# Multi Symbol EA – Bug Fix and Enhancement

**Objective:** Find/fix 3 Bugs and Implement one new parameter

**Tasks:**

1) Bug find/fix: automatically identify and exclude orders in the “placed” status
2) Bug find/fix: understand why sometimes the position opens with double volume and solve it
3) Enhancement: include a new parameter to define the max allowed open positions at the same time

**EA details:**

The EA monitors 75 symbols identified in a CSV file placed on the FILE folder. The same CSV also contains a series of parameters that are used to control when to open and close positions.

```
ABEV3,10000,20,1.5,2,0.10,-100,-0.00,0.5,0.01,1,10:15,16:30
B3SA3,10000,20,1.5,2,0.10,-100,-0.00,0.5,0.01,1,10:15,16:30
BBAS3,10000,20,1.5,2,0.10,-100,-0.00,0.5,0.01,1,10:15,16:30
BBDC4,10000,20,1.5,2,0.10,-100,-0.00,0.5,0.01,1,10:15,16:30
BBSE3,10000,20,1.5,2,0.10,-100,-0.00,0.5,0.01,1,10:15,16:30
BPAC11,10000,20,1.5,2,0.10,-100,-0.00,0.5,0.01,1,10:15,16:30
BRDT3,10000,20,1.5,2,0.10,-100,-0.00,0.5,0.01,1,10:15,16:30
BRFS3,10000,20,1.5,2,0.10,-100,-0.00,0.5,0.01,1,10:15,16:30
BRKM5,10000,20,1.5,2,0.10,-100,-0.00,0.5,0.01,1,10:15,16:30
BRML3,10000,20,1.5,2,0.10,-100,-0.00,0.5,0.01,1,10:15,16:30
```

The code contains 750 rows, and the open signal is on the following part:

```
571
572     if (r2 > Currencies[i].s_R2_Trigger_Percentage &&
573       SW1 * avgvar > SW1 * Currencies[i].s_AvgVar_Trigger_Percentage &&
574       SW2 * y2e > SW2 * Currencies[i].s_Y2e_Trigger_Percentage &&
575       SW3 * lastvarp > SW3 * Currencies[i].s_VarLastM_Trigger_Percentage) {
576       Buy(i);
577     }
578
579
580     if (r2 > Currencies[i].s_R2_Trigger_Percentage &&
581       SW1 * avgvar < SW1 * -Currencies[i].s_AvgVar_Trigger_Percentage &&
582       SW2 * y2e < SW2 * -Currencies[i].s_Y2e_Trigger_Percentage &&
583       SW3 * lastvarp < SW3 * -Currencies[i].s_VarLastM_Trigger_Percentage) {
584       Sell(i);
585     }
586
```

And the close signal is on this part:

```
540     double price = iClose(Currencies[i].CurrSymbol, PERIOD_CURRENT, 0);
541     int Period_ = iBarShift(Currencies[i].CurrSymbol, PERIOD_CURRENT, Currencies[i].SavedY2StartTime);
542     if (Currencies[i].OrderBuy) {
543       if (price >= (Currencies[i].SavedY2Start * (1-(Currencies[i].SavedY2e/100))) * (1+Currencies[i].s_TP_Factor/100) + TPSW * Period_ * Currencies[i].SavedY2Step  ||
544         price <= (Currencies[i].SavedY2Start * (1-(Currencies[i].SavedY2e/100))) * (1-Currencies[i].s_SL_Factor/100) + SLSW * Period_ * Currencies[i].SavedY2Step ||
545         Period_ > MaxMinutes)
546         CloseOrdersOf(i);
547     } else {
548       if (price <= (Currencies[i].SavedY2Start * (1-(Currencies[i].SavedY2e/100))) * (1-Currencies[i].s_TP_Factor/100)+ TPSW * Period_ * Currencies[i].SavedY2Step ||
549         price >= (Currencies[i].SavedY2Start * (1-(Currencies[i].SavedY2e/100))) * (1+Currencies[i].s_SL_Factor/100) + SLSW * Period_ * Currencies[i].SavedY2Step ||
550          Period_ > MaxMinutes)
551         CloseOrdersOf(i);
```

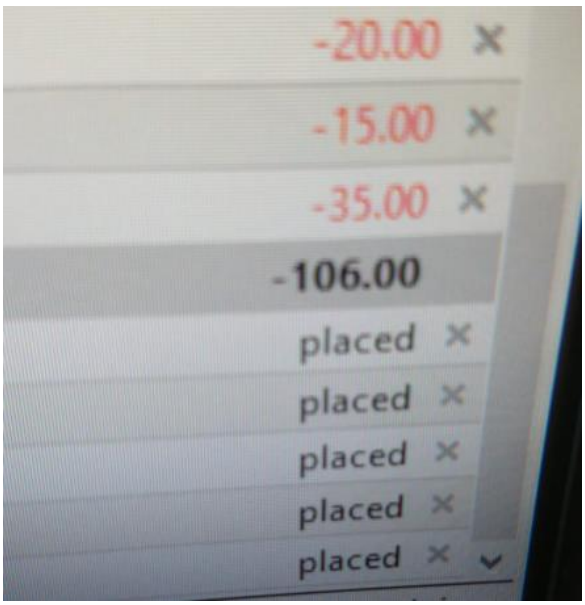
1) **Bug find/fix: automatically identify and exclude orders in the “placed” status**

Sometimes, the buy/sell signal opens, the order is sent, but the order remains in the “placed” status, causing a lot of issues later. This happens in rare occasions, usually when the symbol “freezes” for some reason, right when the signal opens.

These placed positions might also be the reason why the EA malfunction regarding an open position, not closing for any of the “close triggers”

The expect solution (open to suggestion) is to constantly look for this status and remove them (on tick)

Also, in order to avoid more issues, if a symbol is on placed status, check and do not send other orders for the same symbol while this situation is not changed.



### 2) Bug find/fix: understand why sometimes the position opens with double volume and solve it

The volume to fill the order is calculated based on the lot size defined in the parameter. Example: If the lot size = $10k and price of the stock is $35, the EA should try to buy 10k/35 volume, or 285 units. Then the lower next multiple of 100 need to be select, in this case 200.

In this market, all order must be in multiples of 100 (100, 200, 300, etc). This is controlled by the Lot_Min parameter.

```
double volume = Lot_Min * ((int)((Currencies[Currency].s_Lot_Size / iOpen(Symbol_, PERIOD_D1, 0)) / Lot_Min));
```

Must of the time, this process works well, and the right volume is sent as an order, but in 2% of the cases, the order is sent with double the volume. There is apparently no relation to a specific symbol or price

The expect solution is to find and fix this issue, so the order is constantly correct

### 3) Enhancement: include a new parameter to define the max allowed open positions at the same time

Sometimes, the market conditions cause many Buy/Short signals to open ate the same time, ending in an excessively number of positions (and financial exposure) to be open. Although all positions make sense individually, it is not wise to take such a risk at a particular time in the day.

The idea is to have a new parameter to control the number of Max positions to be open at the same time.

When a signal opens, it needs to check the number of open positions at the moment, if the number is lower than the max parameter, EA can go ahead and open a new position, but if the max is already reached, the order should not be sent, and a message should appear in the log (like others indicating why the order was not sent).

This will continue happening until the scenario is changed and one of the current positions is closed

| Time | Symbol | Ticket | Type |
|---|---|---|---|
| 2021.02.08 10:34:03 | csna3 | 976235067 | sell |
| 2021.02.08 10:33:01 | usim5 | 976187084 | sell |
| 2021.02.08 10:17:14 | brfs3 | 975300884 | sell |
| 2021.02.08 11:15:07 | prio3 | 978100679 | sell |
| 2021.02.08 10:25:08 | cvcb3 | 975698186 | sell |
| 2021.02.08 10:32:19 | brdt3 | 976155506 | buy |
| 2021.02.08 11:35:04 | ggbr4 | 978942205 | sell |
| 2021.02.08 10:58:25 | csna3 | 977369578 | sell |
| 2021.02.08 10:16:18 | ugpa3 | 975247373 | sell |
| 2021.02.08 10:34:03 | prio3 | 976235107 | sell |
| 2021.02.08 10:28:02 | petr4 | 975897632 | buy |
| 2021.02.08 10:15:06 | prio3 | 975171016 | sell |