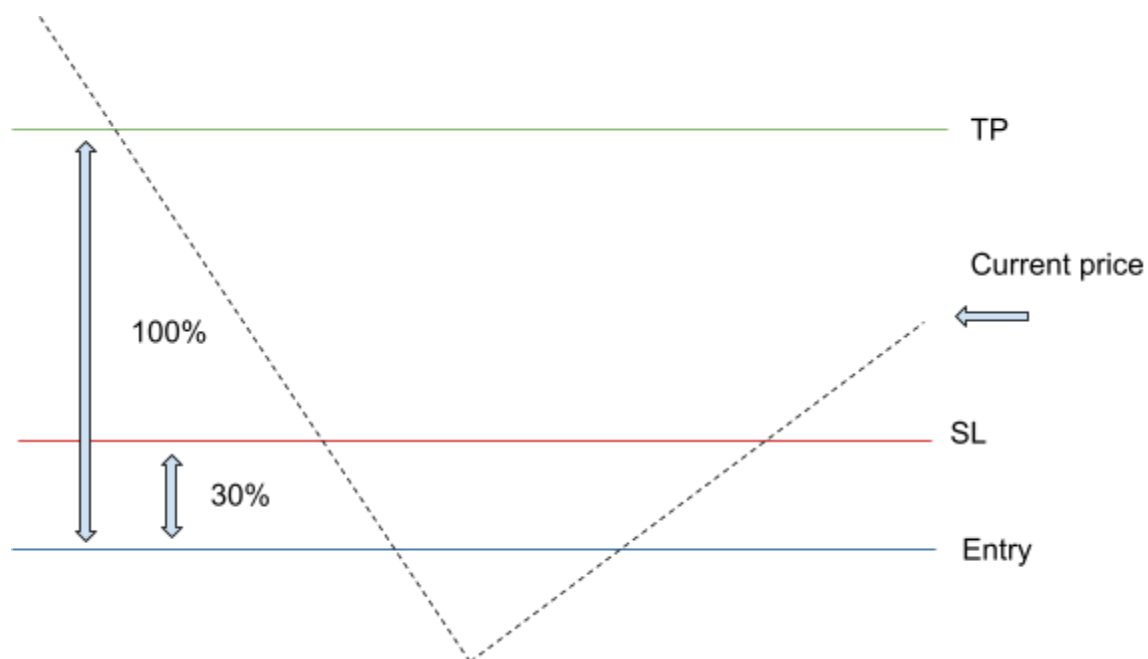
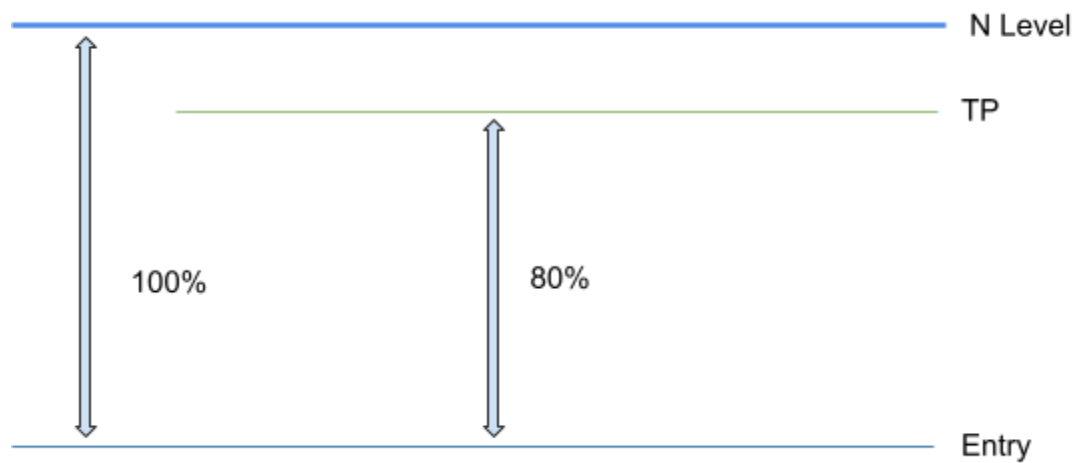* Lock SL in Profit - shift distance (%)

Define distance % between SL and Current Price so start moving SL (trailing stop). Example for 30% shift distance parameter:

* TP distance (%) to N level

Define where TP will be set depending on N (natural) level. 100% distance means that TP will be exactly on N level. Example for 80% distance parameter:

* Update position TP after order filled

Update or not TP of filled orders (positions) deped to N (natural) level change of specific timeframe band.

Trading Timeframes

In this section, the user can configure which timeframes to trade on.

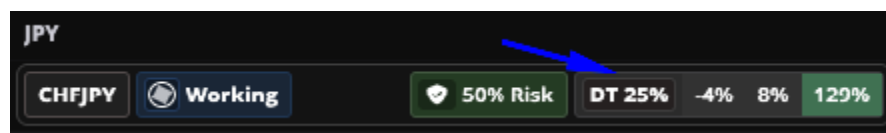| Variable	Value	
--- Trading Timeframes		
Trade on Single Timeframe	false	
1 Min	false	
1 Min minimal Strength	15	
5 Min	true	
5 Min minimal Strength	5	
15 Min	true	
15 Min minimal Strength	3	
1 Hour	true	
1 Hour minimal Strength	1	
4 Hours	false	
4 Hours minimal Strength	0	

User can configure 5 timeframe bands - 1 minute, 5 minutes, 15 minutes, 1 hour and 4 hours - for trading. Each timeframe provides two options for configuration: whether to use the specific timeframe and the minimum instrument total strength required to start using that timeframe. Orders size and risk will be split and dedicated between active timeframes.

* Trade on Single Timeframe
This option give ability to trade just on first timeframe from the list that fits configured conditions. In this case all risk will be dedicated to single position.

Example of usage:
Selection depends on the total instrument strength value. In this case, the user needs to switch on multiple timeframes that he wants and set a minimal strength level for each. As soon as the total strength of the instrument crosses the configured level, this timeframe will be tradable. The total strength can be seen in the Navigator trend index.

The idea of this is to trade highly trending markets on low timeframes and weak trending markets on higher timeframes.

Variable	Value
--- Trading Timeframes	
Trade on Single Timeframe	false
1 Min	true
1 Min minimal Strength	30
5 Min	true
5 Min minimal Strength	20
15 Min	true
15 Min minimal Strength	10
1 Hour	true
1 Hour minimal Strength	5
4 Hours	true
4 Hours minimal Strength	0

Using multiple timeframes

In this example, all 5 timeframes are active and 'Trade on Single Timeframe' is False.
If the total strength of an instrument becomes higher than 30% then the 1 min timeframe will be activated to trade as well as all higher timeframes. If the total strength is lower than 30% but higher than 20% - then all timeframes up to 5 min will be activated.

+30% - 1 min, 5 min, 15 min, 1 hr, 4 hr timeframes tradable
20-30% - 5 min, 15 min, 1 hr, 4 hr timeframes tradable
10-20% - 15 min, 1 hr, 4 hr timeframes tradable
5-10% - 1 hr, 4 hr timeframes tradable
less than 5% - 4 hr timeframe tradable

Example of 'Trade on Single Timeframe' usage:
In this mode general logic of instrument total strength validation for each timeframe and timeframe switching on/off remain the same. But just the first timeframe will be used for trading and all dedicated risk will be put in this position.

Using 'Trade on Single Timeframe'

+30% - 1 min tradable
20-30% - 5 min tradable
10-20% - 15 min tradable
5-10% - 1 hr tradable
less than 5% - 4 hr tradable

Hedge mode Settings

<u>* Hedging max chain length</u>

Define the maximum amount of orders that can be handled in the hedging chain. Works just in HEDGING mode. In hedging, every next order will be placed if the price crosses the recovery zone and this order will have a higher size. Default value is 3. Every next order will increase it size to cover the loss of previous orders.
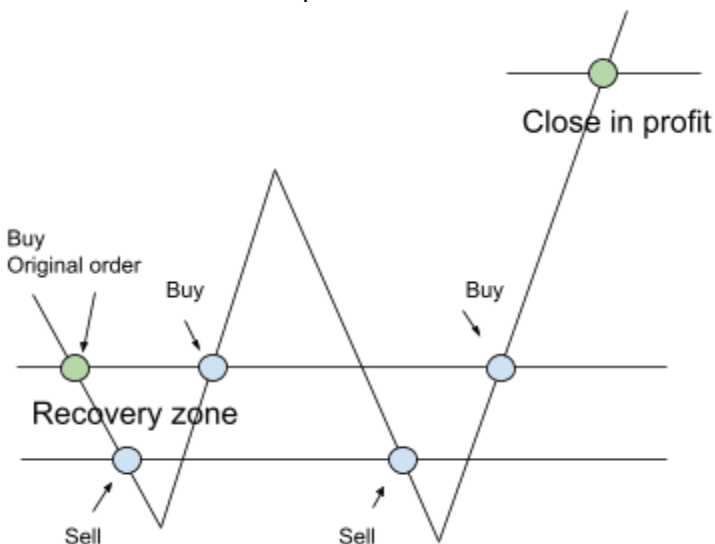
Example of hedging chain with 5 hedge positions

<u>* Hedge multiplier</u>

Defines the multiplication of position sizes depending on the opposite position. 1.5 multiplication is the default. This means that all of the time, your hedged position will be at least 1.5 times larger than the opposite.

By changing this multiplier, you will automatically change the approximate price level shift that needs to be reached to close the hedge chain profit. When setting a higher multiplier, you need to understand that the size of the orders will be increased and you will need to monitor the free margin available in your account. For approximate calculation of next order size in chain you can just multiply previous order size on '<u>Hedge multiplier</u>' value. For approximate calculation of price level required to close hedge chain in profit you can use next formula:

$$\text{shift} = 1 \,/\, (\text{hedge\_multiplier} - 1)$$
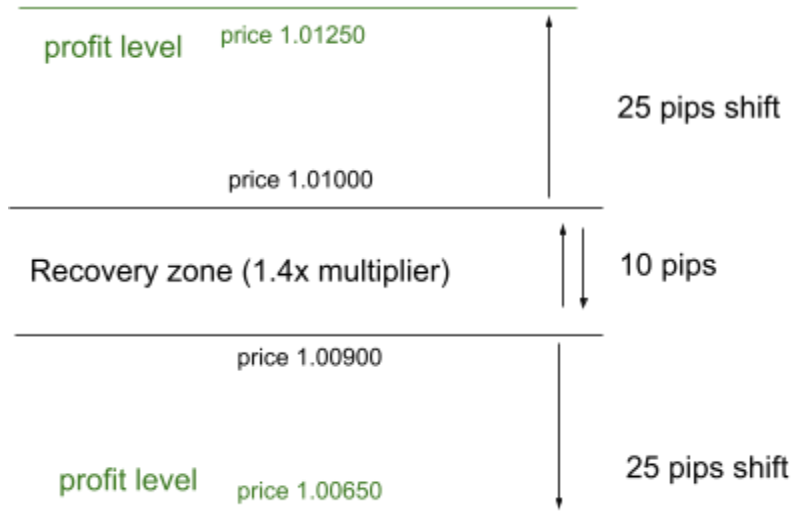$$\text{price\_level} = \text{recovery\_zone} \pm (\text{recovery\_zone\_pips} * \text{shift})$$

Examples:

hedge_multiplier = 1.4;
recovery_zone = 10 pips;

shift = 1 / (1.4 - 1) = 2.5 times;

Shift from top or bottom of recovery zone must be at least 2.5 times greater than recovery zone itself, 10 pips * 2.5 = 25 pips.

profit level   price 1.01250

25 pips shift

price 1.01000

Recovery zone (1.4x multiplier)   10 pips

price 1.00900

profit level   price 1.00650   25 pips shift

hedge_multiplier = 1.5;
recovery_zone = 10 pips;
shift = 1 / (1.5 - 1) = 2 times;

profit level   price 1.01200

20 pips shift

price 1.01000

Recovery zone (1.5x multiplier)   10 pips

price 1.00900

20 pips shift

profit level   price 1.00700
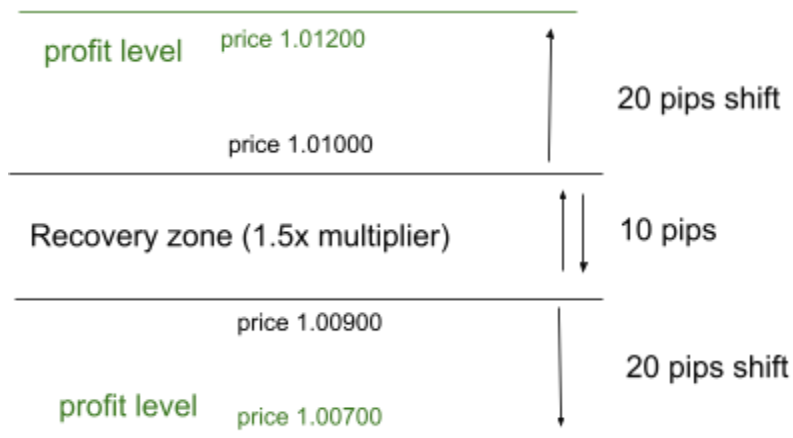
Example of position size change with 1.4x and 2x multipliers

1.4x greater than opposite on each step

1 lot   0.96 lot

1.4 lot   1.35 lot

10 pips recovery zone

Need around 3x shift to be profitable
~30 pips shift

1.4x greater than opposite on each step

2x greater than opposite on each step

1 lot   3 lot

2 lot   6 lot

10 pips recovery zone

Need around 1.1x shift to be profitable
~11 pips shift

2x greater than opposite on each step
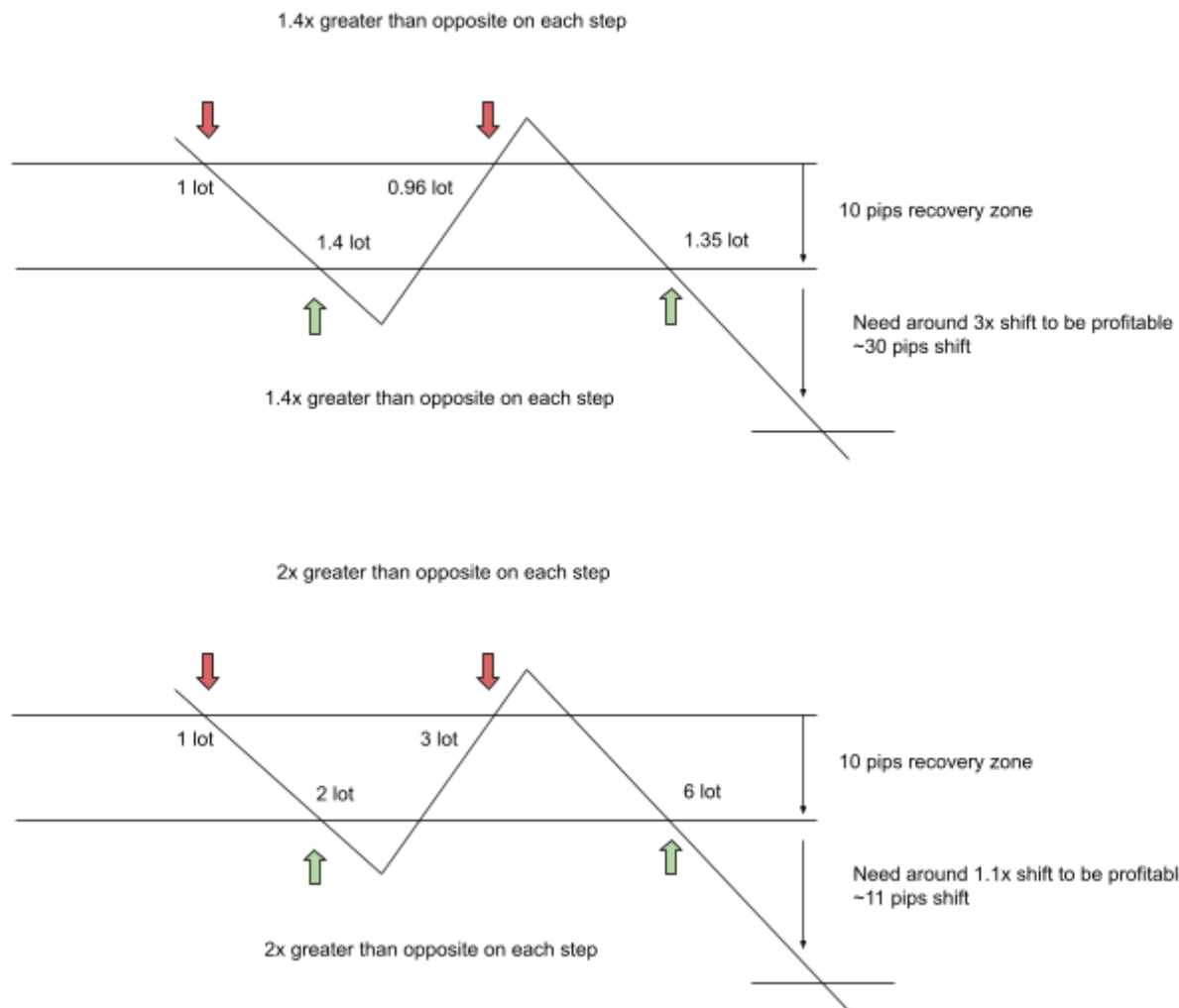
* Count Swap In Hedge PNL
During the hedging process, NA calculates the profitability of all positions in the chain and closes it when the summary of profits and losses give a positive value. This option gives the ability to add swap fees in this calculation. But if positions are running for a long period of time, profits will not be able to cover swap commissions. By default it is switched on.

* Close positions if total PNL positive
Logic that automatically close positions for specific instrument if hedging chain length hit it maximal length on any timeframe, but total PNL of all positions for instrument across all timeframes are positive.

In hedging mode positions are closing by opposite. This logic saves part of commission and is not sensitive to spread.

Price level to place hedge orders (recovery zone), NA select itself depending on market condition and width of specific band.

Classic mode Settings

* Close positions if total PNL positive
Logic that automatically close positions for specific instrument if total PNL of all positions for instrument across all timeframes are positive.

Scalper mode Settings

* SL/TP ratio
Specify SL/TP ratio for order. Default is 1.

Map Symbols

Variable	Value	
--- Map symbols		
ab Prefix		
ab Suffix		
ab WTICOUSD		
ab BCOUSD		
ab JP225USD		
ab US2000USD		
ab SPX500USD		
ab NAS100USD		

Gives users the ability to map instruments to specific broker instrument formats. Can be mapped one by one, or if the broker uses a specific suffix or prefix for all instruments, it can be set that way also.

Hedging mode

Mode that combine risk distribution between timeframes bands and hedging of each band orders to decrease possible losses. Risk and order sizes splitted between bands from lower timeframes to higher not equally, this gives the ability to cover possible losses on low timeframe with higher timeframes.

In hedging mode NA bot must be 24/7 online and with access to internet. NA in hedging mode can close positions before it hit SL/TP levels.

Classic mode

Using same methods of risk distribution between timeframes bands but without hedging. Risk and order sizes splitted between bands from lower timeframes to higher not equally, this gives the ability to cover possible losses on low timeframe with higher timeframes. Classic mode strategy is not sensitive to NA online state or internet issues.

Scalper mode

In SCALPER trading mode, limit orders are placed on the support or resistance bands based on the instrument's trend. Take profit (TP) is set at the N (natural) level of the band. The stop loss (SL) is calculated by measuring the distance between the open price and TP. If the market is in an uptrend, a buy order is placed on the support level with TP set at the natural level. Conversely, if the market is in a downtrend, a sell order is placed on the resistance level with TP set at the natural level. It is recommended to use this mode with small accounts and on 5-minute or 15-minute timeframes. Scalper mode strategy is not sensitive to NA online state or internet issues.