

**5/12 VDC TTL Input, Positive/Negative Logic, 64 Circuits
IC655MDL533**

This module provides 64 circuits for connection to user input devices. 32 LEDs on the module indicate the status of the 32 Inputs associated with one connector. A toggle switch above the top (J1) connector allows the user to choose the group of inputs being monitored (A to D, or E to H). The top 16 LEDs perform a dual function. They normally provide a visual indication of the status of each input circuit with each LED reflecting the ON or OFF state of the corresponding circuit. Second, when commanded through programming, they indicate the starting I/O address for the module.

Field wiring connections from input devices is made to two 37-pin subminiature D-type connectors (labeled J1 (A-D) and J2 (E-H)), mounted on the front of the module. One connector is used for two groups with 16 inputs in each group. The four groups are labeled A and B (group 1), C and D (group 2), E and F (group 3), and group 4 is G and H. The pins in each group are labeled 1 to 8, for example: group 1 is A1 to A8 and B1 to B8. Each group has a common connection, labeled C. The user must supply the source of 5 to 12 VDC power to reflect the state of the inputs to the module. All groups can be powered from a common source or from different sources. The circuits can operate as either positive or negative logic, depending on how the source voltage is connected to the module.

Table 16. Specifications for 5/12 VDC Input, Positive/Negative Logic - 64 Circuits

Input Circuit Type	Positive/Negative Logic (selectable by wiring)
Number of Circuits	64
Internal Circuit Grouping	Four groups, 16 circuits per group
Operating Voltage	4.75 to 13.2 VDC
Maximum Voltage (open circuit)	15 VDC
Input Current	2.5 mA at 5 V, 7.5 mA at 12 V
ON Level	4.0 VDC; between C and Input terminal
OFF Level	2.0 VDC; between C and Input terminal
Maximum OFF Leakage	0.8 mA
Minimum ON Current	1.8 mA
OFF to ON Response	1 to 4 ms
ON to OFF Response	1 to 4 ms
Status Indicator Location	Logic side
Internal Power Consumption (5 VDC)	Total; 136 mA (typical), 180 mA (maximum) 50 mA + 0.1 mA per On point + 2.5 mA per On LED
Weight	39 oz (600 g)

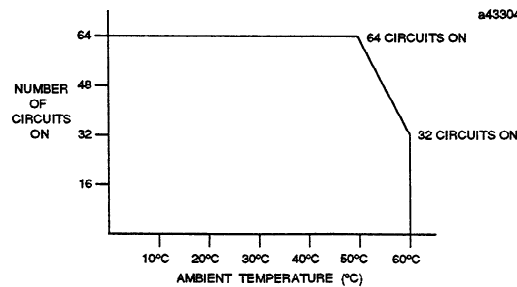


Figure 25. Input Points vs. Temperature for IC655MDL533

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TTL Compatibility

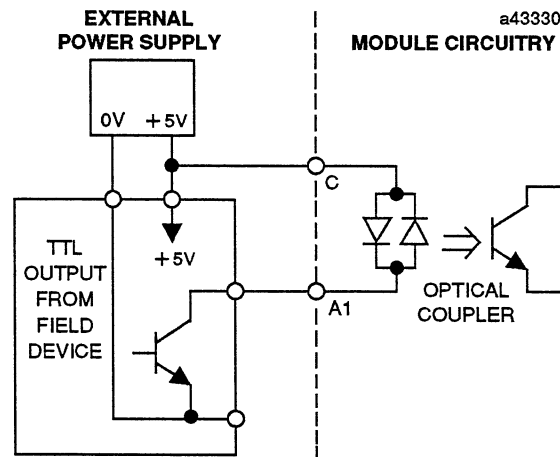
The following information is a guide to the TTL compatibility of this module. Compatibility is dependent on how the power for the TTL outputs is connected to the module. Examples of the two possible conditions are shown below; one with the common connected to +5V, and the other with the common connected to ground.

NOTE

In order for the TTL circuits on this module to work correctly, the user must ensure that the external power supply is the same supply that is driving the TTL outputs.

Example 1: Common connection of module tied to +5V.

An example of this connection is shown below.

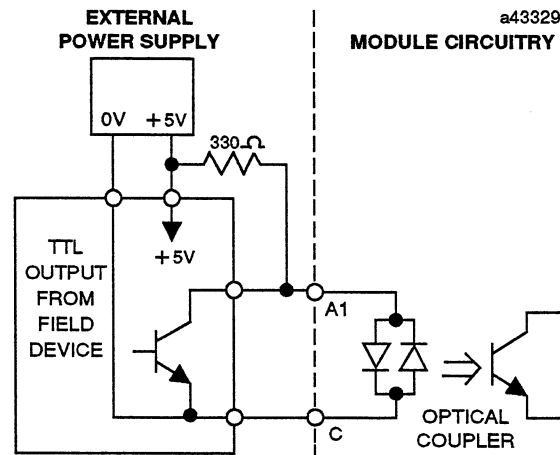


If connected to a +5 VDC supply which is also used to power the external TTL outputs, and the open collector or bipolar TTL outputs are tied to the Common terminal, then this module is compatible with the following logic families:

- Standard TTL outputs
- 74LS TTL series outputs
- 74S TTL series outputs
- CMOS HC series outputs
- 4049 and 4050 CMOS outputs (but not other 4000 series CMOS outputs)

Example 2: Common connection of module tied to ground.

An example of this connection is shown below.



If connected to a +5 VDC supply which is also used to power the external TTL outputs, and the external TTL common is connected to the Common terminal on this module, then this module is compatible with the following logic families:

- Standard TTL outputs (with external 330 ohm pull-up resistor to +5 V)
- 74S series TTL outputs (with external 330 ohm pull-up resistor to +5 V)
- Standard 400 series CMOS outputs (with external 330 ohm pull-up resistor to +5 V)
- HC series CMOS (no pull-up resistor required)

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Wiring Information - IC655MDL533

The following figure provides the information required for connecting field devices to this module.

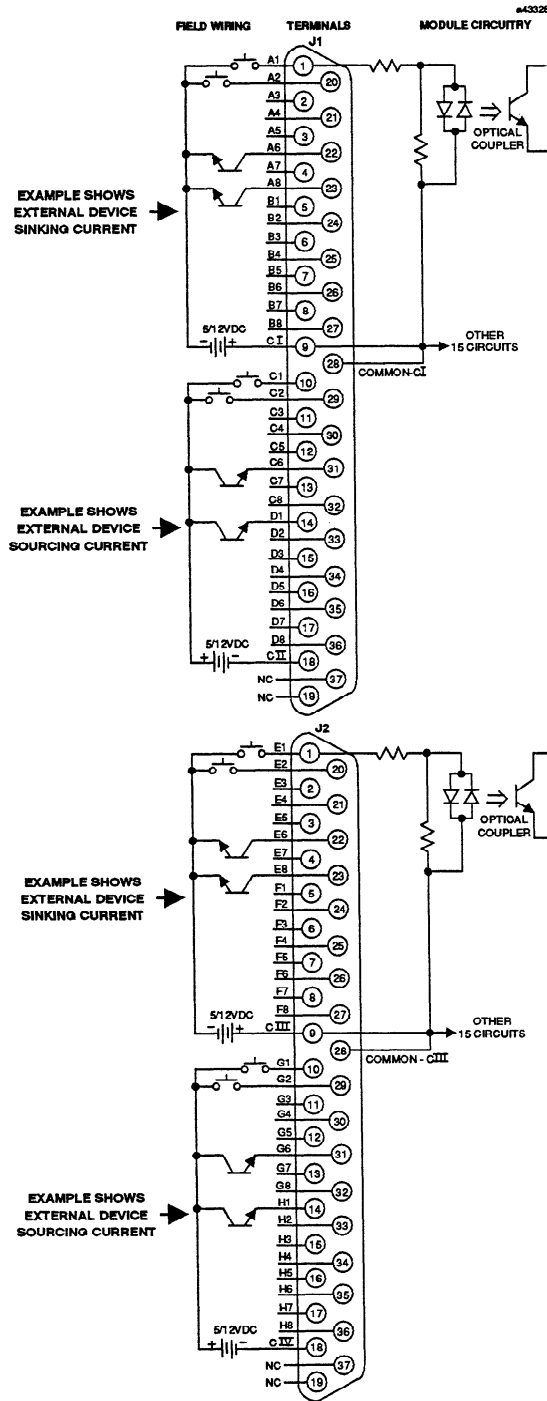


Figure 26. Field Wiring and Typical Circuit for IC655MDL533