IO104-60IN Manual

Manufactured by
TRI-M TECHNOLOGIES INC.
Engineered Solutions for Embedded Applications

Technical Manual

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PREFACE

This manual is for integrators of applications of embedded systems. It contains information on hardware requirements and interconnection to other embedded electronics.

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FEATURES

- 60 opto-isolated inputs.
- Inputs on standard 0.1" pitch 40 pin headers.
- I/O access to inputs through I/O memory mapped registers via PC/104 bus.
- All inputs are opto-isolated.
- Input Range 3V to 24 V AC or DC input.
- Multiple IO104-60IN boards can be stacked.
- Temperature Range –40 to 85C.
- PC/104 compliant, 3.75" X 3.55".
- Weight: 2.27 oz / 64 grams.

Digital Input Reading

The 60 inputs are grouped as seven sets of eight inputs, and one set of four inputs. Each group of inputs is accessed through an I/O memory address, which is an offset from the base decode address. Inputs are grouped as follows:

```
Group 1: Inputs DI1 to DI8        I/O address = Base Address
Group 2: Inputs DI9 to DI16       I/O address = Base Address + 1
Group 3: Inputs DI17 to DI24      I/O address = Base Address + 2
Group 4: Inputs DI25 to DI32      I/O address = Base Address + 3
Group 5: Inputs DI33 to DI40      I/O address = Base Address + 4
Group 6: Inputs DI41 to DI48      I/O address = Base Address + 5
Group 7: Inputs DI49 to DI56      I/O address = Base Address + 6
Group 8: Inputs DI57 to DI60      I/O address = Base Address + 7
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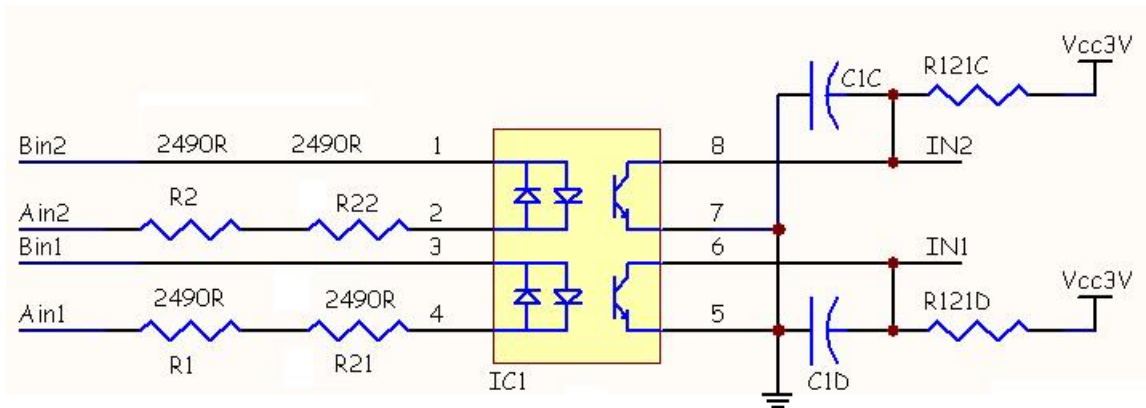| Input	Offset from Base Address	SD7	SD6	SD5	SD4	SD3	SD2	SD1	SD0
Group 1	0	Input8	Input7	Input6	Input5	Input4	Input35	Input2	Input1
Group 2	1	Input16	Input15	Input14	Input13	Input12	Input11	Input10	Input9
Group 3	2	Input24	Input23	Input22	Input21	Input20	Input19	Input18	Input17
Group 4	3	Input32	Input31	Input30	Input29	Input28	Input27	Input26	Input25
Group 5	4	Input40	Input39	Input38	Input37	Input36	Input35	Input34	Input33
Group 6	5	Input48	Input47	Input46	Input45	Input44	Input43	Input42	Input41
Group 7	6	Input56	Input55	Input54	Input53	Input52	Input51	Input50	Input49
Group 8	7	Not used				Input60	Input59	Input58	Input57

Base Address Settings

There are four decode base addresses, which are jumper selectable from the address select block JP2 and JP3:

Base Address	JP1 (1 to 2)	JP1(3 to 4)
240H	Not Installed	Not Installed
260H	Not Installed	Installed
280H	Installed	Not Installed
300H	Installed	Installed

Input Series Resistors and Opto-Coupler

Each input has two 2490 ohm resistors in series with the bi-directional input opto-coupler as shown.

IO104-60IN Input Locations