

LaserMarkers AMM

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1 How to add a new model to the laser markers in *Diecast*

In this document I'll explain how to add a model to the laser markers. This pretended to be a "step by step guide to the new users.

All of this addings and modification requires a medium level of knowledge in *PLC*, more spesific in AllenBradley *Micrologix1400* series, because of the status of the actual plc memory, and the how those laser were programmed and the models that are llready *programmed* those procesors dont have enough memory, so you need to be careful when you add *timers*, *strings*, etc.

NOTE: this is not my method, is the method that AMM uses

2 Ladder: *MODEL*OS

2.1 Add the program number.

Rung 25

- That is going to be in the HMI and the lasermarker module, this need to be consecutive of the last model.
- This is going to be in the *MOV* instruction.

2.2 Set the Fixture Bit.

- In the rung: *BINARY* lives the bits for each fixture depends of the family of the fixture is the one that you should use, if there is not a bit to use you need to create one depending of the binary of the fixture.

2.3 Set the *Bit* model.

- Add the *OPE* bit for set the current model (see picture below adress is: *B3:15/9*).

2.4 Set the *Bit* for incorrect fixture.

- Add the *OPE* of *Incorrect fixture* (see picture below adress is: *B3:66/10*)

2.5 Add the timers.

- Those are going to be necessary on the *STATELOGIC* ladder to reset the laser module.
- **note: Be carefull with the adressing of those timers**

3 Ladder: *FAULTS*

3.1 Set the Incorrect Model Alarm.

Rung 12

- Add to the rung 12 the *B3:61/13* bit as *OR* to set the: Alarma Modelo Incorrecto *OTL*.

3.2 Set the Incorrect Fixture Alarm.

Rung 13

- Add to the rung 13 the *B3:66/10* bit as *OR* to set the: Alarma Fixture Incorrecto *OTL*.

4 Ladder: *MANIT*

4.1 MANIT Response.

- Add the string of the *MANIT* Response string to the *ST10* variables, this need to be consecutive to the last. **NOTE: This String is case sensitive to the response of MANIT, this need to MATCH.**
- In this example the last modified string was *ST10:33* so the next string to append is the *ST10:34*.

4.2 Extract the MANIT String Serial.

Rung 0

- Add to the rung 0 the *B3:15/9* bit as *OR* to the *AEX* instruction.

4.3 Set the *Setup Done From MANIT* bit.

Rung 1

- Add the *ASR* instruction to compare *ST10:3* whit *ST10:34*. **AND** the *XIC RESPUESTA CORRECTA FIXTURE <MODEL>* to set the *Setup Done From MANIT* bit.

4.4 Set the length of the serial string data.

Rung 4

- In this rung you need to set the length of the serial that correspond to the models, in the newest models the laser will print 22 digits and in the older versions only 16 digits.

4.5 Clean the MANIT Strings.

Rung 7

- Add the *B3:15/9* bit as *OR* to clean all the *MANIT* strings.

5 Ladder: *STATLOGIC*

5.1 Set the *Correct Response & Incorrect code Alarm*

Rung 57

- Add the next *OTL* and *OTE* and *TIMER* as the structure showed in the below picture:
 - *OTL B3:61/7*: ALARMA CODIGO INCORRECTO <MODELO>.
 - *OTE B3:71/7*: RESPUESTA CORRECTA <MODELO>.
 - Add the timer. **NOTE: Be carefull with this timer adress**

5.2 Reset logic.

Rung 58

- Append the *OTU* address *B3:61/7* to this rung.

6 Ladder: *OUTPUTS*

6.1 Add the binary to *CALL* the lasermarker program.

This modification begins in the rung 10

This is the most confusing rung of the entire modification that you will do, because of the *lack* of structure in the program, you'll see this in a moment.

Depending of the number of the model that you add in the first step in this guide (in this example is the number 23), you need to conver it to a binary to set the output to the lasermarker module.

O:2/4	O:2/3	O:2/2	O:2/1	O:2/0	Decimal value
0	0	0	0	1	this is a 1 in decimal
0	0	0	1	0	This is a 2 in decimal
0	0	0	1	1	This is a 3 in decimal
0	0	1	0	0	This is a 4 in decimal
1	0	1	1	1	The 23 value in this example

So as you see in the table above, you need to append the bit of the model selected, in this example was the bit: *B3:15/9* in every rung that correpond in the bynary conversion.

6.2 Add the timers to reset and set the *Laser READY*.

Rung 20

- In this rung you need to append the *XIC* & *XIO* of the timers that we have programmed in the first step Modelos.

7 HMI: *Delta DopSoft Software*

7.1 Add the model to the *Models list*.

- Here you need to add the number of the model in the Modelos step.

7.2 Add the Model name to the Main screen.

Here you simply add the name of the model and number like the past step.

8 LaserMarker: *Panasonic*

8.1 Add the serial image to the laser module.

- In this step you need to add the logo and serial of the model that you are going to program, again, is the same decimal number that you put in the *PLC* program. You can copy from another file and modify the position to make it easy.