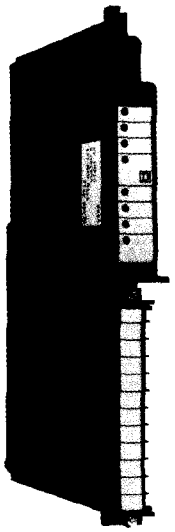
Instruction Bulletin

Subject: **SY/MAX®**

CLASS 8030 TYPE HIM-101
8 FUNCTION 120VAC/DC INPUT MODULE



DESCRIPTION

The Type HIM-101 120VAC/DC Input Module contains eight optically isolated inputs which are capable of handling signals from such field input devices as limit switches, push buttons, and selector switches.

Each of the eight inputs has a red LED on the front of the module which illuminates when receiving an "ON" signal from the field input device (proper voltage applied to the wiring terminal). A marking area is provided next to each LED for input identification by the user.

†SPECIFICATIONS

Inputs per Module	8
Type of Isolation	Optical
Isolation Rating	2500 V RMS
Voltage Operating Range	90-132 VAC (50/60 Hz) or VDC
Input Current Draw	7.0-11.0 mA
Must Turn On Voltage	90 V
Must Turn On Current	7 mA (at 90 V)
Must Turn Off Voltage	40 V
Must Turn Off Current	3.0 mA (at 40 V)
Input Impedance	12 K OHMS Resistive
Turn on Time	8 ms Nominal
Turn off Time	8 ms Nominal
Rated Current Draw on SY/MAX Power Supply	60 mA per module at 75% Duty Cycle 70 mA per module at 100% Duty Cycle
Ambient Temperature Rating	0-60°C
Humidity Rating	0-95% non-condensing
Weight (unpackaged)	1.2 lb./0.54 kg
†Detachable Terminal Block	Class 8030 Type CBP-110
†Ten Terminal Block Labels	Class 8030 Type CBP-109
Used with these Rack Assemblies	HRK-100, HRK-150, HRK-200
†Compatible with Output Modules	COM-221, COM-251, COM-271, COM-281, DOM-221, DOM-225, DOM-251, GOM-221, HOM-221, HOM-251, HOM-271

Detachable Terminal Blocks	CBP-110
Ten Terminal Labels	CBP-109

TYPICAL WIRING

Field input devices are wired to the terminal block on the front of the input module. Figure 1 illustrates the typical wiring for the HIM-101 input module.

Wiring terminals 1 through 4 share a common "1A" terminal. Wiring terminals 5 through 8 share common terminal "2A". Likewise, for wiring terminals 9 through 16 and common terminals "3A" and "4A". The "B" terminals are not used on the input modules.

NOTE: Surge suppression is required only when an inductive load is in parallel with the programmable controller input.

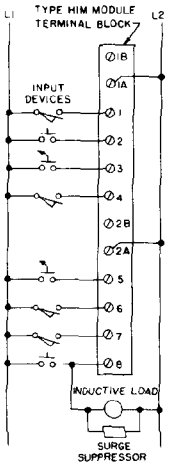


Figure 1 - Typical Wiring

†Supersedes 30598-185-01, 2/84 AJR
Printed in U.S.A.

A hinged plastic flap covers the wiring terminals on the front of the module. Labels are provided for both sides of the flap. See Figure 2. The label with eight marking areas is placed on the outside of the flap to identify I/O devices, wire numbers, etc. Two wiring terminal labels are included with the module. One is for terminals 1 through 8, the other for terminals 9 through 16. If the module is inserted in an ODD number slot, the terminal 1 through 8 label is placed on the inside of the flap. If the module is placed in an EVEN number slot, use the terminals 9 through 16 label. See Figure 3.

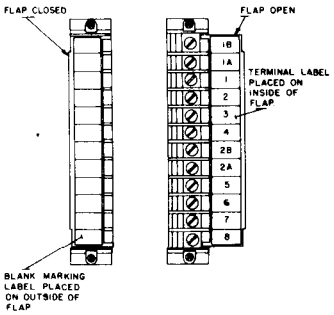


Figure 2
I/O Terminal Labels

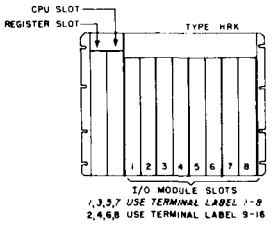


Figure 3
Terminal Label Placement

APPLICATION CONSIDERATIONS

- Each 4 inputs sharing a common "A" terminal are electrically isolated from the other inputs on the module.
- By removing the top and bottom retaining screws the terminal block may be removed from the module, allowing the module to be replaced without disturbing field wiring.
- In those applications where an inductive load such as a motor starter or solenoid is wired in parallel with a Type HIM-101 Input Module, a suppressor must be installed as indicated in Figure 1. A typical suppressor for 120 V AC operation consists of a 0.5 mfd, 400 volt capacitor with a 220 ohm resistor in series.
- Each terminal will accept up to two #14 AWG wires.

†• Note that an "appreciable glow" from the LED may be seen when high leakage current, solid-state, input devices are used with a HIM-101, even though the input module is actually off. The must turn off voltages and currents are as listed in the specifications.

†• If the off state leakage current of the field input device connected to the Type HIM-101 Input Module is greater than 3 mA, consult the factory for recommended signal conditioning.

- When using the Type HIM-101 Input Module with DC voltage inputs, either polarity may be used, e.g. Terminals 1 (+) and Terminal 1A (-) or Terminal 1 (-) and Terminal 1A (+).
- Depending on the size and routing of wiring to the I/O terminals, it may be necessary to remove an adjacent terminal strip before removing an I/O module.

MODULE KEYING

Each socket on the I/O rack assembly may be keyed to accept only one type of I/O 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 Type HIM-101 120 V AC/DC Input Module is between pins 14 and 16. See Figure 5. The keying pin is simply inserted manually into the slot in the rack connector using the keying pin insertion tool provided with the kit. See Figure 6.

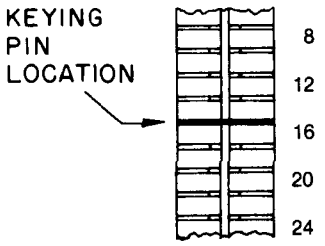


Figure 5
Keying Pin Location

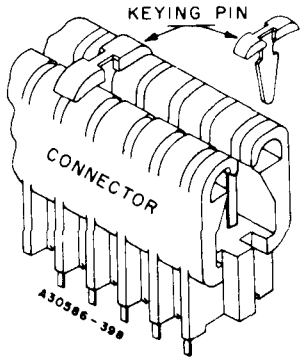


Figure 6
Keying Pin Insertion

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

If it is desired to utilize the keying feature, insert the key mentioned above into the appropriate I/O rack slot. Insert the input module into the same slot (holding the module's pull tab in a horizontal position as the module is inserted) and tighten the captive screw. If desired, label the marking area on the front of the module to identify the field input device connected to that particular input. Lower the latching clamp to secure the top of the module.

†SIMPLIFIED SCHEMATIC OF MODULE

Figure 7 illustrates one of eight circuits within the module. The terminal marked "1A" is common to the first four inputs within the module.

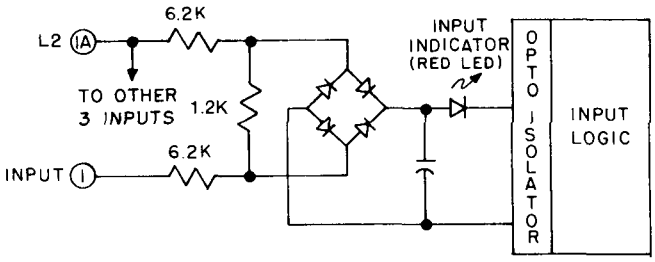


Figure 7 - Simplified Schematic of One Input Circuit