

# SIEMENS

## Installation Instructions

### Model MOI-7

### MXL/MXL-IQ Annunciator Driver

The Model MOI-7 from Siemens Industry, Inc. is an MXL/MXL-IQ network module that connects to a graphic annunciator using MOD-16s and MID-16s.

## OPERATION

The MOI-7 can support up to 8 MOD-16s and 8 MID-16s, which provide for a total of 128 open collector outputs and 128 user programmable inputs. These inputs and outputs are controlled by logic functions in the CSG-M.

The MOI-7 has two LEDs that indicate the status of the MXL/MXL-IQ network interface. The **TRANSMIT** LED blinks every time the MOI-7 communicates with the MXL/MXL-IQ. The **TROUBLE** LED goes on steady if the MOI-7 **cannot** communicate with the MXL/MXL-IQ.

For additional information on the MXL/MXLV System, refer to the *MXL/MXLV Manual*, P/N 315-092036.

## INSTALLATION

**Remove all system power before installation, first battery and then AC.** (To power up, connect the AC first, then the battery.)

1. Mount the MOI-7.  
The MOI-7 mounts on a System 3 rail in two module spaces. Mount the MOI-7 using the four screws provided.
2. Set the network address on S1.  
The MOI-7 occupies one network address in the MXL/MXL-IQ System. Set the address according to Table 1 so that it agrees with the address assigned in the CSG-M.

### NOTE:

**If the network address of the MOI-7 is 127 or lower**, the lamp test for the MOD-16 is performed in sequence, one MOD-16 at a time.

**If the network address of the MOI-7 is 128 or higher**, the lamp test is performed by energizing all the MOD-16s simultaneously.

## WIRING

In compliance with UL-864, effective May 1, 1995, all power limited fire protective signaling conductors must be separated a minimum of 1/4 inch from all of the following items located within a control panel:

- electric light
- power
- Class 1 or non-power limited signaling conductors

To meet these requirements, the following guidelines **must be observed** when installing modules and wiring to this control panel.

**NOTE:** If power limited wiring is not used within this enclosure, the following guidelines do not apply. In that case, be sure to follow standard wiring practices.

## WIRING ENTERING THE ENCLOSURE

### **Non-power Limited Wiring**

Wiring to the following module terminations located within the enclosure and shown in Table 2 is considered non-power limited and must enter through the knockouts specified (See Figure 1). Wiring between the knockouts specified and the module termination must be in the shortest route, and must not overlap any other wiring.

**TABLE 1  
NETWORK ADDRESS PROGRAMMING**

ADDR	8 7 6 5 4 3 2 1	ADDR	8 7 6 5 4 3 2 1	ADDR	8 7 6 5 4 3 2 1	ADDR	8 7 6 5 4 3 2 1
000	ILLEGAL	064	OX000000	128	X0000000	192	XX000000
001	ILLEGAL	065	OX00000X	129	X000000X	193	XX00000X
002	ILLEGAL	066	OX00000X	130	X000000X	194	XX00000X
003	000000XX	067	OX00000X	131	X000000X	195	XX00000X
004	00000X00	068	OX000X00	132	X0000X00	196	XX000X00
005	00000X0X	069	OX000X0X	133	X0000X0X	197	XX000X0X
006	00000X0X	070	OX000X0X	134	X0000X0X	198	XX000X0X
007	00000XXX	071	OX000XXX	135	X0000XXX	199	XX000XXX
008	0000X000	072	OX00X000	136	X000X000	200	XX00X000
009	0000X00X	073	OX00X00X	137	X000X00X	201	XX00X00X
010	0000X0X0	074	OX00X0X0	138	X000X0X0	202	XX00X0X0
011	0000X0XX	075	OX00X0XX	139	X000X0XX	203	XX00X0XX
012	0000XX00	076	OX00XX00	140	X000XX00	204	XX00XX00
013	0000XX0X	077	OX00XX0X	141	X000XX0X	205	XX00XX0X
014	0000XX0X	078	OX00XX0X	142	X000XX0X	206	XX00XX0X
015	0000XXXX	079	OX00XXXX	143	X000XXXX	207	XX00XXXX
016	000X0000	080	OX0X0000	144	X00X0000	208	XX0X0000
017	000X000X	081	OX0X000X	145	X00X000X	209	XX0X000X
018	000X00X0	082	OX0X00X0	146	X00X00X0	210	XX0X00X0
019	000X00XX	083	OX0X00XX	147	X00X00XX	211	XX0X00XX
020	000X0X00	084	OX0X0X00	148	X00X0X00	212	XX0X0X00
021	000X0X0X	085	OX0X0X0X	149	X00X0X0X	213	XX0X0X0X
022	000X0XX0	086	OX0X0XX0	150	X00X0XX0	214	XX0X0XX0
023	000X0XXX	087	OX0X0XXX	151	X00X0XXX	215	XX0X0XXX
024	000XX000	088	OX0XX000	152	X00XX000	216	XX0XX000
025	000XX00X	089	OX0XX00X	153	X00XX00X	217	XX0XX00X
026	000XX0X0	090	OX0XX0X0	154	X00XX0X0	218	XX0XX0X0
027	000XX0XX	091	OX0XX0XX	155	X00XX0XX	219	XX0XX0XX
028	000XX000	092	OX0XX000	156	X00XX000	220	XX0XX000
029	000XX00X	093	OX0XX00X	157	X00XX00X	221	XX0XX00X
030	000XX0X0	094	OX0XX0X0	158	X00XX0X0	222	XX0XX0X0
031	000XX0XX	095	OX0XX0XX	159	X00XX0XX	223	XX0XX0XX
032	00X00000	096	OX000000	160	X0X00000	224	XX000000
033	00X0000X	097	OX00000X	161	X0X0000X	225	XX00000X
034	00X000X0	098	OX0000X0	162	X0X000X0	226	XX0000X0
035	00X000XX	099	OX0000XX	163	X0X000XX	227	XX0000XX
036	00X00X00	100	OX000X00	164	X0X00X00	228	XX000X00
037	00X00X0X	101	OX000X0X	165	X0X00X0X	229	XX000X0X
038	00X00X0X	102	OX000X0X	166	X0X00X0X	230	XX000X0X
039	00X00XXX	103	OX000XXX	167	X0X00XXX	231	XX000XXX
040	00X0X000	104	OX00X000	168	X0X0X000	232	XX00X000
041	00X0X00X	105	OX00X00X	169	X0X0X00X	233	XX00X00X
042	00X0X0X0	106	OX00X0X0	170	X0X0X0X0	234	XX00X0X0
043	00X0X0XX	107	OX00X0XX	171	X0X0X0XX	235	XX00X0XX
044	00X0XX00	108	OX00XX00	172	X0X0XX00	236	XX00XX00
045	00X0XX0X	109	OX00XX0X	173	X0X0XX0X	237	XX00XX0X
046	00X0XXX0	110	OX00XXX0	174	X0X0XXX0	238	XX00XXX0
047	00X0XXXX	111	OX00XXXX	175	X0X0XXXX	239	XX00XXXX
048	00XX0000	112	OX0X0000	176	X0XX0000	240	XX000000
049	00XX000X	113	OX0X000X	177	X0XX000X	241	XX00000X
050	00XX00X0	114	OX0X00X0	178	X0XX00X0	242	XX0000X0
051	00XX00XX	115	OX0X00XX	179	X0XX00XX	243	XX0000XX
052	00XX0X00	116	OX0X0X00	180	X0XX0X00	244	XX000X00
053	00XX0X0X	117	OX0X0X0X	181	X0XX0X0X	245	XX000X0X
054	00XX0X0X	118	OX0X0X0X	182	X0XX0X0X	246	XX000X0X
055	00XX0XXX	119	OX0X0XXX	183	X0XX0XXX	247	XX000XXX
056	00XX0000	120	OX0X0000	184	X0XX0000	248	ILLEGAL
057	00XX000X	121	OX0X000X	185	X0XX000X	249	ILLEGAL
058	00XX00X0	122	OX0X00X0	186	X0XX00X0	250	ILLEGAL
059	00XX00XX	123	OX0X00XX	187	X0XX00XX	251	ILLEGAL
060	00XX0X00	124	OX0X0X00	188	X0XX0X00	252	ILLEGAL
061	00XX0X0X	125	OX0X0X0X	189	X0XX0X0X	253	ILLEGAL
062	00XX0X0X	126	OX0X0X0X	190	X0XX0X0X	254	ILLEGAL
063	00XX0XXX	127	OX0X0XXX	191	X0XX0XXX	255	ILLEGAL

O = OPEN (or OFF) X = CLOSED (or ON)

TABLE 2

Module	Termination	Enclosure Knockout
PS-35	TB1 (1, 2, 4)	1
PS-5A from MMB	TB1 (2, 3)	1
PS-5A from PSR-1	TB1 (2, 3)	1

**WIRING IN THE ENCLOSURE**

**Non-power Limited Wiring**

The following wiring is considered non-power limited and must be routed as shown in Figure 1:

- To the PS-5A, TB1 (Positions 2, 3) from the PS-35, terminals 5, 6.
- Directly from the MMB or PSR-1 and between the PS-5A, J3 and the MOI-7, P1.

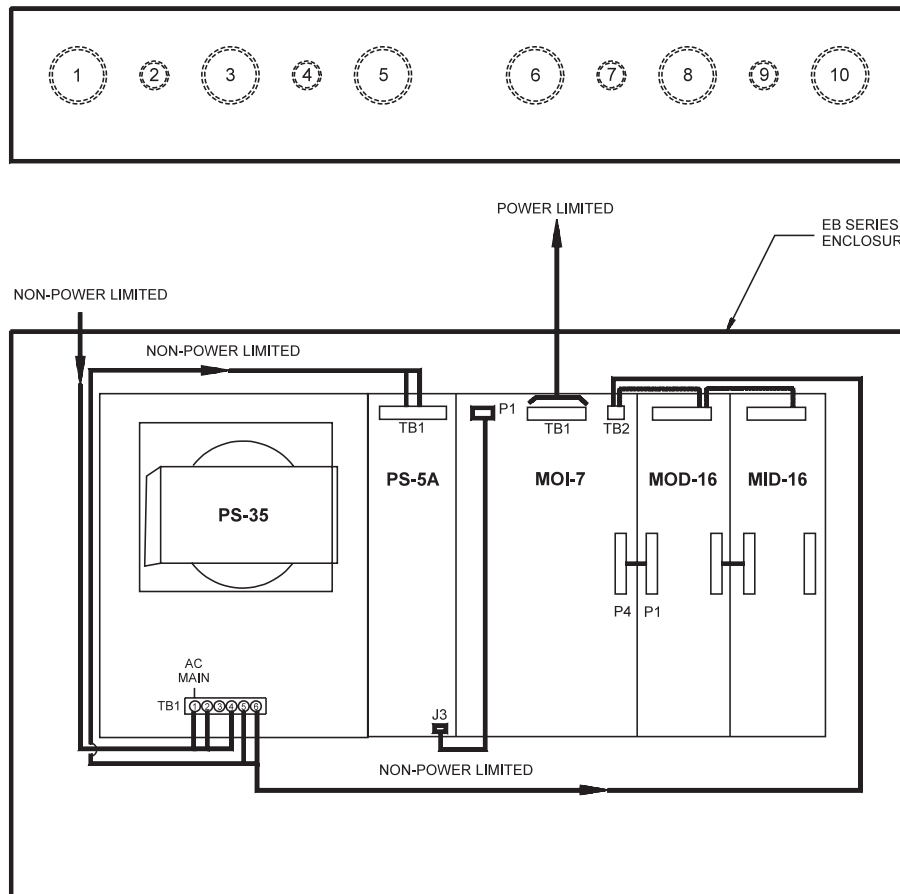
**WIRING ENTERING THE ENCLOSURE**

**Power Limited Wiring**

Wiring to the terminations shown in Table 3 is considered power limited and must enter through the knockouts specified (See Figure 1). Wiring between the knockout specified and the module termination must be in the shortest route and must not overlap any other wiring.

TABLE 3

Module	Termination	Enclosure Knockout
MOI-7	TB1 (1-4)	6 or 7



**Figure 1**  
**MOI-7 Power Limited Wiring**

## ELECTRICAL RATINGS

(Excluding MOD-16 and MID-16)

Active 5VDC Module Current	70mA
Active 24VDC Module Current	0mA
Standby 24VDC Module Current	20mA

## ELECTRICAL CONNECTIONS

The MOI-7 is shipped with two cables. (See Figure 2.)

### 1. 5V Power

The MOI-7 receives its 5 volt power on connector P1. This power can be sent to other modules requiring 5 volts from P2. Pin 1 is the positive input; pin 2 the return. Use cable P/N 600-291261, which is supplied.

### 2. MXL Network Connection

The MOI-7 can be connected to the MXL network in three ways. (See Figure 3.)

**The first connection** is for Style 4. For Style 4 wiring use only terminals 1 and 2 of TB1; terminals 3 and 4 of TB1 are not used. In a Style 4 network, make only Network A connections and ignore all Network B connections. (See Figure 3.)

**The second connection** allows the MOI-7 to connect directly to a Style 7 network. This connection is called a Remote Style 7. In this configuration all the terminals of TB1 are used. Install the MOI-7 at any point along the Style 7 network **except** at either end. The Style 7 network **must** terminate on an NET-7 module to insure proper supervision of the network. Each MOI-7 connected directly to the network wiring occupies one of the 32 network nodes. **Do not use connector P5 in this configuration.** (See Figure 3.)

**The third connection** is also Style 7. This connection is called a Local Style 7 and its

advantage is that it does not use up a network node. In this configuration the MOI-7 communicates through the NET-7 installed in the enclosure. In order for the MOI-7 to use the NET-7, it must connect to the 8 wire ribbon cable on either the MMB or the PSR-1 through connector P5. This limits the distance an MOI-7 can be located from the MMB or the PSR-1. An eight foot cable (P/N MER-8) is available for this purpose. The MOI-7 must be located in a close nipped enclosure.

**Remove ICs U1 and U12 and make no connections to TB1.** (See Figure 3.)

### 3. MXL-IQ Network Connection

The MXL-IQ provides Style 4 only for the MOI-7. Use only terminals 1 and 2 of TB1. Omit all Network B wiring. (See Figure 4.)

### 4. 24V Return

TB2 connects to the return side of the power supply used with the MOD-16s and MID-16s. There are two positions on the TB2—position 1 connects to the MOD-16 and position 2 to PSR-1, TB3-2, or to PS-35, terminal 6.

### 5. MOD-16 and MID-16 Connection

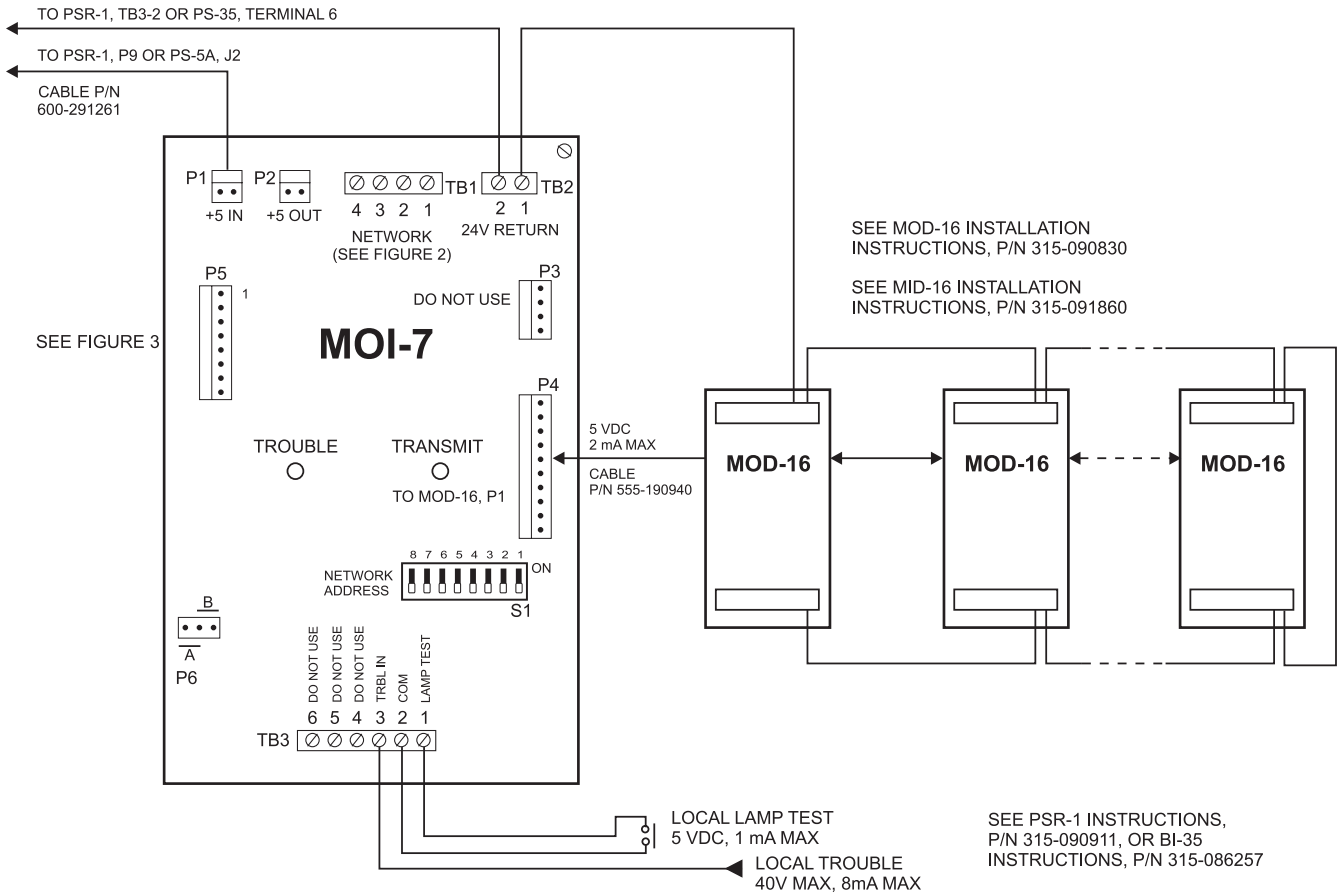
P4 is the connector for the MOD-16/MID-16 modules. Connect the first MOD-16/MID-16 in the system using a ten wire cable P/N 555-190940. Be sure that the locking tab on the cable engages the rib on P4.

### 6. Local Trouble Input

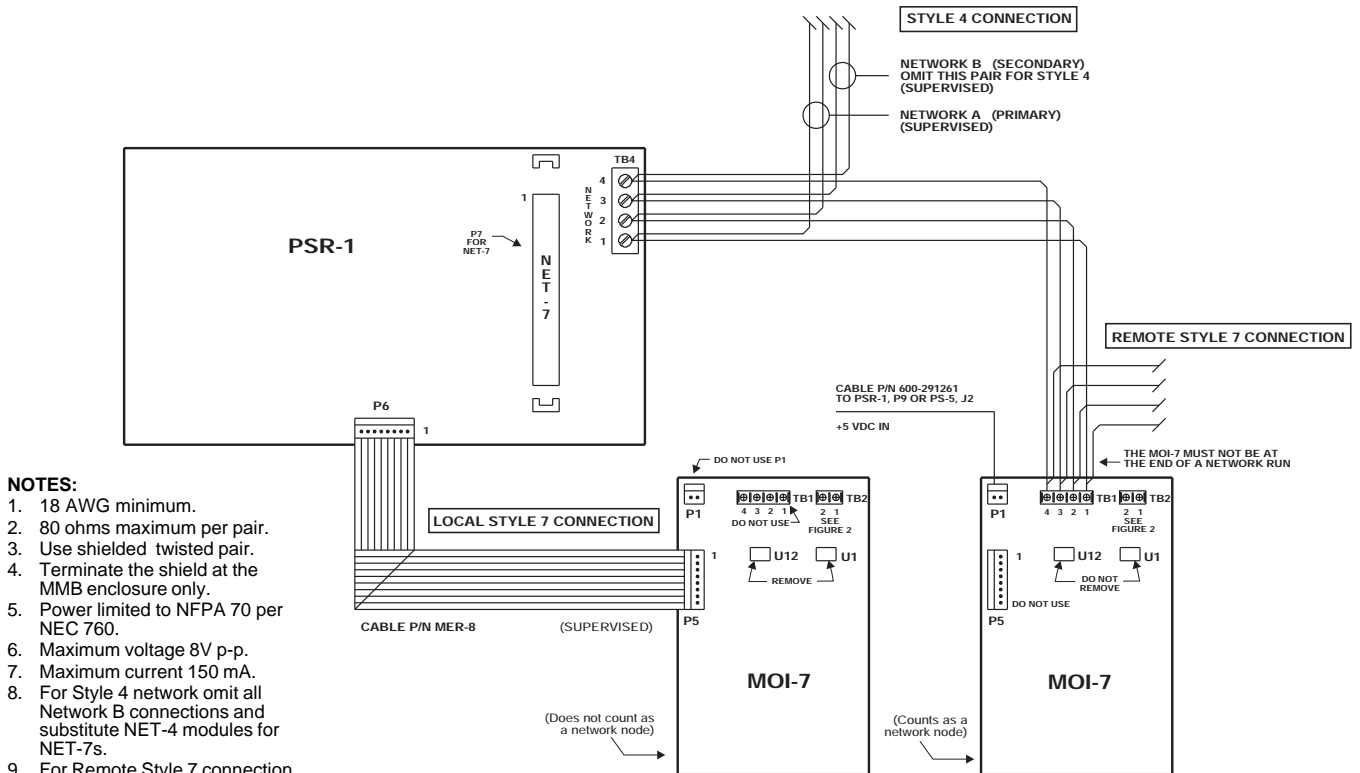
When terminal 3 of TB3, the local trouble input, is driven high, it reports a trouble condition to the MXL/MXL-IQ. This input is protected and has a maximum input rating of 40V. Terminal 2 of TB3 is the common for this input.

### 7. Local Lamp Test

Terminal 1 of TB3 is used for a local lamp test. When this input is pulled low, the MOD-16 outputs do a lamp test. Use a normally open momentary switch connected between terminal 1 and 2 of TB3.

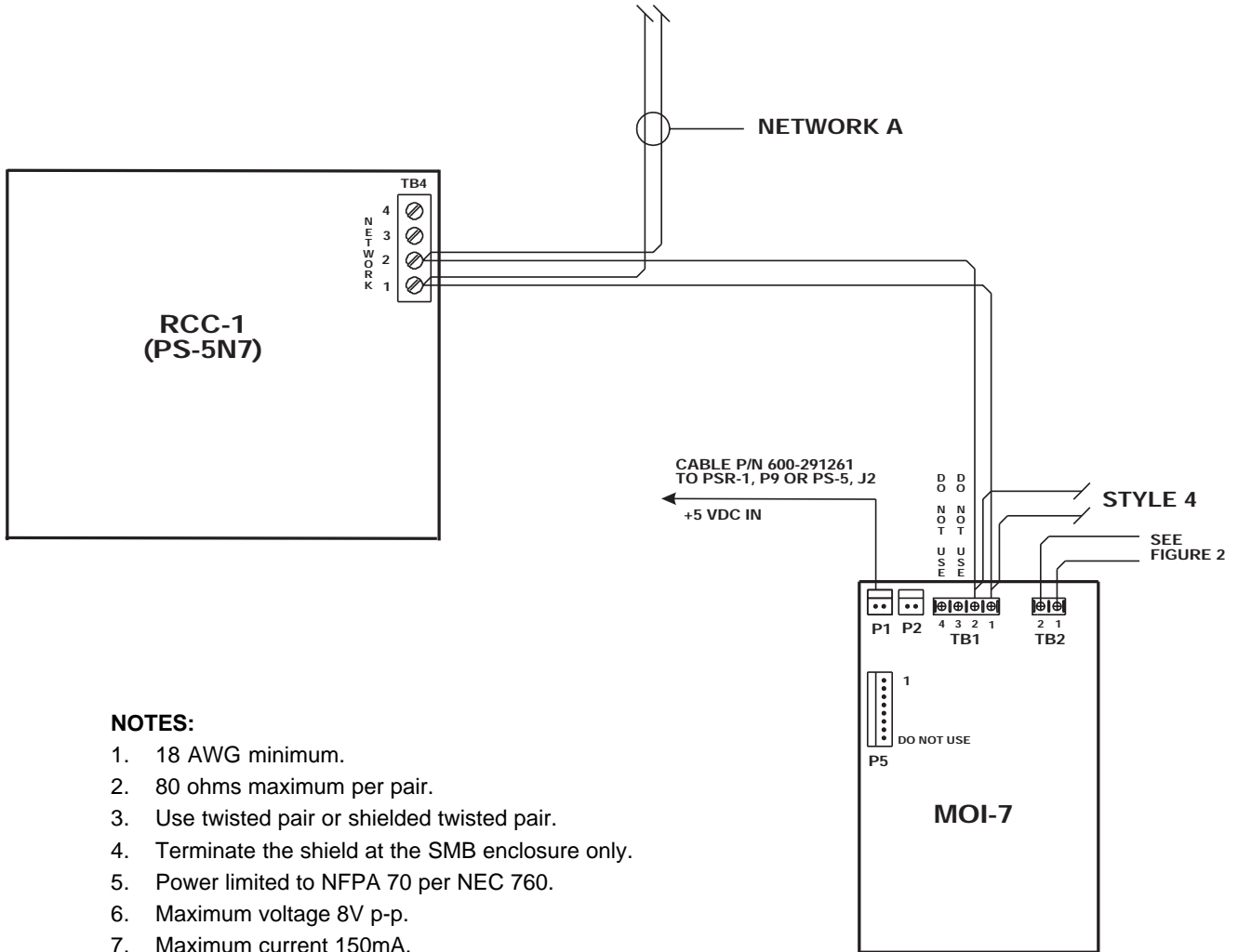


**Figure 2**  
**Wiring Diagram**



- NOTES:**
- 18 AWG minimum.
  - 80 ohms maximum per pair.
  - Use shielded twisted pair.
  - Terminate the shield at the MMB enclosure only.
  - Power limited to NFPA 70 per NEC 760.
  - Maximum voltage 8V p-p.
  - Maximum current 150 mA.
  - For Style 4 network omit all Network B connections and substitute NET-4 modules for NET-7s.
  - For Remote Style 7 connection, the MOI-7 must not be at the end of the network.

**Figure 3**  
**MXL Network Connection Wiring Diagram**



**NOTES:**

1. 18 AWG minimum.
2. 80 ohms maximum per pair.
3. Use twisted pair or shielded twisted pair.
4. Terminate the shield at the SMB enclosure only.
5. Power limited to NFPA 70 per NEC 760.
6. Maximum voltage 8V p-p.
7. Maximum current 150mA.

**Figure 4  
MXL-IQ Network Connection Wiring Diagram**



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