Instruction Bulletin

Subject: SY/MAX®

CLASS 8030 TYPE HOM221
8 FUNCTION 120 VAC OUTPUT MODULE

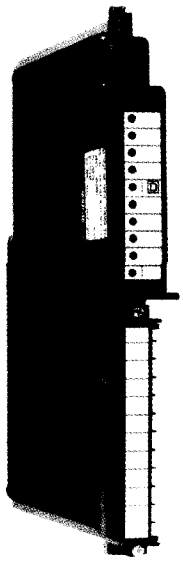
DESCRIPTION

The Type HOM221 120 VAC Output Module contains 8 optically isolated outputs, each capable of driving loads such as motor starters, solenoids, or pilot lights.

A red LED indicator on the front of the module for each output illuminates when the processor issues a command to energize that output. Two neon lamps on the front of the module, one for each group of 4 outputs, illuminate when a blown fuse is detected. A marking area is provided next to each LED for output identification.

SPECIFICATIONS

Outputs per module	8
Type of isolation	optical
Isolation rating	2500 V rms
Voltage range	50-138V 50/60 Hz
Maximum current	1 A per output, 8 A per module
Minimum load current	see "Application Considerations"
Maximum On state voltage drop across output	2.0 V at 2 A load
Maximum Off state leakage current	2.0 mA at 138 V, 50/60 Hz
Maximum surge current	25 A for one cycle (60 Hz), no more than one per second
Turn on time	less than .1 ms at 120V
Turn off time	8.3 ms max. at 60 Hz, 10 ms max. at 50 Hz
Fuse	AGC-3, 3A, 250V
LED operation	Red LED illuminated when receiving "ON" signal from processor
Rated module current draw on SY/MAX power supply	225 mA per module at 75% duty cycle 270 mA per module at 100% duty cycle
Ambient temperature rating	0-60°C
Humidity rating	0-95% non-condensing



Weight (unpackaged) . . . . 1.8 lb/.806 kg

Rack assemblies in which module may be used. HRK100, HRK150, HRK200

Compatibility with input modules. HIM101, CIM101, DIM101

TYPICAL WIRING

⚠ DANGER

ELECTRICAL SHOCK OR BURN HAZARD

There is danger of electrical shock or burn when coming in contact with terminal strip or field wiring. Always turn off power supplying this equipment before servicing this module.

Failure to observe this precaution will result in death, severe personal injury, or equipment damage.

Output devices are wired to the terminal block on the front of the module. Figure 1 on the next page illustrates the typical wiring for the Type HOM221 Output Module.

Wiring terminals 1-4 share a common "1A" terminal. Wiring terminals 5-8 share common terminal "2A." Likewise, wiring terminals 9-16 share common terminals "3A" and "4A." The "B" terminals are wired directly to L2 to provide the power required for the blown fuse indicators.

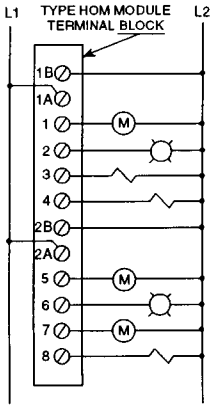


Figure 1: Typical wiring

A hinged plastic flap covers the wiring terminals on the front of the module. Labels are provided for both sides of this flap (see Figure 2). Place the label with 8 marking areas 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 1-8, the other for terminals 9-16. If the module is inserted in an ODD numbered slot, place the label for terminals 1-8 on the inside of the flap. If the module is placed in an EVEN numbered slot, use the label for terminals 9-16. See Figure 3.

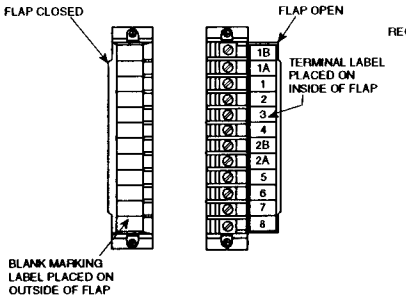


Figure 2: I/O terminal labels

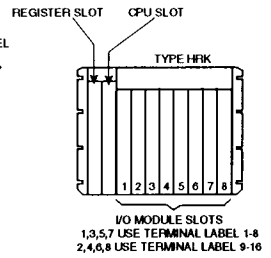


Figure 3: Terminal label placement

APPLICATION CONSIDERATIONS

- The Type HOM221 Output Module has one common for each set of 4 outputs (2 commons per module).
- The maximum current rating of each output is 2 A. Total module output current rating is 12 A from 0-50°C and 10 A from 50-60°C.
- The Type HOM221 Output Module has internal transient noise suppression. It may be wired in series or parallel with hard contact switches to control an inductive load (such as a motor starter or a solenoid). *Do not* install additional noise suppression. Additional suppression may cause outputs to turn ON for 1/2 cycle when AC power is applied.
- Depending on the size and routing of wire to the terminals, it may be necessary to remove an adjacent terminal strip before removing an I/O module.
- When using the output module below 90 VAC, the blown fuse indicator lamp will not operate.
- Although the output module does not require a minimum load current, be sure the maximum leakage current (given in the specifications on page 1) will not turn on the load. Contact Square D Company for application assistance.
- Each of the 8 output circuits is individually fused. Each fuse is rated at 3 A. Lower-rated fuses may be installed, depending on the output devices being controlled. Fuses are accessible through openings in the side of the module. To replace fuses, use the following procedure:
  1. Turn the processor keyswitch to "HALT" or "DISABLE OUTPUTS," or remove power from the power supply feeding the rack assembly. See Figure 4.
  2. Because voltage can be present at the terminal block on the module even when the module is unpowered, all power to the terminal block should also be removed to avoid electrical shock.
  3. Remove the output module from the rack assembly by loosening the module mounting screw and pulling the module from the rack assembly.
  4. Use a fuse puller or small screwdriver to pry up one end of the fuse, being careful not to damage the printed circuit board underneath. See Figure 5.
  5. Position the replacement fuse on a fuse clip and push into place with the screwdriver. Push on the metal, not the glass, portion of the fuse.
  6. Reinstall the output module in the rack assembly and tighten the mounting screws. Lock the latching clamp over the top of the module.
  7. Turn the processor keyswitch to "RUN" or reapply power to the power supply. Also reapply power to the module terminal block

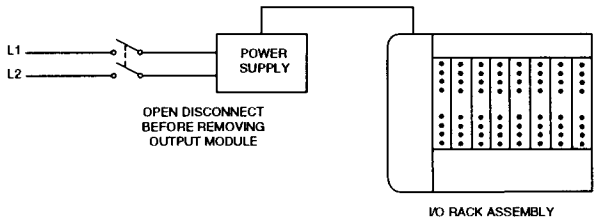


Figure 4: Removing power from the power supply

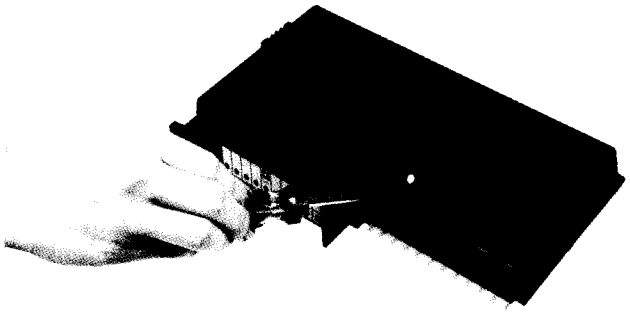


Figure 5: Fuse removal

MODULE KEYING

Each connector on the I/O module slots may be keyed to prevent the insertion of other module types. A keying pin kit, Class 8030 Type CBP104, is available for this purpose. The correct position of the keying pin for the Type HOM221 Output Module is between pins 20 and 22 (see Figure 6). The keying pin is simply inserted manually into the appropriate slot in the rack connector using the keying pin insertion tool provided with the kit. See Figure 7.

Note: Keying may be the same or different for other output module types.

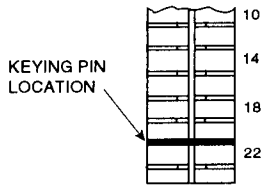


Figure 6: Keying pin location

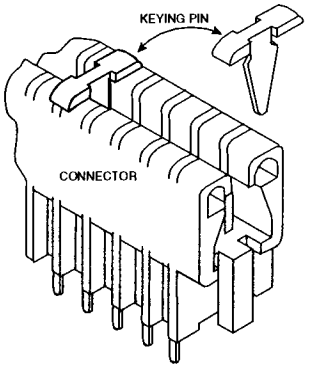


Figure 7: Keying pin insertion

⚠ CAUTION

EQUIPMENT DAMAGE HAZARD

To prevent possible equipment damage, use care to avoid touching the contact fingers within the connector when inserting or removing the keying pins. Improper insertion/ removal may damage the connector.

Failure to observe this precaution can result in equipment damage.

INSTALLATION INSTRUCTIONS

Insert the output module into the rack (holding the pull tab of the module in a horizontal position as the module is inserted) and tighten the captive screw at the bottom of the module. Lower the latching clamp to secure the top of the module.

SIMPLIFIED SCHEMATIC

Figure 8 illustrates one of the 8 circuits within the Type HOM221 Output Module. The terminals marked "1A" and "1B" are common to output terminals 1-4.

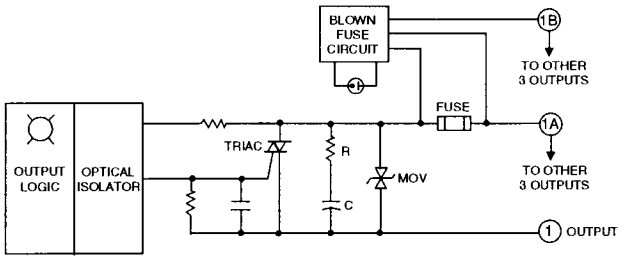


Figure 8: Simplified schematic of one output circuit