

BEAR BONES I/O EXPANDER

DESCRIPTION

The ICM-IO-XX I/O expander is a complete auxiliary sub-system for the Bear Bones controller, see data sheet 7809-26. You need only select which I/O group you wish this expander to be and then plug it into the Bear Bones controller or another expander.

TABLE 1

	IN PUTS	OUT PUTS	GROUP (Table 2)		IN PUTS	OUT PUTS	GROUP (Table 2)
ICM-IO-21	8	8		ICM-IO-39	8	8	
ICM-IO-22	8	0	1	ICM-IO-40	8	0	5
ICM-IO-23	0	8		ICM-IO-45	8	8	
ICM-IO-24	8	8		ICM-IO-46	8	0	4
ICM-IO-25	8	0	2	ICM-IO-47	0	8	
ICM-IO-26	0	8		ICM-IO-41	8	8	1 & 6
ICM-IO-27	8	8		ICM-IO-42	0	8	6
ICM-IO-28	8	0	3				
ICM-IO-29	0	8					

SPECIFICATIONS

INPUTS
OUTPUTS
POWER

See Table 2
See Table 2
5VDC at 25°C
1MADC all I/O OFF
100 MADC all I/O ON

TEMPERATURE RANGE
DIMENSIONS
FIELD TERMINATIONS

0 to 60°C
5.4"H x 9"W x 1.5"D
14 AWG maximum wire size, with or without lugs

APPLICATION

This I/O expander needs no additional components. You need only to preselect its page identification and plug in into your Bear Bones controller or another expander. This expander contains all the hardware for real world inputs and real world outputs. It receives its logic power from the Bear Bones. It receives instructions from and transmits data to the Bear Bones via cables 3 and 6, see Fig. 1.


OPERATION

This expander operates on the instructions from the Bear Bones controller and must be connected to it either directly or through another expander.

PRECAUTIONS

See Data Sheet 7809-26 for recommendations about output snubbers.

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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

X = JUMPER
0 = NO JUMPER

UPPER I/O-8 → 15
LOWER I/O-0 → 7

N | BIT | N
C | 124 | C

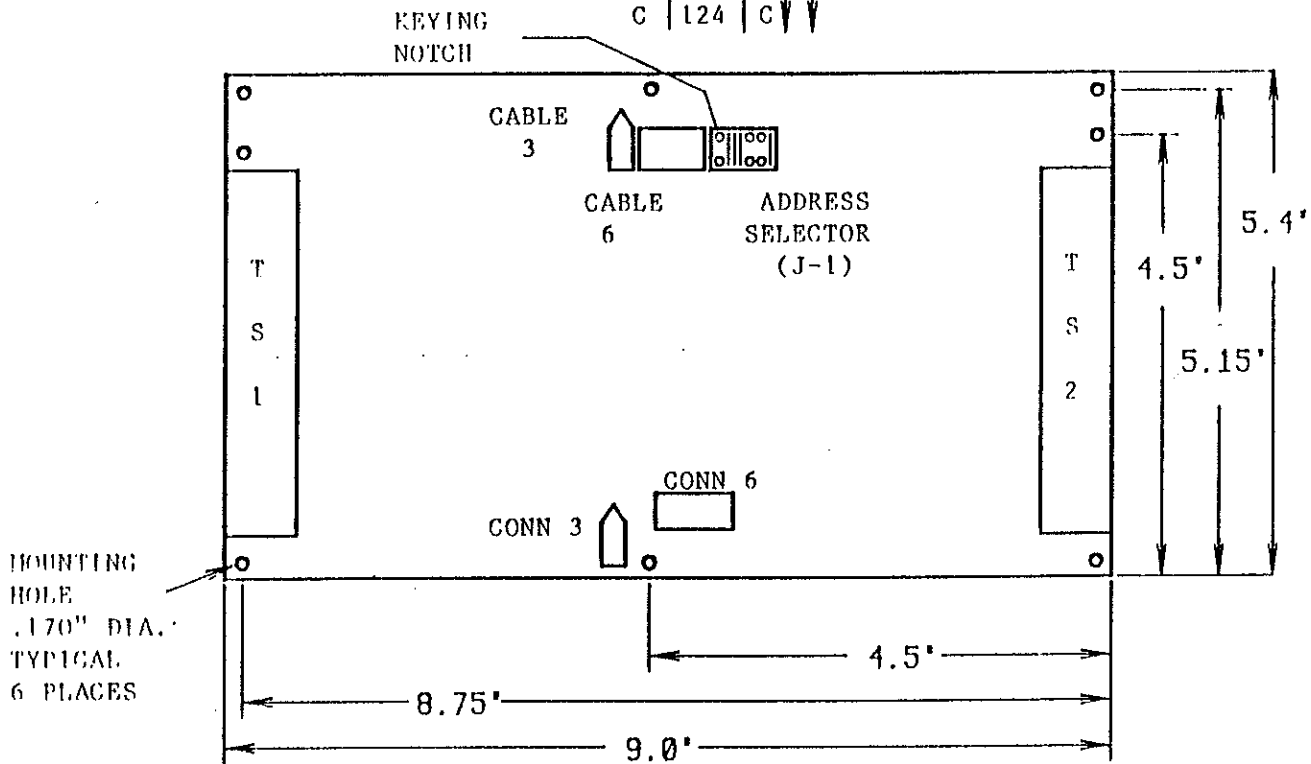


FIGURE 1

NOTE: The address selector allows you to determine the page and I/O bit of your expander. The expander is shipped with jumpers installed at page bits 1, 2, 4 and at lower I/O. The expander 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.

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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	14	1 Connecting to +5VDC resets outputs
2	13	2 Program clock synchronizes the I/O expander and the Bear Bones.
3	12	3 IO/CR bit 3 status
4	11	4 +5VDC = write to outputs; \emptyset VDC = read from inputs
5	10	5 Data channel for outputs
6	9	6 Data channel for inputs
7	8	7 IO/CR bit 2 status
		8 IO/CR bit 1 status
		9 IO/CR bit \emptyset status
		10 Page bit 3 status; +5VDC for pages 8-F; \emptyset VDC for pages \emptyset -7.
		11 Page bit 2 status; +5VDC for pages 4-7 and G-F; VDC for pages \emptyset -3 and 8-b.
		12 Page bit 1 status; +5VDC for pages 2,3,6,7,A,b,F,F; \emptyset VDC for pages 0,1,2,4,5,8,9,C,d.
		13 Page bit \emptyset status; +5VDC for pages 1,3,5,7,9,b,d,F; \emptyset VDC 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	14	1 No Connection
2	13	2 Page bit 1
3	12	3 Page bit 2
4	11	4 Page bit 4
5	10	5 Card Ground
6	9	6 Common
7	8	7 Lower bit
		8 Upper bit
		9 Card Ground
		10 Card Ground
		11 Card Ground
		12 Card Ground
		13 Card Ground
		14 No Connection

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INPUTS

GROUP	SIGNAL LEVEL	POWER	FUSE	TURN ON/OFF	ISOLATION	LED	OPTO
1	90-130VAC	1.2W	1 AMP	25MS MAX	1500V	Y	Y
2	7-32VDC	1.3W	1 AMP	10/25 MS MAX	1500V	Y	Y
3	10-40VAC	1.2W	1 AMP	10/25 MS MAX	1500V	Y	Y
4	90-260VAC	2.4W	1 AMP	25MS MAX	1500V	Y	Y
5	7-32VDC	1.3W	1 AMP	<250US	1500V	Y	Y

NOTE: FOR GROUPS 1,3,4 CONNECT ACC TO COMMON. FOR GROUP 2 CONNECT DC- TO COMMON.

OUTPUTS

GROUP	SIGNAL LEVEL	POWER	FUSE	TURN ON/OFF	OVER VOLT.	Ø X	ISOLATION	LED	OPTO
1 & 3	12-130VAC; .1-2A	240W	2AMP	1/2 CYCLE	400 PEAK	Y	7500V	Y	Y
2 & 5	7-32VDC; 2A	64W	2AMP	5 MS MAX	80VDC	N/A	1500V	Y	Y
4	35-260VAC; .1-1A	240W	1AMP	1/2 CYCLE	600 PEAK	Y	7500V	Y	Y
6	12-130VAC; .01 TO .75A	120W	.75AMP	1/2 CYCLE	400 PEAK	Y	7500V	Y	Y

NOTE: FOR GROUPS 1, 3, 4, 6 CONNECT AC TO COMMON TO AVOID SWITCHING THE NEUTRAL CONDUCTOR. FOR GROUP 2 CONNECT DC- TO COMMON.

INPUT/OUTPUT SPECIFICATIONS

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