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Instruction Bulletin

Subject: SY/MAX®

CLASS 8030 TYPE COM-261 TTL OUTPUT 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

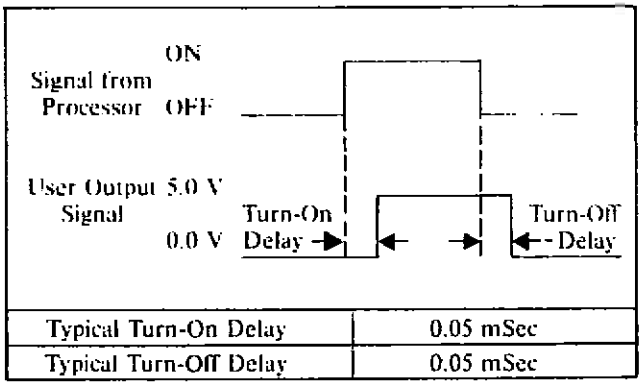
The Type COM-261 TTL Output Module provides four optically isolated outputs which can be interfaced to TTL (transistor transistor logic) circuitry or other 5 VDC devices. The module utilizes transistor drivers capable of sinking up to 60 mA from an externally supplied source, or driving 20 mA to an external device. Each output circuit configuration is switch selectable between an open collector or active pull-up mode by means of a DIP switch accessible from the rear of the module. Four LED's on the face of the module provide status indication for the individual outputs. An illuminated LED indicates a high level logic 1 output voltage.

†SPECIFICATIONS

Outputs per Module 4
Type and Rated Isolation Between Output Terminal and Logic . . . . . Optical: 2500 V RMS
Logic Information and User Requirements:

PARAMETERS	LOGIC 0	LOGIC 1	
Signal	Low	High	
Output Voltage	0.0 V min. to 0.4 V max.	Open Collector (DIP switch OFF)	Active Pull-Up (DIP switch ON)
		7.0 V max.	2.4 V min. 5.50 V max.
Module Current Sink Capability	60 mA max. at 0.4 V	—	
Module Current Source Capability	—	Active Pull-Up	
		20 mA max. at 2.4 V	
Leakage Current	—	Open Collector	
		1.0 uA max. at 7.0 V	
User Supply Voltage Requirements	5 VDC (±0.25 V) at 170 mA max. 100 mV (p-p) ripple		
LED Operation	OFF	ON	
Signal from Processor	OFF	ON	

Output Module Switching Characteristics:



Typical Turn-On Delay	0.05 mSec
Typical Turn-Off Delay	0.05 mSec

Rated Module Current Draw On SY/MAX Power Supply . . 120 mA per Module at 75% Duty Cycle
145 mA per Module at 100% Duty Cycle

Ambient Temperature Rating . . . . . 0 - 60°C

Humidity Rating . . . . . 0 - 95% non-condensing

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

Module May Be Used In These I/O Rack Assemblies . CRK-100, CRK-200, CRK-210, CRK-300, DRK-210, DRK-300

Compatibility With Input Modules CIM-151, HIM-151

TYPICAL WIRING

Figure 1 illustrates the typical wiring for the Type COM-261

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TTL Ouptut Module. Each output module is capable of being connected to a separate voltage supply. If only one voltage supply is 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.

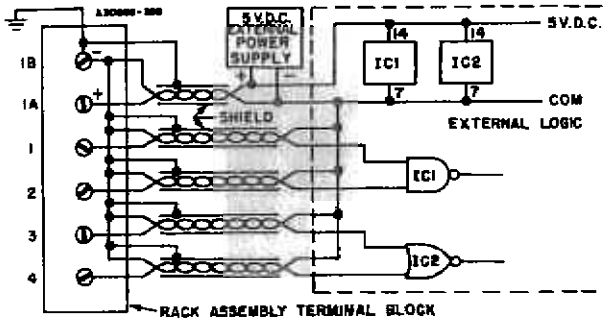


Figure 1—Typical Wiring

APPLICATION CONSIDERATIONS

- External power supply connections to terminals A and B on the rack assembly will power all four functions.
- The polarity of the power supply 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 output module to an external device. The maximum length of cable depends on the current level of the signal between the output module and the output device. If the current level is in the range of 1.6 mA to 10 mA, the maximum cable length is 10 feet. If the current level is greater than 10 mA, the maximum cable length is 50 feet.
- The output common terminal "B" on the I/O rack assembly should be connected to 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 the output module and the external device connected to it do not share the same power supply, the commons of both power supplies must be connected together.
- If a TTL output module is connected to a TTL input module, the cable shields should be connected to the "B" terminal (common) on the *output* rack assembly.

MODULE KEYING

Each socket on the rack 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 Type COM-261 TTL Output Module is between pins 30 and 32. See Figure 2. The keying pin is simply inserted manually into the slot of the 1/0 rack connector using the keying pin insertion tool provided with the kit. See Figure 3.

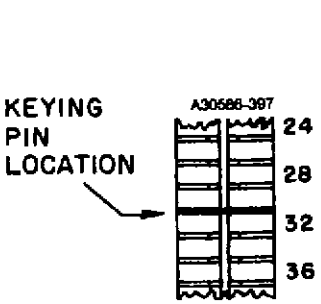


Figure 2
Keying Pin Location

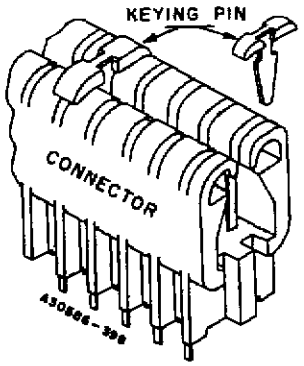


Figure 3
Inserting Keying Pin

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 open collector or active pull-up circuit configuration for each individual output. 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 active pull-up or set the switch in the "OFF" position to select open collector (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.

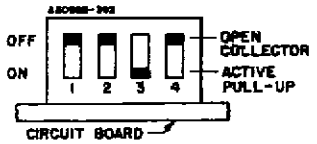


Figure 4—Module DIP Switches

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 outputs within the module.

NOTE: The switch labeled "S1", when closed, selects the active pull-up circuit configuration.

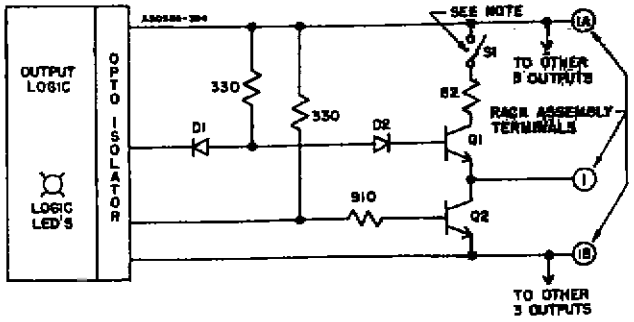


Figure 5—Simplified Schematic of One Output Module Circuit

M. R. Earles

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