

## MT 4 – EA Brief / Design Parameters (Grid Trading System)

### Sept 2020 – V3 Simplified

#### Background

A grid trading system where trades are opened on a grid basis and closed on set parameters for take profit / stop loss.

#### Trade Signals (Opening of Transactions)

I would like to select from two options:

1. Standard Grid Option – This is an option where a buy and a sell transaction will be opened once the price crosses a predetermined grid level based on the following:
  - a. Grid spacing is an input parameter that I would like to specify. This will for example allow me to specify the grid spacing to be 50 pips.
  - b. Orders will be placed via buy / sell stops or limits (depending if the order is higher or lower than the current market price)
  - c. There will be a maximum of only one open buy and / or one open sell transaction per grid level. If a transaction is closed, a new buy / sell will be opened once the price cross the grid level again. Since there are several grid levels it means that there can be several open buy / open sell transactions at any given time, but only a maximum of one open buy and / or sell transaction per grid level.
  - d. Lot size – This should be an input parameter that I would like to be able to select / specify. The specified lot size will be the same for all transactions.
  - e. Long & Short Only – In general, the EA “Testing Tab” / “Common Tab” allow for “Long Only”, “Short Only” and “Long and Short”. I would like these options to be available.
  - f. Magic Number – This is required since I trade multiple currency pairs at the same time on the same trading platform. All EA trade execution and calculations should be on a single currency pair basis (and not over a basket of currencies).
  - g. Transactions to be opened on gridline values (and not on bar close)
  
2. Directional Grid Option – This option will open buy transactions when the price moves up and crosses a predetermined grid above the current market price. It will implement sell transactions when the price moves down and the crosses a predetermined grid below the current market price. This is based on the following:
  - a. Grid spacing is an input parameter that I would like to specify. This will for example allow me to specify the grid spacing to be 50 pips.
  - b. Let’s Assume the EURUSD is currently at 1.1838, the grid spacing is set at 50 pips and the price is moving higher. Let’s assume the first buy transaction will be at 1.1850, the second at 1.1900, the third at 1.1950 and so on.
  - c. Sell transactions will be implemented once the price has moved a set amount of grids down. The amount of grids is an input parameter that I would like to select. In the example above, let’s assume the price is currently on 1.1970. This will mean that 3 buy transactions have taken place to date (on grid lines 1.1850, 1.1900 and 1.1950). If I select the input parameter as 1 grid (for when the sell transactions are to commence), it means that the first sell transaction will take place at 1.1900 (the last buy transaction was on grid 1.1950 and 1 gridline lower is 1.1900). If I select the

- input parameter as 2 grids, it means the first sell transaction will be implemented on 1.1850 (the last buy transaction was on grid 1.1950 and 2 gridlines lower is 1.1850).
- d. The amount of specified grids between buy transaction and sell transactions remain the same. So for the example above, let's assume the price drops to 1.1830 and I have selected the grid spacing (between buy & sell transactions) to be 2 grids. This will mean that there will be 1 sell transaction (that was opened on grid 1.1850). The price bottoms out at 1.1830 and move up. The first buy transaction will be on grid 1.1950 (since it is 2 grids higher than the last sell transaction on grid 1.1850). Given that we have previously opened a buy transaction on grid 1.1950 (and that there are only to me a maximum of 1 open buy and or sell per grid level), a buy transaction will only take place on 1.1950 if the previous buy has been closed out by this time (take profit or stoploss). Let's assume the previous buy transaction on grid level 1.1950 is still open, there will thus not be a new buy on grid 1.1950 (since previous transaction is still open). The next buy transaction will then be on grid 1.200.
  - e. There will be a maximum of only one buy and / or one sell open transaction per grid level. If a transaction is closed, a new buy / sell will be opened once the price cross the grid again as per the above details.
  - f. Lot size – This should be an input parameter that I would like to be able to select / specify. The specified lot size will be the same for all transactions.
  - g. Long & Short Only – In general, the EA “Testing Tab” / “Common Tab” allow for “Long Only”, “Short Only” and “Long and Short”. I would like these options to be available.
  - h. Magic Number – This is required since I trade multiple currency pairs at the same time on the same trading platform. All EA trade execution and calculations should be on a single currency pair basis (and not over a basket of currencies).
  - i. Transactions to be opened on gridline values (and not on bar close)

### Timeframes

Given that it is a grid trading system, timeframes are not relevant (since calculations are not based on trading timeframe inputs).

### Forex pairs

I trade all forex pairs

### Trading Software

I trade on MT4

### Take Profit

Take profit will be a selection or combination of the below options. I would like to enable or disengage the individual options as part of the input parameters. This should also allow me to select no take profit (by disengaging all options).

- 1) Option 1 – take profit on each open transaction on an “z” amount of pips with “z” being an input parameter. This is like the standard take profit setting that is available on MT4

- 2) Option 2 – Take profit when all open buy transactions have achieved an **average** pip profit of “y” pips with “y” being an input parameter. For example, there are 7 open buy transactions and “y” is set at 50 pips. Thus take profit will be when the overall pip profit of all open buy transactions are 350 pips. This might mean that some open buy transactions are closed at a loss, but the remainder will be in profit ensuring a total of 350 pip profit. Open sell transaction will take profit the same way as for the buy transactions based on the same “y” input but are kept / calculated separately. Thus, do not combine the take profit for buys and sells (keep them separate).
- 3) Option 3 – The take profit is the same as for option 2 with the exception that it is calculated on the **combined** open buy and sell transactions based on an input parameter of “x” pips. For example, let’s say we have 6 open buy transactions and 4 open sell transactions and “x” is set at 30 pips. Take profit will then occur when overall profit on all open transactions (buy and sell) is 300 pips  $((6+4) \times 30 \text{ pips})$
- 4) Option 4 – Take profit occurs when all open transactions adds up to a pip profit of “w” with “w” being an input parameter. This is similar to option 3 above with the difference that the take profit occurs on a fixed amount of pips regardless of the amount of open transactions. For example, “w” is set at 150 pips. Take profit will then occur when the sum total of all open buy and sell transactions equates to 150 pip profit (regardless of the quantity of open transactions)
- 5) Option 5 – Take profit occurs when the price falls back a set amount of grids (with the quantity of grids being an input parameter). As per example above, let’s assume EURUSD is trading at 1.2020. The last buy transaction was on 1.200. Let’s assume, the grid spacing selection for this take profit option is set at 2 grids, it will then mean that when the price drops to 1.1900 all open buy and sell transactions will be closed. The inverse is also applicable (when the last open transaction was a sell and the price pulls back (lifts) by 2 grids)
- 6) Option 6 – This is the same as for option 5 with the change that only trades with a positive value are closed. All negative transactions remains open

Please take note that the input parameters (w, x, y & z) are unique to each option. For example, I will therefore be able to set the take profit for option 1 on 30 pips and option 2 at 50 pips.

### Stop Loss

Stop Loss will be a selection or combination of the below options. I would like to enable or disengage the individual options as part of the input parameters. This should also allow me to select no stop loss (by disengaging all options).

- 1) Option 1 – Stop loss on each open transaction on an “v” amount of pips with “v” being an input parameter. This is like the standard stop loss setting that is available on MT4
- 2) Option 2 – Stop loss when all open buy transactions has achieved an **average** pip loss of “u” pips with “u” being an input parameter. For example, there are 7 open buy transactions and “u” is set at 50 pips. Thus stop loss will be when the overall pip loss of all open buy transactions is 350 pips. This might mean that some open buy transactions are closed at a profit, but the remainder will be in loss resulting in a total of a 350 pip loss. Open sell transaction stop loss will be the same way as for the buy transactions based on the same “u” input but are kept / calculated separately. Thus, do not combine the stop loss for buys and sells and keep them separate

- 3) Option 3 – The stop loss is the same as for option 2 with the exception that it is calculated on the combined open buy and sell transactions based on an input parameter of “t” pips. For example, let’s say we have 6 open buy transactions and 4 open sell transactions and “t” is set at 30 pips. Stop loss will then occur when overall loss on all open transactions (buy and sell) is 300 pips  $((6+4) \times 30 \text{ pips})$
- 4) Option 4 – Stop loss occurs when all open transactions adds up to a pip loss of “s” with “s” being an input parameter. This is similar to option 3 above with the difference that the stop loss occurs on a fixed amount of pips regardless of the amount of open (buy + sell) transactions. For example, “s” is set at 150 pips. Stop loss will then occur when the sum total of all open buy and sell transactions equates to 150 pip loss (regardless of the quantity of open transactions)
- 5) Option 5 – Stop loss is set on a trailing stop like the standard option available on MT4. Trailing stop will be at “r” pips with “r” being an input parameter. Stop loss will be applicable for each individual transaction (and not combined with other transactions)

Please take note that the input parameters (r, s, t, u & v) are unique to each option. For example, I will therefore be able to set the take profit for option 1 on 30 pips and option 2 at 50 pips.

#### Input Parameters & Requirements

- To select between the options for take profit and stop loss as detailed above. I would like to be able to select all combinations
- To select the input parameters as detailed above.
- I will run this EA on multiple charts / currency pairs at any given time (up to 28 charts at a time) on the same trading account. It is important that the EA recognises that it should buy, sell and take profit on a forex pair by forex pair basis and keep calculations separate from other charts /forex pairs.
- Trading will occur on MT4 Trading platform.
- All take profit and stop loss calculations are based on pip values (and not on monetary value of transaction).
- Source code to be provided.