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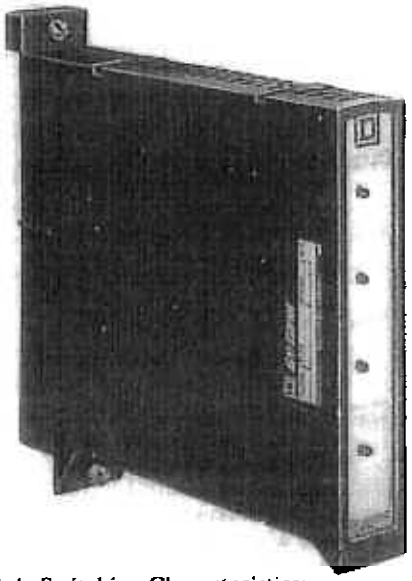
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Instruction Bulletin

Subject: **SY/MAX***

CLASS 8030 TYPE CIM-151
TTL INPUT MODULE

†NOTE: This module requires an external 5 VDC power source. This can be either a user supplied 5 VDC source or a SY MAX Power Supply — see Power Supply Instruction Bulletin.



DESCRIPTION

The Type CIM-151 TTL Input Module provides 4 optically isolated inputs which are capable of receiving signals from TTL and 5 VDC level devices. Through the use of DIP switches located in the rear of the module, the user has the option of selecting 1.6 mA or 10.0 mA current levels. The module also features both capacitive noise filtering and built-in hysteresis to ensure greater input signal integrity.

Four LEDs on the face of the module provide status indication for the individual inputs. LED illumination indicates a logic 1 input voltage.

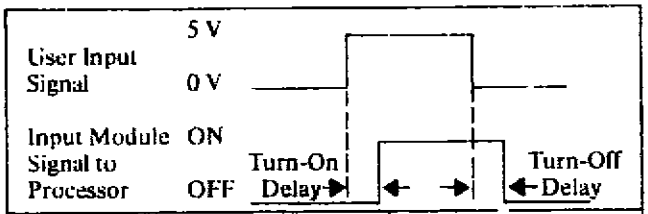
†SPECIFICATIONS

Inputs per Module 4
Type and Rated Isolation Between Input Terminal and Logic ..... Optical: 2500 V RMS
User Information:

PARAMETERS	LOGIC 0	LOGIC 1
Signal	Low	High
Input Voltage	0.0 V min. to 0.8 V max.	2.0 V min. to 8.0 V max.
LED Operation	OFF	ON
Status Seen by Processor	OFF	ON
User Current Sink Req. (per input)	-1.6 mA max. (DIP switch OFF)★ -10.0 mA max. (DIP switch ON)★	— —
User Current Source Req. (per input)	— —	3.0 mA max. (DIP switch OFF)‡ 10.0 mA max. (DIP switch ON)‡
User Supply Voltage Req.	5 VDC (±0.25 V) at 100 mA max. 100 mV (p-p) ripple max.	

★ — At 0.0 V with User Supply Voltage at 5.25 V.
‡ — At 8.0 V with User Supply Voltage at 4.75 V.

Input Module Switching Characteristics:



Typical Turn-On Delay Δ	0.22 mSec
Typical Turn-Off Delay Δ	0.50 mSec

Δ — Turn-On Delay and Turn-Off Delay Values are based on Input Voltage Levels indicated in the Diagram.

Rated Module Current Draw On SY/MAX Power Supply . . 20 mA per Module

Ambient Temperature Rating 0 - 60° C
Humidity Rating . . . . . .0-95% non-condensing

Weight. . . . . .0.5 lb./0.23 kg. (Unpackaged)

Rack Assemblies In Which Module May Be Used CRK-100, CRK-200, CRK-210, CRK-300, DRK-210, DRK-300

Compatibility With Output Modules. COM-261, COM-271, COM-281, HOM-261, HOM-271

TYPICAL WIRING

Figure 1 illustrates the typical wiring for the CIM-151 TTL input module. Each input module is capable of being connected to a separate voltage supply. If only one voltage supply is

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used for more than one module, the B terminals of each terminal block may be connected together and A terminals of each terminal block may be connected together.

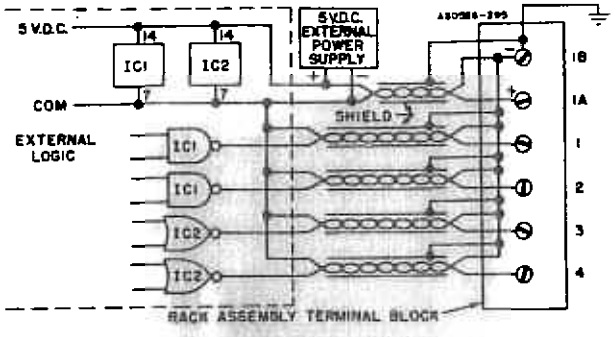


Figure 1 – Typical Wiring

APPLICATION CONSIDERATIONS

- External power supply connections to terminals A and B on the rack assembly will power all four functions.
- The polarity of the wires connected to the rack assembly terminals A (+) and B ( ) must be as indicated or damage to the Module will occur (Figure 1).
- Only shielded twisted pair cable, such as Beldon No. 8760, should be used when connecting the TTL input module to an external device. With the 1.6 mA current level selected, the maximum cable length is 10 feet. With the 10.0 mA current level selected, the maximum cable length is 50 feet.
- The input common terminal on the rack assembly should be connected to the rack chassis ground to minimize noise susceptibility. Each individual cable shield must also be connected to the common terminal B on the rack. The other end of the shield must be left unconnected (Figure 1).
- If an output of a TTL output module is connected to the input of a TTL input module, the cable shields should be connected to the B terminal (common) on the *output* rack assembly. The other end of the shield must be left unconnected.
- When using the TTL input module in conjunction with a SY/MAX Model 300 Processor, refer to the processor "Instruction Bulletin" for minimum input pulse width and signal frequency.
- If using the TTL input module with a Class 8884 SY/MAX-20 Processor, consult factory for minimum input pulse width and signal frequency.

MODULE KEYING

Each socket on the I/O rack assembly may be keyed to accept only one type of module. An optional keying pin kit, Class 8030 Type CBP-104, is available for this purpose. The correct position of the keying pin for the TTL input module is between pins 38 and 40. See Figure 2. The keying pin is simply inserted manually into the slot in the rack connector, as shown in Figure 3, using the keying pin insertion tool provided with the kit.

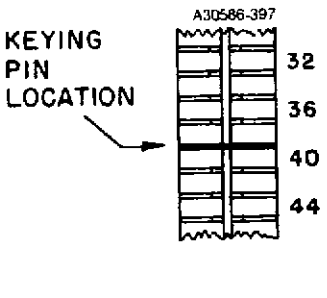


Figure 2
Keying Pin Location

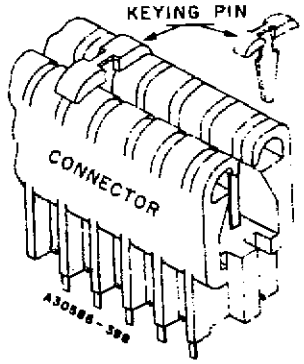


Figure 3
Inserting Keying Pin

CAUTION: When inserting or removing the keying pins, use care to avoid touching the contact fingers within the connector. Improper insertion removal may damage the connector.

INSTALLATION INSTRUCTIONS

Insert the key mentioned above into the appropriate slot then, before inserting the module into the rack, set the DIP switches to select the 1.6 mA or 10.0 mA current level for each individual input. The DIP switches are accessible through the edge connector slot in the rear of the module. Simply set the switch in the "ON" position (towards the PC board) to select 10.0 mA current level or set the switch in the "OFF" position to select 1.6 mA current level (Figure 4). After setting the DIP switches to the desired position, insert the module into the rack slot and tighten the two input module captive screws.

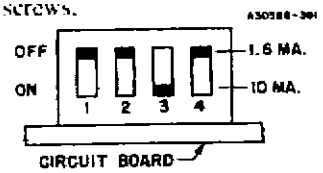


Figure 4 - Module DIP Switches

SIMPLIFIED SCHEMATIC OF MODULE

Figure 5 illustrates one of four circuits within the module. The terminals marked "1A" and "1B" are common to all four inputs within the module.

NOTE: The switch labeled "S1", when closed, selects 10.0 mA current level.

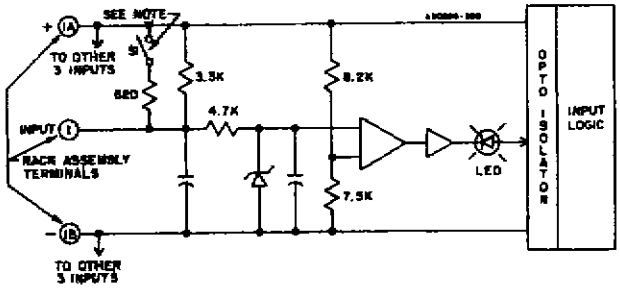


Figure 5 - Simplified Schematic of One Input Module Circuit

M. R. Earles

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