ICM PROGRAMMABLE CONTROLLER

PART NO PIC-IO-54

BABY BEAR BONES
STACKABLE EXPANDER

DESCRIPTION

The Baby Bear Bones Stackable Expander allows you to expand your Baby Bear Bones by adding 8 inputs and 8 outputs. The inputs are self supplying, no external source is required. The outputs are socketed for relays or analog timer modules. You may also bypass the relay socket to drive your load with the on board solid state, open collector driver. You may also add Bear Bones analog timers or setpoint comparators to your system.

FEATURES

Self-supplied inputs (can be wired sourcing or sinking, see sheet 6).
Mounting holes are the same as the Baby Bear Bones.
Any Baby Bear Bones can be stacked on top of this expander.
Accepts the Bear Bones Analog Timers and Setpoint Comparators.
All the input and output LED's are exposed and easy to see.

APPLICATION

This high powered expander gives you the extra I/O for your system. In addition to discrete I/O you can add Bear Bones Analog Timers or Bear Bones Setpoint Comparators to your Baby Bear Bones application. The expander input and output addresses are 1/08 thru 1/15.

PROGRAMMING

All programming instructions originate in the Baby Bear Bones.

STANDARD OPTIONS

Timer Modules - see Data Sheet 7809-45. Occupies one input and one output.
Bear Bones Times - see Data Sheets 7809-32, 7809-40, 7809-41.
Bear Bones Setpoint Comparators - see Data Sheet 7809-35.
Bear Bones Cub Expander - see Data Sheet 7809-27.

→ Uses inputs and outputs 1/11 thur 1/15.

ON BOARD OPTIONS

JW-1 The expander when connected to a Baby Bear Bones will furnish 12VDC to your inputs. You can change this to 5VDC or deselect both and furnish your own supply from 5 to 24VDC.

JW-2 Out linked to center pad. Furnished to act as an interface with original BB-12 and 13 products, see 7809-43 Rev. 02.

Relay Sockets can be bypassed with two jumpers per socket. See diagram page 3.

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BABY BEAR BONES
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SPECIFICATIONS

Inputs: Quantity 8 Isolation: 1500V

Source Voltage		Resistance		Current		Response(max)	
On Board	5VDC	1.5K	3.5K	.8mA	.3mA	2mS	15mS
Selectable	12VDC	10K	15K	.8mA	.3mA	2mS	15mS
External up to	24VDC	25K	35K	.8mA	.3mA	2mS	2mS

Outputs: Quantity up to 8

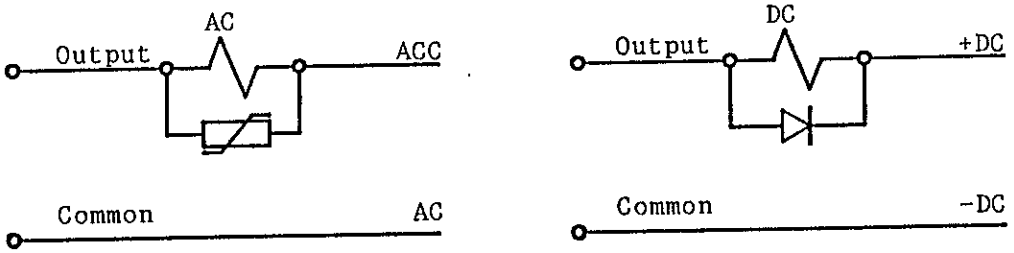
Relay contacts - Normally Open - Isolated from each other.
ICM-RE-01 rated at 2A resistive 120VAC or 28VDC
ICM-RE-02 rated at 8A inductive 120VAC or 28VDC
Operating Temperature Range: 0° to 60° C

Dimensions: 5 3/8" W, 8 3/4" H, 3/4" H

Weight: 0.4 LBS

PRECAUTIONS:

It is highly recommended that all output drivers be protected by connecting varistors to AC loads and snubbers to DC loads. Pictorial examples are shown below. Be sure to size these protective devices to service the loads you connect.

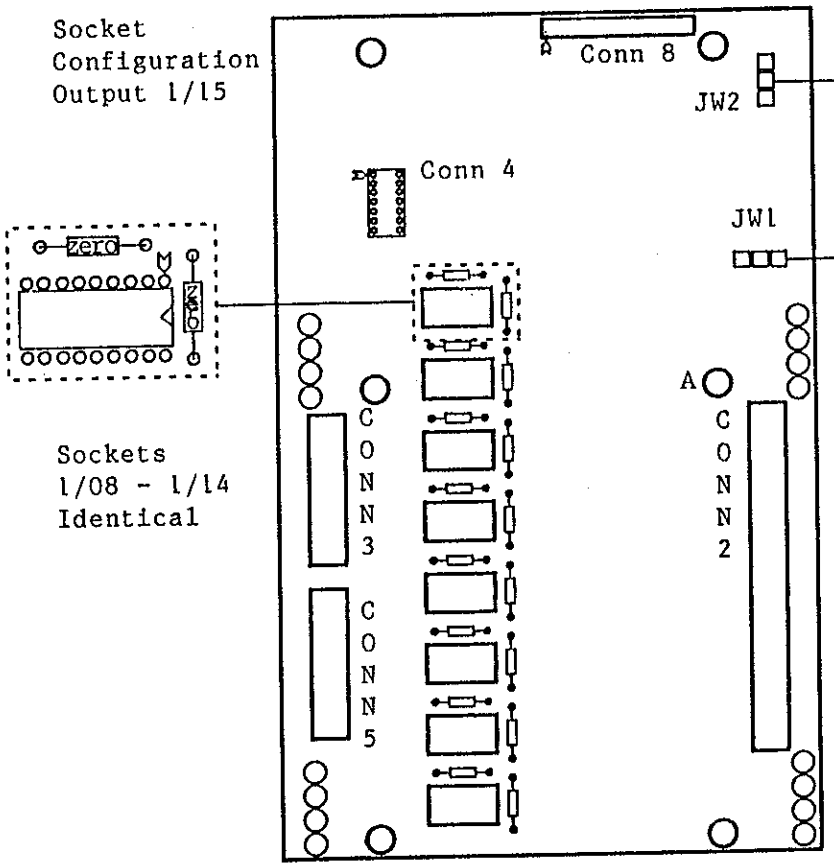


NOTE: Addition of snubbers may increase drop out time of DC devices 200 to 500%. AC loads are not usually effected.
Specifications subject to change without notice.

WARNING

The Baby Bear Bones Stackable Expander, 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 expander. Precautions must be to provide mechanical and/or electrical safeguards external to the expander.

BABY BEAR BONES
STACKABLE EXPANDER

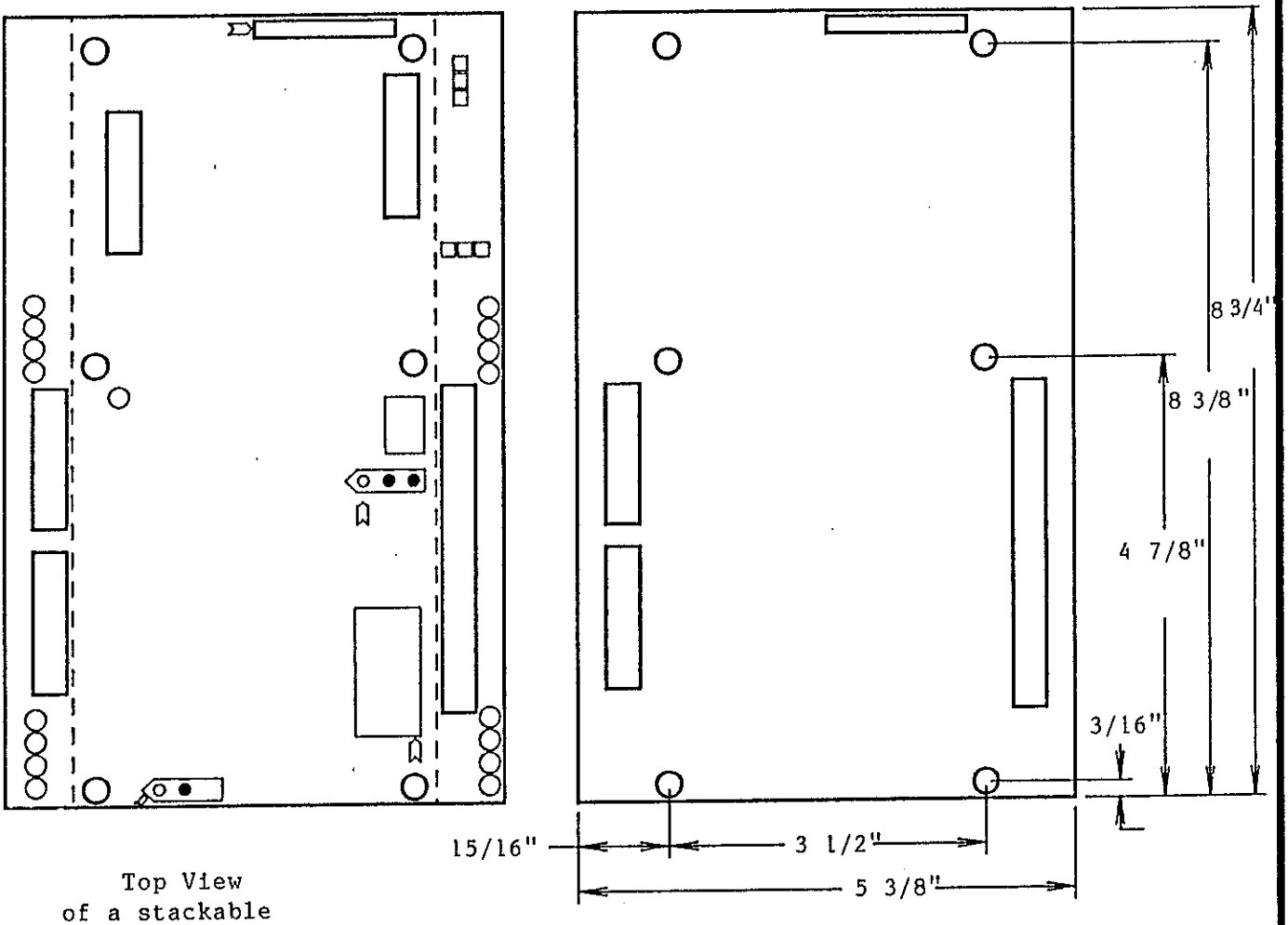


When cutting traces, an "exacto knife" is recommended. Be sure all of the trace is removed. "Bridging" refers to a solder connection across the pads. Use a 27W or less soldering iron with rosin core solder. Deviation may void warranty.

If you decide to furnish your own external source of DC to our inputs you must insure that JW2 has no solder bridges or traces intact. The external DC source must then be wired to Conn 2, see sheet 6.

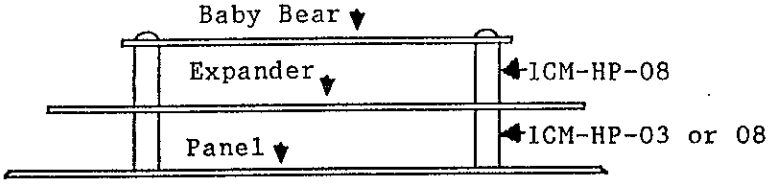
The output socket can be bypassed by soldering in zero ohm resistors as shown. The on board circuitry will furnish 12VDC at 30ma. This configuration is ideal for driving high power solid state relays.

BABY BEAR BONES
STACKABLE EXPANDER



Top View
of a stackable
expander with a
Baby Bear Bones
PIC-BB-22
installed

End View



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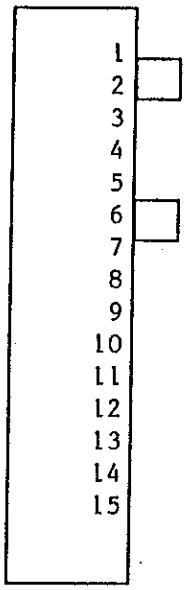
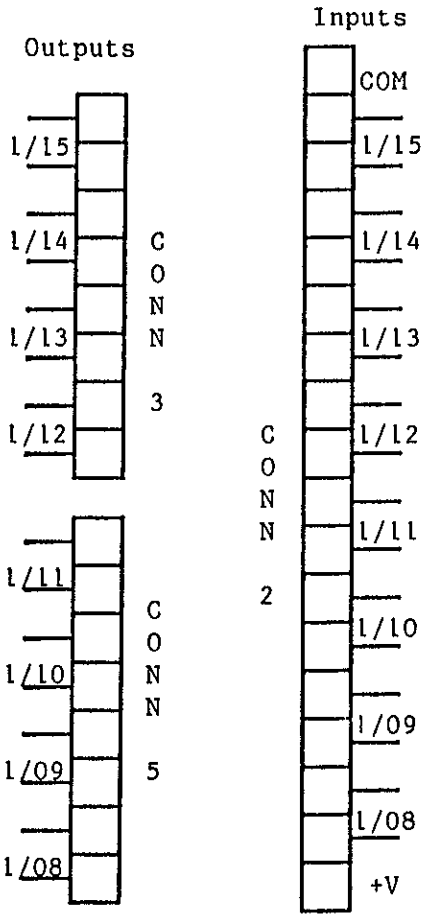
BABY BEAR BONES
STACKABLE EXPANDER

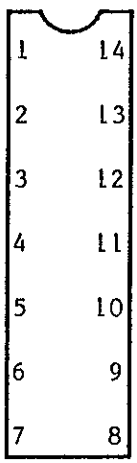
CONNECTION 8 - Pins for BABY BEAR



1	+5VDC out
2	+12VDC out
3	
4	Word bit Ø out
5	Word bit 1 out
6	Card common
7	
8	Word bit 2 out
9	Input data channel
10	Output data channel
11	Write out
12	Word bit 3 out
13	System clock out
14	Reset out
15	Page 1 enable



CONNECTOR 4

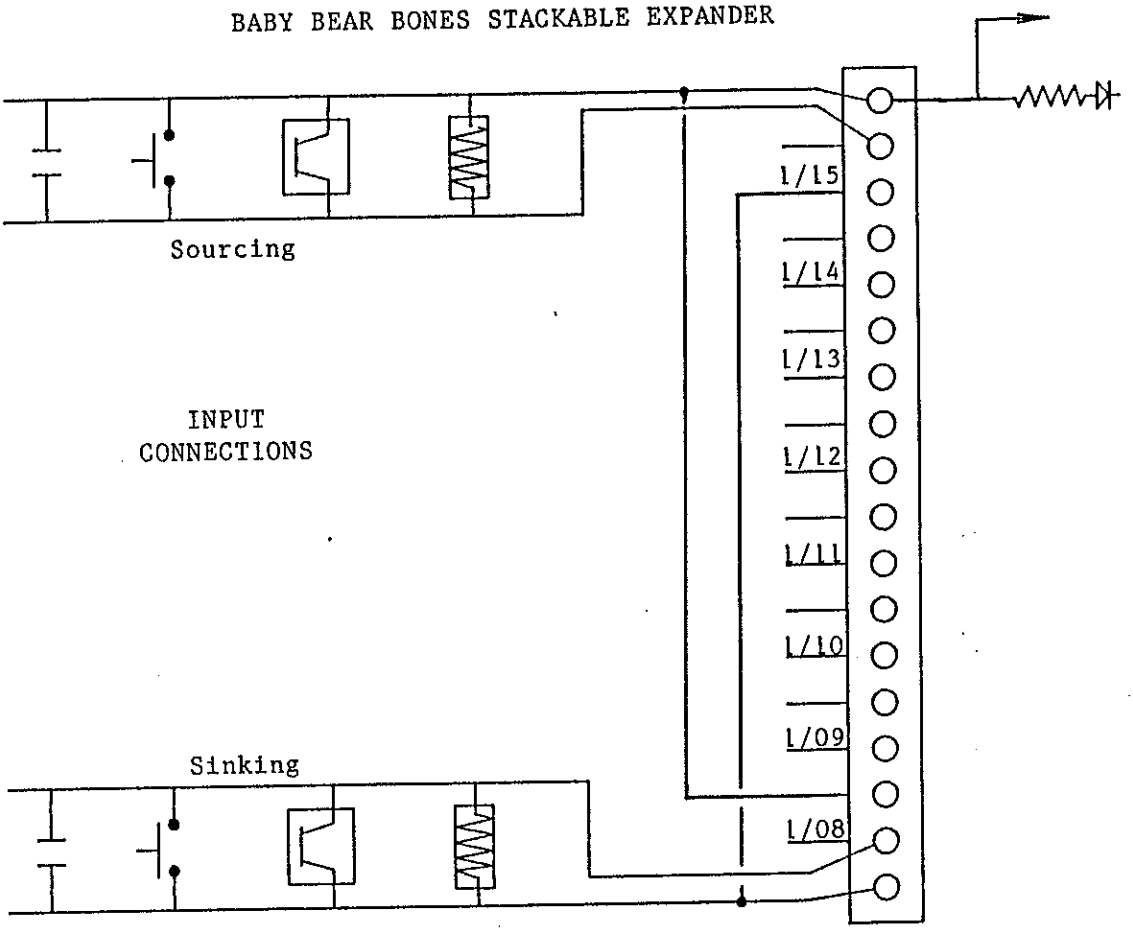


Pin	
1	Card Ground
2	Not connected
3	Input #3
4	Input #4
5	Input #5
6	Input #6
7	Input #7
8	Card Ground
9	Output #3
10	Output #4
11	Output #5
12	Output #6
13	Output #7
14	+5 VDC Logic Supply

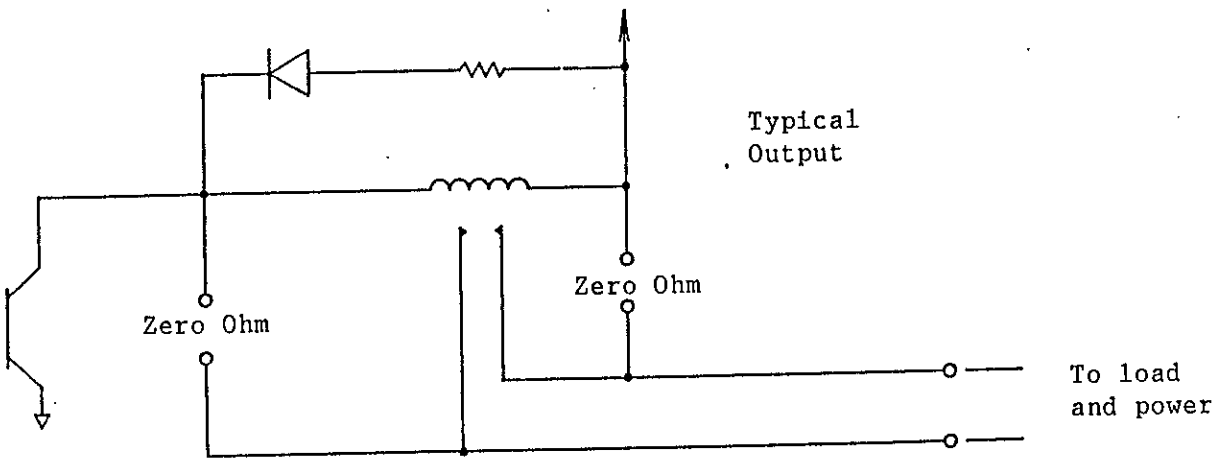
ICM PROGRAMMABLE CONTROLLER

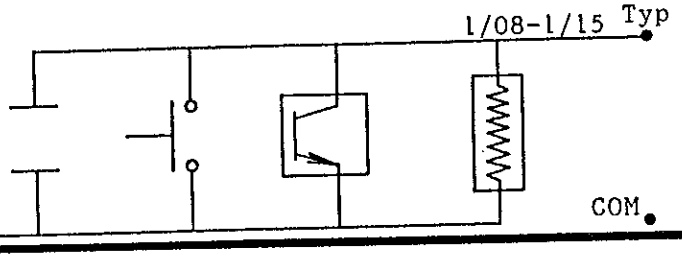
PART NO PIC-10-54

BABY BEAR BONES STACKABLE EXPANDER



INPUT CONNECTIONS





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