

## **INSTALLATION**

**To install copy Crescendo\_v1dot4.ex4 into your "MT4/Experts" folder and copy HullMA.ex4 and HMAcceleration.ex4 into "MT4/Experts/Indicators" folder.**

**You can apply Crescendo\_v1dot4 to 1H charts of GBPUSD, EURUSD, GBPJPY, USDCHF and USDJPY.**

## **OPTIONS LIST**

### **AUTHENTICATION OPTIONS**

***username = "";***

***password = "";***

those are the username and password used to login to the download area

### **STRATEGY SETTINGS**

***initial\_balance = 10000;***

this is the initial balance or the balance that the EA should use to trade.

***order\_step= 60;***

this is the minimum amount of pips of distance from the last open order.

***target\_profit = 4;***

this is the target profit in US dollars (!) that all the orders must reach to close them.

***trailing\_note = "0 - none; 1 - by profit;"***

***trailing\_strategy = 0;***

***trail\_start = 4;***

***trail\_step = 2;***

if "profit\_trailing" is set to true, the target profit is not used and a profit trailing procedure is used instead. The trailing will start when the "trail\_start" value is reached and the orders will be closed if the profit "retrace" of "trail\_step" value from the highest profit value. So by default when the profit reach \$4, if the profit come back to \$2 all the orders are closed. But in case the profit continue to increase and reach for example a maximum value of \$10, the orders will be closed when the total profit value retraces to \$8 (10-2). All the values are in US dollars (!).

***frequency\_note = "0 - always; 1 - every hour; 2 - every 3 hours";***

***frequency\_noteb = "3 - every 6 hours; 4 - every 12 hours; 5 - every 24 hours";***

***frequency = 3;***

this is the frequency used for the market check. **The default frequency now is 3 (every 6 hours) and no longer 4 as the filters we are applying to orders opening will lower the number of orders.**

***dd\_based\_frequency = False;***

***dd\_step = 1;***

this option will make the frequency to be "automatic" and increase/reduce based on the value of the draw down percent. The "dd\_step" will decide the step used to calculate the frequency value. I suggest you to leave that option to false (as is by default) as it needs more work to find the "optimum" setting.

***trend\_threshold = 3;***

***check\_TrendScore\_add\_trades = true;***

This will let the EA trade by using the trend score coming from the direction of 5 Hull Moving Averages. The "trend\_threshold" is the minimum magnitude score to enter a trade. By default it is 3 meaning that a trend score of +3 or +5 is needed to open long trades, while a trend score of -3 or -5. Remember that there are only 3 levels of magnitude (from the weaker to the stronger): 1, 3 and 5.

***additional\_entries\_threshold = 1;***

this option give you the possibility to filter additional orders also based on the trend score. If the magnitude of the trend is equal or more that the "additional\_entries\_threshold" than the additional order is issued. So if for example the first order is a BUY entered with a trend score of +3, the additional orders can be sent only if the trend score of +1 or more.

**This is made to issue additional orders when the trend direction of the initial order is resumed.**

***trend\_timeframe\_1 = PERIOD\_H1;***

***trend\_timeframe\_2 = PERIOD\_H1;***

***trend\_timeframe\_3 = PERIOD\_H1;***

***trend\_timeframe\_4 = PERIOD\_H1;***

***trend\_timeframe\_5 = PERIOD\_H1;***

those are the timeframe of each of the Hull Moving Averages. **With version 1.4, by default we'll use not a multi TIMEFRAME, but a multi PERIOD approach. So the timeframes will be all the same for all 5 the Hull MAs. This is because of some "fault" of Metatrader 4 in managing multi timeframe data both in backtests and when trading live. The multi period approach will avoid that kind of problem giving a much more "stable" trend score.**

***trend\_period\_1 = 24;***

***trend\_period\_2 = 48;***

***trend\_period\_3 = 72;***

***trend\_period\_4 = 96;***

***trend\_period\_5 = 120;***

those are the periods of the 5 Hull MAs. With version 1.4 by default we'll work with different periods instead of the previous default of 10 applied to different timeframes.

***bar\_0 = 1;***

***bar\_1 = 2;***

bars used to evaluate if the trend is going up or down.

0 - actual bar (not yet closed); 1 - first closed bar; 2 - second closed bar ... etc.

***trend\_algo\_note = "0 - Simple HMA Trend Score; 2 - Simple HMA average";***

***trend\_algo\_note2 = "3 - Speed HMA Trend Score; 4 - Acceleration HMA Trend Score";***

***trend\_algo\_note3 = "5 - Average of Speed HMA and Acceleration HMA Trend Scores";***

***trend\_algo\_note4 = "6 - ParabolicSAR Trend Scores";***  
***trend\_algo\_note5 = "-1 - Manual Trend SELL; +1 - Manual Trend BUY";***  
***trend\_algo = 4;***

determines the trend algorithm used.

0 is the one actually used based on a score given by the direction of 5 Hull MAs

2 sums up the 5 HullMAs and divide the value by 5 to have a composite "hullMA"

if set to -1 or +1 it'll manually set the trend direction.

3 uses a HullMA smoothed Speed indicator to determine the trend (instead of a simple HullMA)

4 uses a HullMA smoothed Acceleration indicator to determine the trend (instead of a simple HullMA)

6 uses the Parabolic SAR applied to multiple timeframes to calculate the trend

***More informations on that here: <http://www.pimpmysa.com/the-art-of-trend-scoring/>***

***check\_for\_minimum\_bars = false;***

Checks if the platform has the minimum amount of bars to calculate the trend score correctly. We suggest you to set that to true at least at the beginning if you want to check if you have enough bars in your history data to have trend score calculated correctly.

***check\_BullBear\_1st\_trade = true;***

***check\_BullBear\_add\_trades = false;***

those option let you select the oscillators filters for the first trade of a set and/or for the additional traders.

***filter\_strategy\_note = "0 - Simple Stochastic; 1 - Multiple Stochastics";***

***filter\_strategy\_note2 = "2 - Simple RSI; 3 - Multiple RSIs";***

***filter\_strategy = 3;***

those are the 4 filter available: the stochastic one is a 5,3,3 stochastic applied to 1H timeframe, the stochastic3 is the average of the stochastics using the trend\_timeframe1/2/3 and trend\_period1/2/3. The rsi1 is the RSI of the trend\_timeframe1/trend\_period1. The rsi3 is the average of the trend\_timeframe1-2-3/trend\_period1-2-3

***Bullish\_threshold = 60;***

***Bearish\_threshold = 40;***

OB\_threshold is the level used as a filter for a buy. If the value of the oscillator is > OB\_threshold than it is good for a BUY.

OS\_threshold is the level used as a filter for a sell. If the value of the oscillator is < OS\_threshold than it is good for a SELL.

I use the oscillators as "momentum" indicators and not really overbought/oversold values (!!).

***close\_on\_counter\_trend = false;***

***counter\_trend\_threshold = 5;***

if set to true then the EA will close the trade if the trend score reverses in the opposite direction of the initial order with a magnitude of "counter\_trend\_threshold" value or more.

***use\_stop\_loss = false;***

***stop\_loss = 500;***

those options let you set a fixed stop loss to every order issued.

***max\_total\_DD = 30;***

this is maximum total draw down before closing all the orders.

***avoid\_low\_volume\_periods = true;***

when set to true, the EA will stop from opening new positions around August and mid December to mid January. This is to avoid the EA to get caught in periods with low trading volumes that are very unstable. The periods are "hard coded" inside the EA code.

## **MONEY MANAGEMENT OPTIONS**

***max\_open\_orders = 10;***

this is the maximum number of total open orders.

***lot\_size = 0.01;***

this is the lot size used to open the initial order and the additional ones if no martingale is used. If a martingale is used then the additional orders lots sizes will be calculated based on the martingale strategy.

***slippage = 5;***

this is the maximum slippage (difference between the price level sent by the EA and the one offered by the broker)

***compounding = false;***

***compounding\_factor = 0.5;***

***fine\_compounding = true;***

those options let you set the automatic compounding option. It'll use the "initial\_balance" to calculate the minimum amount of gain to increase the initial "lot\_size".

The "compounding\_factor" tells the EA how fast it'll have to start compounding. With a value of 0.5 it means that when the gain will be equal to the initial\_balance, the compounded lot\_size will be only 50% more of the initial lot\_size.

The increase of the lot size is made gradually and if the "fine\_compounding" is set to true the it'll use microlots (0.01 steps) to increase the lot\_size for every order as the EA starts gaining.

So, the higher the number of the "compounding\_factor" (default is 0.5 but can be 1 or 2 or any number) the faster the increase of the lot\_size. I suggest you not to increase it too fast as otherwise you risk to hit the "max\_DD" (see below). A value of 0.5 is in my opinion the best balance (max 1). But if you don't worry too much about the DD and want to aggressively increase the lot\_size, you can set to values higher than 1.

The fine compounding (if microlots steps are allowed by your account/broker) it is surely the best choice as it'll give you the smoothest increase of the lot\_size value.

**Note that the target profit is AUTOMATICALLY adapted as the lot\_size increases (even if the target profit is set to trailing!).**

***martingales\_note = "0 - No Martingale; 1 - Linear";***

***martingales\_note2 = "2 - Fibonacci; 3 - Exponential; 4 - Logarithmic";***

***martingale\_strategy = 1;***

***exponential\_factor = 2;***

***logarithm\_multiplier = 4;***

those are a set of 4 different martingale strategies.

The linear one uses that sequence 1, 2, 3, 4, 5, 6, etc multiplied by the lot\_size.

The Fibonacci uses the sequence 1, 2, 3, 5, 8, 13 etc multiplied by the lot\_size.  
The exponential uses the classical exponential increase, so with a factor of 2 the sequence is 1, 2, 4, 8, 16 etc.  
The logarithmic one uses the natural log multiplied by the log\_multiplier to increase the lot\_size.

***GMT\_time\_shift = 7;***

GMT shift used to determine the "virtual midnight" of the EA

***Magic\_Number = 130907;***

magic number used by the EA

***randomize\_entry\_minute = False;***

adds a random amount of minutes for opening a new order

***comment = "Crescendo\_1.4";***

sets the comment sent with every order

***hide\_comment = false;***

sends orders without any comment

***verbose = true;***

*set it to false to speed up backtests*