ICM PROGRAMMABLE CONTROLLER

PART NO PIC-PI-02

PUSH BUTTON I/O PANEL

DESCRIPTION

The PIC-PI-02 is a minature operators panel. It is a complete auxiliary support product that interfaces directly with the Bear Bones, see data sheet 7809-26,and the Baby Bear Bones, see data sheet 7809-43. You need only select which I/O group you wish this panel to be and plug it into any Bear Bones or a Baby Bear Bones or Bear Bones expander, see data sheet 7809-26, furnished with connectors 3 and 6.

SPECIFICATIONS

Inputs	8 tactile momentary pushbuttons
Outputs	8 LED's
Power	MADC per input when closed
	MADC per output when on
Temperature Range	0 - 60°C
Dimensions	5" x 7" and 1¼" See page
Termination	Direct to PLC expansion ports

APPLICATION

This panel furnishes you with 8 inputs and 8 outputs to replace those expensive operators you used to purchase individually. Now all you need to do is drill six holes and cut out one mounting hole to install 16 operators. After mounting just plug it in directly to the PLC buss. No more expensive discrete wiring to install. No more individual wire labels to purchase and install. You do not need an expander to connect this panel to your PLC.

OPERATION

This panel functions just like an expander with 8 pushbuttons and 8 pilotlights connected to it. You gain the cost advantage of not having to buy the expander. The pushbuttons communicate directly to your PLC. The outputs are driven directly from your PLC.

OPTIONS

The I/O panel address selector is factory set for addresses 0/00 thru 0/07. You can change the addressing to any within the PLC group. Our addresses range from 0/00 thru 7/15. To change the page and I/O bit refer to the Truth Tables. To change jumpers remove the entire address selector pad from the socket. Set the page and I/O to your needs. Now insert the pad,being careful to observe the location of the keying notch. Do not select addresses 1/00 thru 1/15. These are reserved for the Bear Bones.

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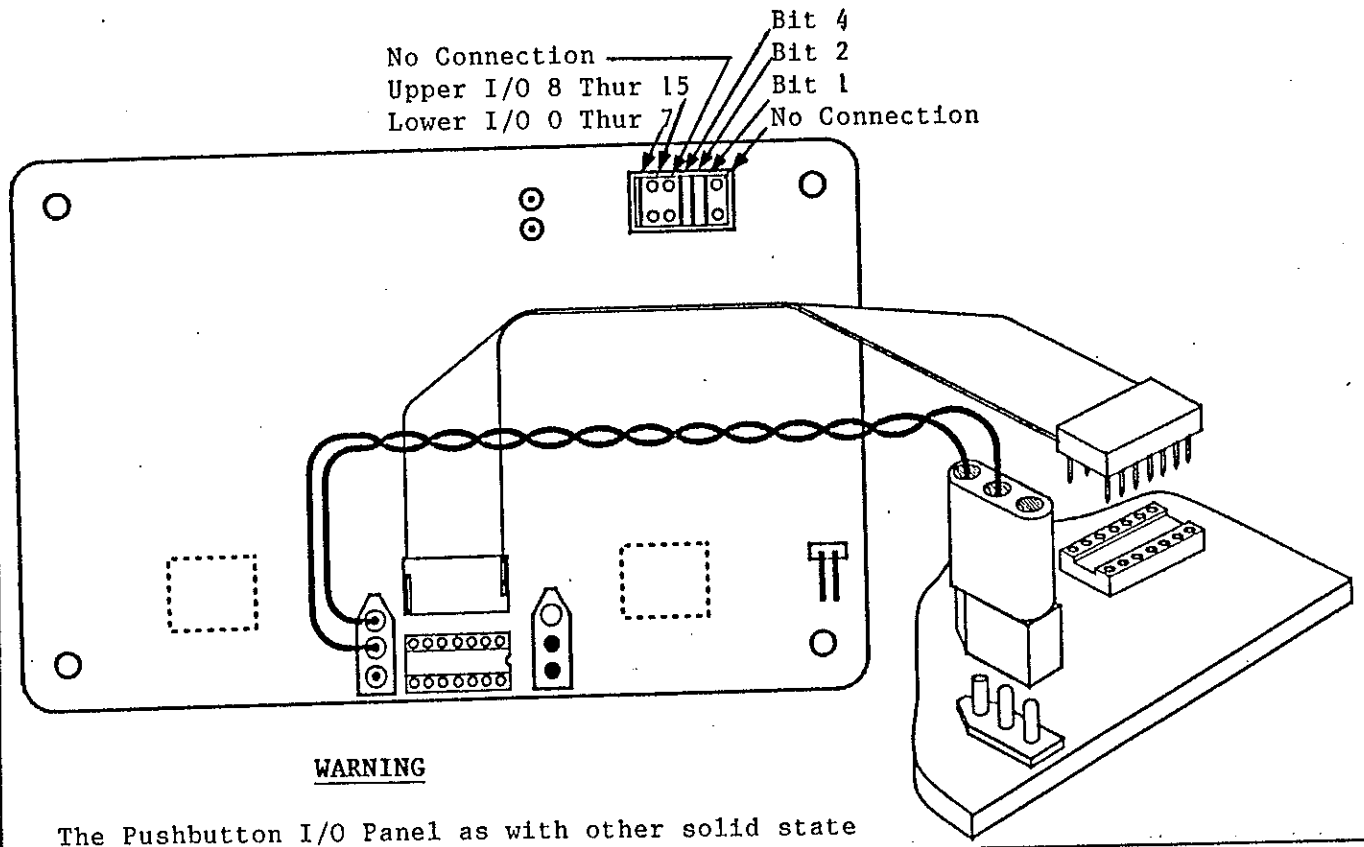
DESCRIPTION: PUSHBUTTON I/O PANEL	
CURRENT REVISION 02 DATE 8/8/89	REVISION THIS PAGE 00 DATE 07/01/88
SHEET 1 OF 8	NUMBER 7809- 50

PUSHBUTTON I/O PANEL

Page	Page Bit		
	1	2	4
0	X	X	X
1	Do Not Select		
2	X	0	X
3	0	0	X
4	X	X	0
5	0	X	0
6	X	0	0
7	0	0	0

Jumper	I/O Bit	
	Upper	Lower
Lower	0	X
Upper	X	0

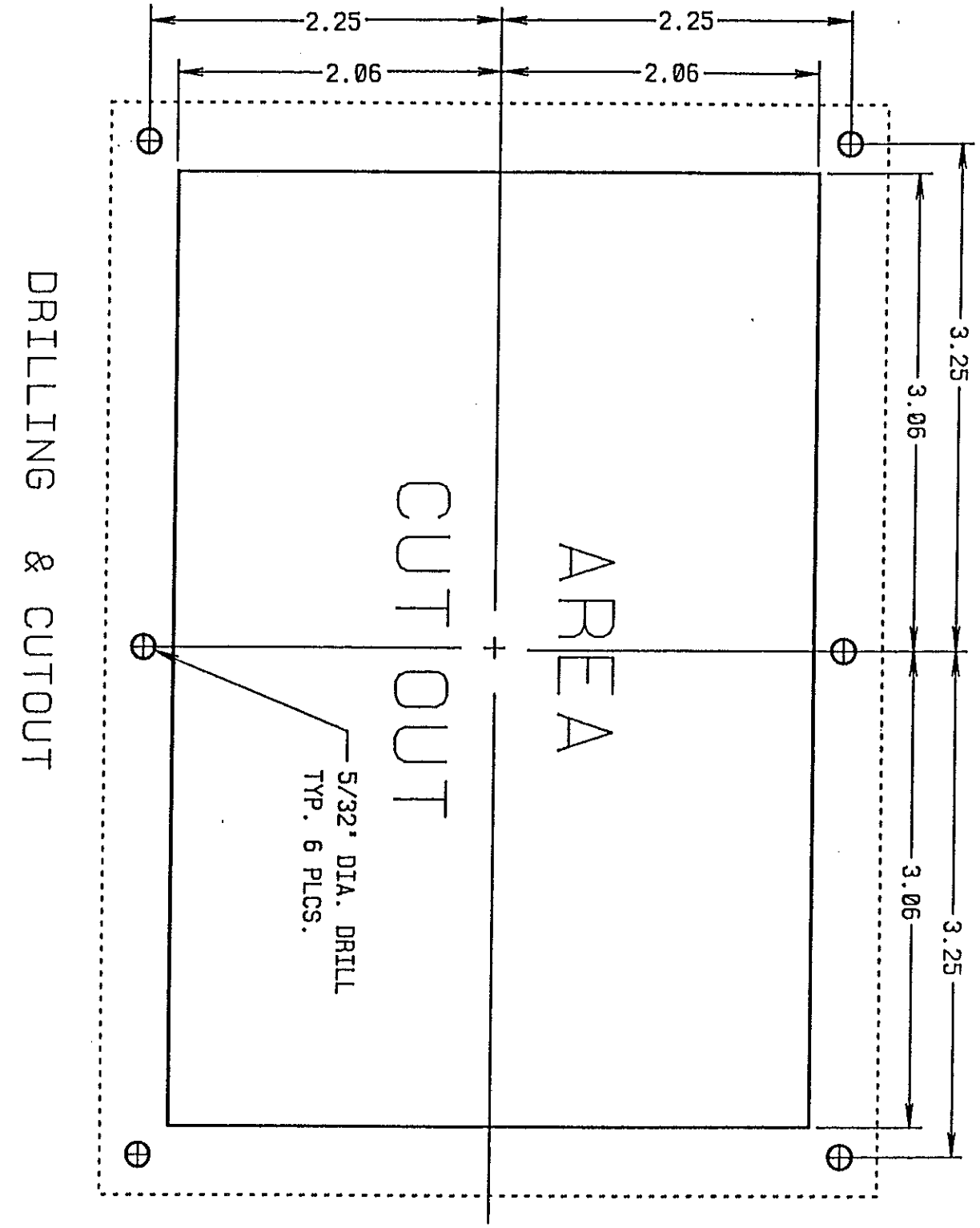
The address selector allows you to determine the page and I/O bit of your I/O panel. The I/O panel is shipped with jumpers installed at page bits 1, 2, 4 and at lower I/O. The I/O panel is therefore selected to be page 0 and I/O 0-7. To change the page and I/O, please refer to Truth Tables. To change jumpers remove the entire pad from the socket. Watch the location of the keying notch when re-inserting.



WARNING

The Pushbutton I/O Panel as with other solid state controls, must not be used in applications which would be hazardous to personnel in the event of failure of the controller. Precautions must be taken to provide mechanical and/or electrical safeguards external to the controller.

PUSHBUTTON I/O PANEL



PUSHBUTTON I/O PANEL

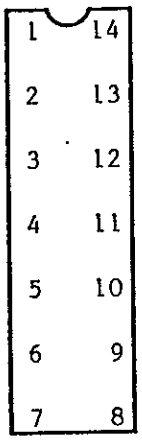
CABLE 3 and CONNECTOR 3

Interfaces logic power to the I/O expanders and the Bear Bones.

Pin	
1	Card Ground
2	+5VDC Logic Power
3	Card Ground

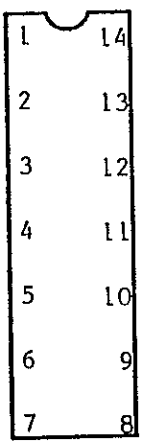
CABLE 6 and CONNECTOR 6

Interfaces this expander to the Bear Bones and/or other expanders.



Pin	
1	Connecting to +5VDC resets outputs
2	Program clock synchronizes the I/O expander and the Bear Bones
3	IO/CR bit 3 status
4	+5VDC = write to outputs; ØVDC = read from inputs
5	Data channel for outputs
6	Data channel for inputs
7	IO/CR bit 2 status
8	IO/CR bit 1 status
9	IO/CR bit Ø status
10	Page bit 3 status; +5VDC for pages 8-F; ØVDC for pages Ø-7.
11	Page bit 2 status; +5VDC for pages 4-7 and C-F; VDC for pages Ø-3 and 8-b.
12	Page bit 1 status; +5VDC for pages 2,3,6,7,A,b,E,F; ØVDC for pages 0,1,2,4,5,8,9,C,d.
13	Page bit Ø status; +5VDC for pages 1,3,5,7,9,b,d,F; ØVDC for pages 0,2,4,6,8,A,C,E.
14	Card ground

J-1 Identifies the page number and upper/lower position of the expander.

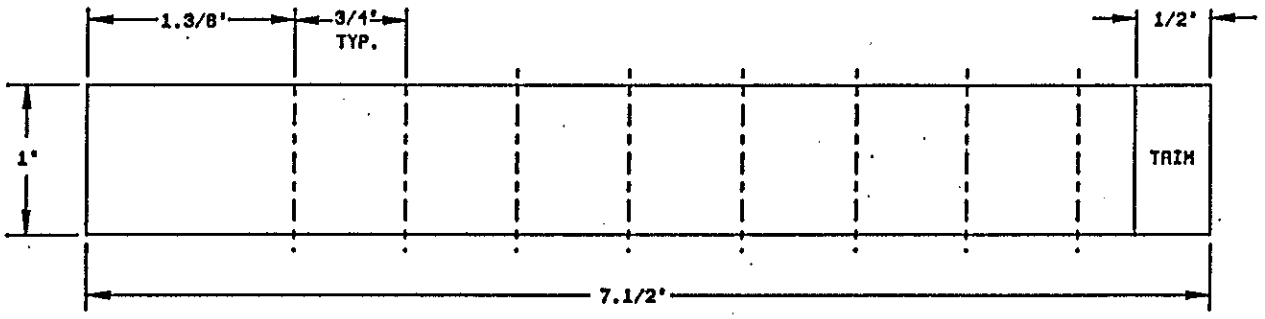


Pin	
1	No Connection
2	Page bit 1
3	Page bit 2
4	Page bit 4
5	Card Ground
6	Common
7	
8	Lower bit
9	Upper bit
10	Card Ground
11	Card Ground
12	Card Ground
13	Card Ground
14	No Connection

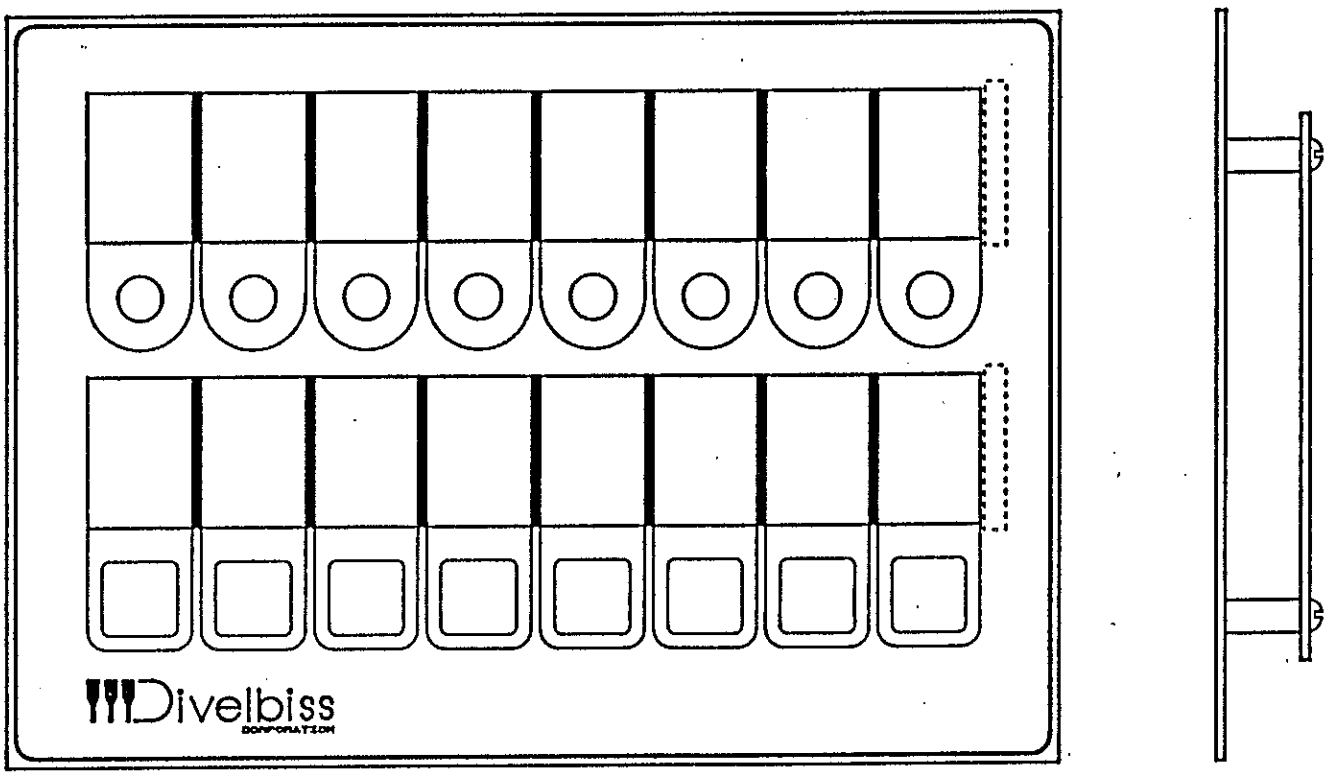
PUSHBUTTON I/O PANEL

LEGENDS

Two inserts are furnished for your use as legends. You can type or print the labels you want for your inputs and outputs. Use the listed center lines to space your labels.



FACEPLATE



PUSHBUTTON I/O PANEL

PROGRAMMING

The following programs are examples of how the I/O panel can serve you. All the programs were done with the ICM-DOC-01 Advanced Documentation Program.

```
     {                                                                  }
     {  The first line shows that a PRESTO Panel can be programmed      }
     { just like any expander. Just remember that the contact is        }
     { momentary.                                                       }
     {                                                                  }
     {  The next four lines show how to program the PRESTO Panel        }
     { to simulate a maintained or remembered state. CR-010 is          }
     {.latched with one input and unlatched with another.               }
     {                                                                  }
     |L.S.                                                  L.S.       |
     | #3                                                   #3         |
     |                                                     MADE       |
Rung | 0/07                                                 0/07       | Contacts
  1 +--] [-----------------------------------------------------( )---+ 1
     |                                                                |
     |                                                                |
     |P.B.    P.B.                                          P.B.       |
     |NO. 1   NO. 1                                         NO. 1      |
     |         ON                                            ON        |
     | 0/06   CR-010                                        CR-010     | Contacts
 .1 +--] [-----]/[-----------------------------------------(L)---+ -1,1,-1,
     |              1                                                 | 1
     |                                                                |
     |P.B.    P.B.                                          P.B.       |
     |NO. 8   NO. 1                                         NO. 1      |
     |         ON                                            ON        |
     | 0/05   CR-010                                        CR-010     | Contacts
 .2 +--] [-----] [-----------------------------------------(U)---+ -1,1,-1,
     |              1                                                 | 1
     |                                                                |
     |P.B.                                                  P.B.       |
     |NO. 1                                                 NO. 1      |
     | ON                                                   OFF        |
     |CR-010                                                0/05       | Contacts
 .3 +--]/[-----------------------------------------------------( )---+ 1
     |    1                                                           |
     |                                                                |
     |P.B.                                                  P.B.       |
     |NO. 1                                                 NO. 1      |
     | ON                                                    ON        |
     |CR-010                                                0/06       | Contacts
 .4 +--] [-----------------------------------------------------( )---+ 1
     |    1                                                           |
     |                                                                |
```

PUSHBUTTON I/O PANEL

PROGRAMMING (CON'T)

```
    { This program illustrates how the PRESTO Panel could be used  }
    { to replace a HAND / OFF / AUTO selector switch.              }
    {                                                              }
    { Once HAND or AUTO is selected you must select OFF before you }
    { can make a mode change.                                      }
    {                                                              }
    |AUTO    HAND                                          AUTO    |
    |MODE    MODE                                          MODE    |
    |SEL.    RELAY                                         RELAY   |
Rung| 0/00   CR-003                                        CR-002  | Contacts
  2 +--] [-----]/[-------------------------------------------(L)--+ -2,2
    |            2                                                 |
    |                                                              |
    |                                                       AUTO   |
    | OFF                                                   MODE   |
    |                                                       RELAY  |
    | 0/01                                                  CR-002 | Contacts
  .1 +--] [--+-----------------------------------------------(U)--+ -2,2
    |        |                                                     |
    |        |                                                     |
    |        |                                              HAND   |
    |        |                                              MODE   |
    |        |                                              RELAY  |
    |        |                                              CR-003 | Contacts
  .2 |        +-----------------------------------------------(U)--+ -2,2,-3
    |                                                              |
    |                                                              |
    |HAND    AUTO                                          HAND    |
    |MODE    MODE                                          MODE    |
    |SEL.    RELAY                                         RELAY   |
    | 0/02   CR-002                                        CR-003  | Contacts
  .3 +---] [-----]/[-------------------------------------------(L)--+ -2,2,-3
    |            2                                                 |
    |                                                              |
    |AUTO                                                   IN     |
    |MODE                                                   AUTO   |
    |RELAY                                                  MODE   |
    |CR-002                                                 0/00   | Contacts
  .4 +---] [-----------------------------------------------------( )--+ 2
    |    2                                                         |
    |                                                              |
    |HAND                                                   IN     |
    |MODE                                                   HAND   |
    |RELAY                                                  MODE   |
    |CR-003                                                 0/01   | Contacts
  .5 +---] [-----------------------------------------------------( )--+ 2
    |    2                                                         |
    |                                                              |
```

PUSHBUTTON I/O PANEL

PROGRAMMING (CON'T)

```
     (  This program illustrates how to program a single momentary  )
     ( pushbuth to replace an alternate action PUSH-ON/PUSH-OFF     )
     ( button.                                                      )
     (  Each time input 0/03 is pressed or released some logical    )
     ( action is forced. One and only one sequence is allowed.      )
     (  The sequence starts by pressing input 0/03 latching CR-004  )
     ( in line .3. This is the Push On sequence. Releasing 0/03     )
     ( with CR-004 latched picks up CR-005 in line .2. Now look at  )
     ( line .0 and .1. When 0/03 is pressed again CR-006 latches &  )
     ( CR-004 unlatches. CR-005 turns off and CR-004 will not pick  )
     ( up again due to CR-006 being latched. You must release 0/03  )
     ( again.                                                       )
     (                                                              )
     |PSH ON   SYSTEM   ENABLE                              PSH     |
     |  /       ON     PSH OFF                             OFF     |
     |PSH OFF RELAY    RELAY                               RELAY   |
Rung| 0/03    CR-004   CR-005                              CR-006  | Contacts
  3 +--] [-----] [-----] [--+-------------------------------(L)--+ | -3,3
     |             3        |                                      |
     |                      |                                      |
     |                      |                              SYSTEM  |
     |                      |                               ON     |
     |                      |                              RELAY   |
     |                      |                              CR-004  | Contacts
 .1  |                      +-------------------------------(U)--+ | 3,3,3
     |                                                             |
     |                                                             |
     |PSH ON   SYSTEM                                       ENABLE  |
     |  /       ON                                         PSH OFF |
     |PSH OFF RELAY                                        RELAY   |
     | 0/03    CR-004                                      CR-005  | Contacts
 .2  +--]/[-----] [-------------------------------------------( )--+ | ***
     |    2       3                                                |
     |                                                             |
     |PSH ON   PSH                                          SYSTEM  |
     |  /      OFF                                           ON     |
     |PSH OFF RELAY                                         RELAY   |
     | 0/03    CR-006                                       CR-004  | Contacts
 .3  +--] [-----]/[-------------------------------------------(L)--+ | 3,3,3
     |             3                                               |
     |                                                             |
     |SYSTEM                                                SYSTEM  |
     | ON                                                    IS     |
     |RELAY                                                  ON     |
     |CR-004                                                 0/04   | Contacts
 .4  +--] [-------------------------------------------------( )--+ | ***
     |    3                                                        |
     |                                                             |
     |PSH      PSH ON                                       PSH    |
     |OFF        /                                          OFF    |
     |RELAY    PSH OFF                                      RELAY  |
     |CR-006    0/03                                        CR-006 | Contacts
 .5  +--] [-----]/[-------------------------------------------(U)--+ | -3,3
     |    3                                                        |
     |                                                             |
```