

I. Hardware modifications:

1. Program memory (UV PROM) increased to 16k bytes (128k).
2. Non-volatile memory (EEROM) increased to 8k bytes (64k).

II. Functional modifications:

1. The number of the user programs is increased from 4 to 64.
2. All of the Limit Switch programmable parameters are contained and accessible within Program 1.
3. The user can copy the Limit dwells programmed in Program 1 to all of the remaining programs.
4. New input defined: Input 8. If Input 8 is connected to VN on the Relay board, Limit output 11 becomes a multi-dwell output.
5. The user can load new Programs by using the associated program number or by using a " Die code " (8 digit number). In the second instance the IPLC31 will load the program without entering Program Mode.
6. Only one Program Code is available to the user and it is accessible within Program 1. Programming its value other than 0000 affects entering Program Mode of all of the Programs.

III. Modifications of the Minster's Manual No.612:**1. Add on page 4:**

Connect terminals 8 and 10 on TB7 to convert Channel 11 to a multi-dwell output.

2. PROGRAM KEY (page 6):

This key is used to enter PROGRAM mode or select one of the programs (2 - 64) through the use of their " Die Code " without entering PROGRAM mode. User selected (4) four digit program code can be used to restrict entry in any of the available programs.

3. CLEAR KEY (page 6):

Remove the sentence: " It is also used in the P.CODE (program code) command."

4. SPECIAL KEY (page 6):

This key is used as follows:

- a. Immediately after selecting Program 1: Copy the Limit dwell setpoints of Program 1 to Programs 2 - 64.
- b. In any other Program it allows the programming of a "Die Code " as other means of identifying the selected program.

5. PROGRAM SELECTION (page 7):

The MINSTER Bul. 030-8100 Programmable Limit Switch can store 64 user programs in memory. Program 1 includes all Limit switch parameters and all Dwell limits, the rest of the programs contain only dwell limits. The Limit Switch parameters of program 1 are common to all programs. The definition of channels 9 - 15 as normal or advanced is specific for each program.

6. P.CODE (PROGRAM CODE) (page 7):

A P.CODE (program code) is available to restrict access to the programming mode. Factory supplied units have a P.CODE set to a number that is recorded on a Limit Switch Parameter Log Sheet which is located inside the press electrical control panel. The P.CODE is the same for all programs and can be modified only if program 1 is selected and Switch 1 is in OFF position.

7. PROGRAMMING EXAMPLES (page 7):

- a. Program selection using " Die Code " :
(available for programs 2 - 64)

PRESS KEY	DISPLAY	COMMENT
[Program]	[D. 00000000]	Die code of current program
[1],[2],[3],[4], [5],[6],[7],[8], [Enter]	[D. 12345678]	Program with Die code 12345678 selected
[Pos/Tach]	[P.XXX-T.XXXX]	Position/Tachometer display

- Notes:
1. Pressing [Program] key after [Enter] key will display [PROGRAM XX] where XX is the Number of the program with Die code 12345678.
 2. If there is no program with Die code 12345678 then the display will stay the same with the cursor on "1".
 3. Pressing the [Next] key will display the Die code of the next consecutive program.
 4. Entering a Die code 00000000 will show on the display [PROGRAM XX] where XX is the next available program without a Die code. Initially all programs have 00000000 for Die code.
 5. If two or more programs have the same Die code then the program with the lowest program number will be selected.
 6. Program 1 does not have a Die code.

- b. Program selection using Program number:
(available for programs 1 - 64)

PRESS KEY	DISPLAY	COMMENT
[Program]	[D. 00000000]	Die code of current program
[Program]	[Program 03]	Currently selected program
[1],[Enter]	[Program 01]	Program LED ON. Program 1 selected and programming mode activated.
[Program]	[P.XXX-T.XXXX]	Program LED OFF. Programming mode deactivated.

- c. Program Mode with/without P.CODE and new P.CODE remain the same as on page 8 except that to get to the display: [Program XX] the user has to press the [Program] key twice. P.CODE programming can be done only if program 1 is selected and Switch 1 is in OFF position.
- d. Programming of SCALE FACTOR, OFFSET, AUTO-OFFSET, MOTION DETECTOR, DELAYS, AUTO-CORRECTION remains the same except it can be done only if program 1 is selected.
- f. LIMIT INSPECTION, CONVENTIONAL and ADVANCED LIMIT PROGRAMMING, LIMIT INCREMENT/DECREMENT and LIMIT ERASING remain as in REV.5.
- g. The display of ADVANCE, INPUT/OUTPUT STATUS, STOP TIME and MODEL/REVISION NUMBER remain as in REV.5.
- h. Clearing of TRANSDUCER FAULT and EEROM/RAM errors remain as in REV.5.

i. Programming of DIE CODE:
(new IPLC31 without any Die Codes)

PRESS KEY	DISPLAY	COMMENT
[Program]	[D. 00000000]	Blank Die code
[Enter]	[Program 02]	First program with blank Die code (00000000)
[Enter]	[Program 02]	Program LED ON, program mode active
[Special]	[D. 00000000]	Die code = 00000000
[1],[2],[3],[4],[5],[6],[7],[8],[Enter]	[D. 12345678]	New Die code =12345678
[Program]	[P.XXX-T.XXXX]	Program LED OFF. Programming mode deactivated.

j. Inspecting DIE CODES:

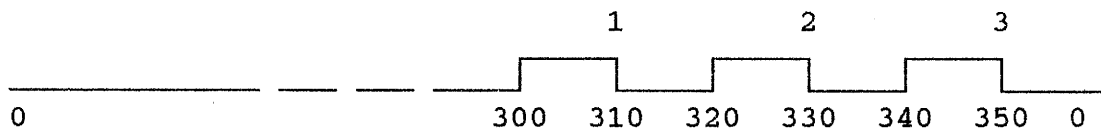
PRESS KEY	DISPLAY	COMMENT
[Program]	[D. 12345678]	Die code of selected program (assume program 2)
[Next]	[D. 12345555]	Die code of program 3
[Next]	[D. 12346666]	Die code of program 4
[Next]	[D. 12347777]	Die code of program 5
[Next]	[D. 12300000]	Die code of program 25
[Next]	[D. 00000000]	Die code of program 26
[Program]	[Program 26]	Program 26 is the first available program with blank Die code

k. Program Channel 11 as a multi-dwell output:

Connect terminal 8 to terminal 10 on TB7 using a short wire. Select program 1 and enter Program Mode. Select Channel 11. If the channel was not programmed previously the display will be [11. ____+____]. Program FROM/TO setpoints for example: [11. 000+010]. The output of channel 11 will function as follows:



[11. 000 + 010] or :



for [11. 300 + 310]

In general the interval from the FROM setpoint to SF is filled with dwells in sequence FROM-TO (ON) and FROM-TO (OFF), FROM-TO (ON) and FROM-TO (OFF) and so on. The FROM setpoint cannot be programmed to be greater than or equal to the TO setpoint.