

SIEMENS

Installation Instructions

Model NIM-1W Network Interface Module NETWORK INTERFACE APPLICATIONS

OPERATION

The Model NIM-1W from Siemens Industry, Inc., provides a new communication path for the following uses:

- as an XNET networking interface
- as an HNET connection to NCC WAN
- as a connection to Foreign Systems
- as a connection to Air Sampling detectors

When used as an XNET networking interface the NIM-1W allows for the connection of up to 63 MXL and/or XLS Systems. On an XNET network the NIM-1W also supports monitor and control functionality by Siemens products, such as NCC and Desigo CC.

Output logic between MXL panels is done using CSG-M programming. CSG-M versions 6.01 and higher include options for networked MXL Systems. Each MXL System is assigned a panel number. This panel number allows interactive programming between panels using CSG-M.

The NIM-1W supports both Style 4 and Style 7 connection. In the event of an NIM-1W communication failure, each MXL System continues to operate as a standalone panel.

The NIM-1W can also be configured as an RS-485 two wire interface to foreign systems. NIM-1W RS485 only supports Style 4 wiring. Via the add-on modem card NIM-1M, NIM-1W can also be configured for modem connection. This operation is called FSI (Foreign System Interface). The FSI responds to a protocol and gathers information about the MXL status. The interface supports both single MXL Systems and networked systems. Typical use of this interface is between the MXL and building management systems.

Use the CSG-M to enable the functions accessed by the foreign system. If the foreign system is UL 864 listed with the MXL, the interface can also be enabled to support control of the MXL including the commands to acknowledge, silence, and reset.

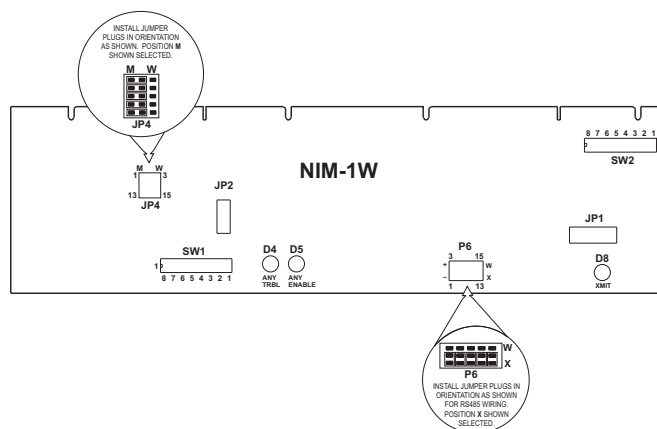


Figure 1
NIM-1W Module Board (RS485 setting)

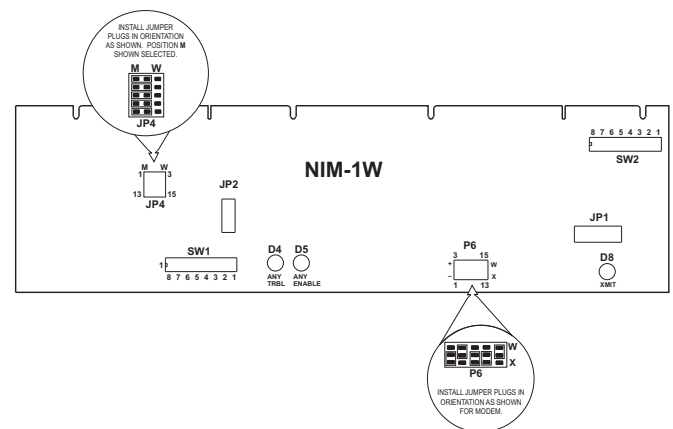


Figure 2
NIM-1W Module Board (modem setting)

**TABLE 1
NETWORK ADDRESS PROGRAMMING (SW1)**

ADDR	87654321	ADDR	87654321	ADDR	87654321	ADDR	87654321
000	ILLEGAL	064	OX000000	128	X0000000	192	XX000000
001	ILLEGAL	065	OX00000X	129	X000000X	193	XX00000X
002	ILLEGAL	066	OX0000X0	130	X00000X0	194	XX0000X0
003	000000XX	067	OX0000XX	131	X00000XX	195	XX0000XX
004	00000X00	068	OX000X00	132	X0000X00	196	XX000X00
005	00000X0X	069	OX000X0X	133	X0000X0X	197	XX000X0X
006	00000XX0	070	OX000XX0	134	X0000XX0	198	XX000XX0
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	0000XXX0	078	OX00XXX0	142	X000XXX0	206	XX00XXX0
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	000XXX00	092	OX0XXX00	156	X00XXX00	220	XX0XXX00
029	000XXX0X	093	OX0XXX0X	157	X00XXX0X	221	XX0XXX0X
030	000XXXX0	094	OX0XXXX0	158	X00XXXX0	222	XX0XXXX0
031	000XXXXX	095	OX0XXXXX	159	X00XXXXX	223	XX0XXXXX
032	00X00000	096	OXX00000	160	X0X00000	224	XXX00000
033	00X0000X	097	OXX0000X	161	X0X0000X	225	XXX0000X
034	00X000X0	098	OXX000X0	162	X0X000X0	226	XXX000X0
035	00X000XX	099	OXX000XX	163	X0X000XX	227	XXX000XX
036	00X00X00	100	OXX00X00	164	X0X00X00	228	XXX00X00
037	00X00X0X	101	OXX00X0X	165	X0X00X0X	229	XXX00X0X
038	00X00XX0	102	OXX00XX0	166	X0X00XX0	230	XXX00XX0
039	00X00XXX	103	OXX00XXX	167	X0X00XXX	231	XXX00XXX
040	00X0X000	104	OXX0X000	168	X0X0X000	232	XXX0X000
041	00X0X00X	105	OXX0X00X	169	X0X0X00X	233	XXX0X00X
042	00X0X0X0	106	OXX0X0X0	170	X0X0X0X0	234	XXX0X0X0
043	00X0X0XX	107	OXX0X0XX	171	X0X0X0XX	235	XXX0X0XX
044	00X0XX00	108	OXX0XX00	172	X0X0XX00	236	XXX0XX00
045	00X0XX0X	109	OXX0XX0X	173	X0X0XX0X	237	XXX0XX0X
046	00X0XXX0	110	OXX0XXX0	174	X0X0XXX0	238	XXX0XXX0
047	00X0XXXX	111	OXX0XXXX	175	X0X0XXXX	239	XXX0XXXX
048	00XX0000	112	OXXX0000	176	X0XX0000	240	XXX00000
049	00XX000X	113	OXXX000X	177	X0XX000X	241	XXX0000X
050	00XX00X0	114	OXXX00X0	178	X0XX00X0	242	XXX000X0
051	00XX00XX	115	OXXX00XX	179	X0XX00XX	243	XXX000XX
052	00XX0X00	116	OXXX0X00	180	X0XX0X00	244	XXX0X000
053	00XX0X0X	117	OXXX0X0X	181	X0XX0X0X	245	XXX0X00X
054	00XX0XX0	118	OXXX0XX0	182	X0XX0XX0	246	XXX0XX00
055	00XX0XXX	119	OXXX0XXX	183	X0XX0XXX	247	XXX0XXX0
056	00XX0000	120	OXXX0000	184	X0XX0000	248	ILLEGAL
057	00XX000X	121	OXXX000X	185	X0XX000X	249	ILLEGAL
058	00XX00X0	122	OXXX00X0	186	X0XX00X0	250	ILLEGAL
059	00XX00XX	123	OXXX00XX	187	X0XX00XX	251	ILLEGAL
060	00XX0X00	124	OXXX0X00	188	X0XX0X00	252	ILLEGAL
061	00XX0X0X	125	OXXX0X0X	189	X0XX0X0X	253	ILLEGAL
062	00XX0XX0	126	OXXX0XX0	190	X0XX0XX0	254	ILLEGAL
063	00XXXXXX	127	OXXXXXXX	191	XOXXXXXX	255	ILLEGAL

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

**TABLE 2
PANEL NUMBER PROGRAMMING (SW2)**

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	ROOOOOOO	016	SOOXOOOO	032	SOXOOOOO	048	SOXXOOOO
001	SOOOOOOX	017	SOOXOOOX	033	SOXOOOOX	049	SOXXOOOX
002	SOOOOOXO	018	SOOXOOXO	034	SOXOOOXO	050	SOXXOOXO
003	SOOOOOXX	019	SOOXOOXX	035	SOXOOOXX	051	SOXXOOXX
004	SOOOOXOO	020	SOOXOXOO	036	SOXOOXOO	052	SOXXOXOO
005	SOOOOXOX	021	SOOXOXOX	037	SOXOOXOX	053	SOXXOXOX
006	SOOOOX XO	022	SOOXOX XO	038	SOXOOX XO	054	SOXXOX XO
007	SOOOOXXX	023	SOOXOXXX	039	SOXOOXXX	055	SOXXOXXX
008	SOOOXOOO	024	SOOXOXXX	040	SOXOXOOO	056	SOXXXOOO
009	SOOOXOOX	025	SOOXOXXX	041	SOXOXOOX	057	SOXXXOOX
010	SOOOXOXO	026	SOOXOXXX	042	SOXOXOXO	058	SOXXXOXO
011	SOOOXOXX	027	SOOXOXXX	043	SOXOXOXX	059	SOXXXOXX
012	SOOOXXOO	028	SOOXOXXX	044	SOXOXXOO	060	SOXXXOOO
013	SOOOXXOX	029	SOOXOXXX	045	SOXOXXOX	061	SOXXXOXO
014	SOOOXXXO	030	SOOXOXXX	046	SOXOXXXO	062	SOXXXOXO
015	SOOOXXXX	031	SOOXOXXX	047	SOXOXXXX	063	SOXXXOXX
---	-----	---	-----	---	-----	064	SXOOOOOO
S = Closed selects Style 7		O = Open or OFF		R = Closed selects AnaLASER			
S = Open selects Style 4		X = Closed or ON		R = Open selects FSI			

NOTE:

To open a dipswitch, press down on the side of the dipswitch marked OPEN.
 To close a dipswitch, press down on the side of the dipswitch opposite the side marked OPEN.
 To open a slide switch, push the slide to the side opposite the side marked ON.
 To close a slide switch, push the slide to the side marked ON.

The NIM-1W also provides for the connection of up to 31 Air Sampling detectors. The MXL supports individual programming and monitoring of the Air Sampling devices. Each detector can be uniquely programmed from the MKB menu or by using CSG-M. All three alarm levels (PreAlarm 1, PreAlarm 2, and Alarm) are supported.

NOTE: When the NIM-1W is configured as an Air Sampling interface, it cannot support either MXL networking or the FSI. If these functions are required, additional NIM-1Ws must be used.

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.)

The NIM-1W installs into the MXL optional MOM-4/2 card cage where it occupies one full width slot. The NIM-1W can be installed in either of the full slots of the MOM-4/2. The slot determines if the wiring is connected to TB3 or TB4 of the MOM-4/2.

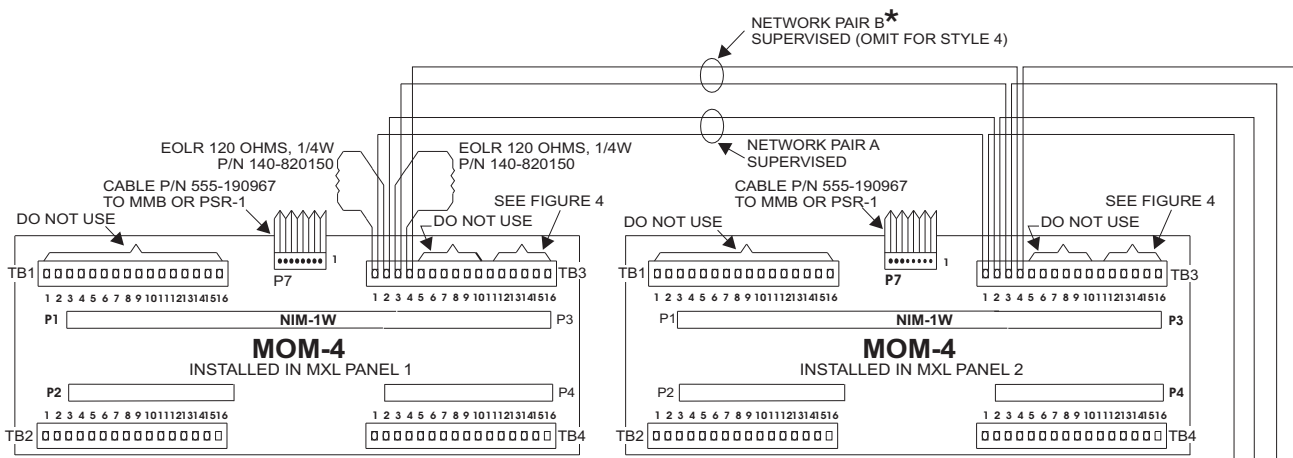
Setting the Switches

Set all switches, configuration jumpers, and connection cables before installing the NIM-1W into the MOM-4.

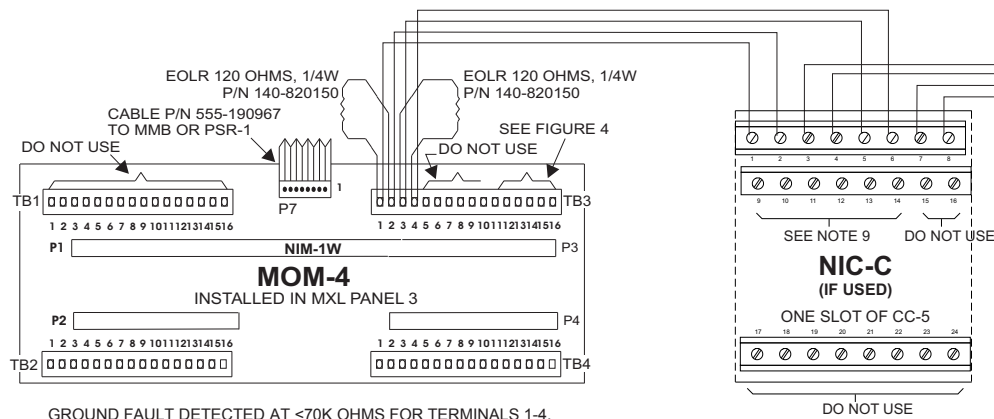
Use switch SW1 to set the MXL network address. Set this switch according to the address where the NIM-1W is installed in the MXL's network map. Refer to the CSG-M configuration printout for the address of the module. See Table 1 for settings.

Use switch SW2 to set either the panel number for networked systems or to select FSI or Air Sampling operation. Refer to Table 2 for panel settings, Table 3 for FSI settings, and Table 4 for Air Sampling settings.

1. When installing the NIM-1W in a networked system, set the panel number to agree with the panel number for the NIM-1W assigned to the MXL System in CSG-M.
2. Switch position 8 selects Style 4 or Style 7 operation for the NIM-1W network.
3. Set jumper plugs on JP4 to the "M" position.
4. Set jumper plugs on P6 to the "X" position (Figure 1) if using NIM-1W for RS-485 interface. Set jumper plugs on P6 as shown in Figure 2 if using NIM-W for modem interface.



* REQUIRED IN CANADIAN INSTALLATIONS



NOTES:

1. 18 AWG minimum.
2. 80 ohms maximum per pair.
3. Use shielded twisted pair.
4. Terminate the shield at MXL Panel 1 only.
5. Power limited to NFPA 70 per NEC 760.
6. Maximum voltage 8V peak to peak.
7. Maximum current 150mA.
8. For Style 4 omit all Network Pair B connections.
9. CC-5 terminals 9-14 are not connected and can be used to tie shields together.
10. Refer to Wiring Specification for MXL, MXL-IQ and MXLV Systems, P/N 315-092772 revision 6 or higher, for additional wiring information.

Figure 3
NIM-1W Network Wiring Diagram

5. When installing the NIM-1W for FSI operation, set the switch to all open (or OFF).

TABLE 3
FSI PROGRAMMING

ADDR	8 7 6 5 4 3 2 1
FSI	O O O O O O O O
O = Open or OFF	

6. When installing the NIM-1W for Air Sampling detection connection, set the switch as follows:

TABLE 4
AIR SAMPLING PROGRAMMING

ADDR	8 7 6 5 4 3 2 1
Air Sampling	X O O O O O O O
O = Open or OFF X = Closed or ON	

After setting the switches, install the NIM-1W into the MOM-4/2 card cage. Make sure that the module is in the card guides and the card edge is firmly seated in the connectors on the MOM-4/2.

CAUTION

At all times handle all plug-in cards with extreme care. When inserting or removing a card, be sure the position of the card is kept at right angles to the MOM-4 board. Otherwise, the plug-in card can damage or displace other components.

ELECTRICAL CONNECTIONS

NIM-1W On An XNET Network

Figure 3 shows the wiring diagram for the NIM-1W on an XNET network. Up to 32 MXL and/or XLS Systems can be connected in the XNET network with an NIM-1W installed in each MXL System. For the highest level of fault protection, install the NIM-1W in the enclosure with the MMB, although this is not necessary. When connecting more than 32 MXL Systems, an REP-1 repeater, a D2300CPS or a D2325CPS is required. Refer to the *REP-1 Installation Instructions*, P/N 315-092686, the *D2300CPS Installation Instructions*, P/N 315-050018 or the *D2325CPS Installation Instructions*, P/N 315-050019, as applicable, for the wiring diagram.

The XNET network can be installed as either Style 4 or Style 7. Figure 3 shows which wires must be added to support Style 7. Style 7 is required in Canada.

Each NIM-1W is shipped with two 120 ohm EOLRs—only two are required for each network pair. Install an EOLR at the ends of each network pair. **Do not install an EOLR at each NIM-1W.** (A simple rule of

thumb for the NIM-1W: an EOLR must be installed where only a single wire lands on a screw terminal.)

Do not T-tap the network wiring. If T-tapping is required, use the REP-1 repeater. Refer to the *REP-1 Installation Instructions*, P/N 315-092686, the *D2300CPS Installation Instructions*, P/N 315-050018 or the *D2325CPS Installation Instructions*, P/N 315-050019, as applicable, for the wiring diagram.

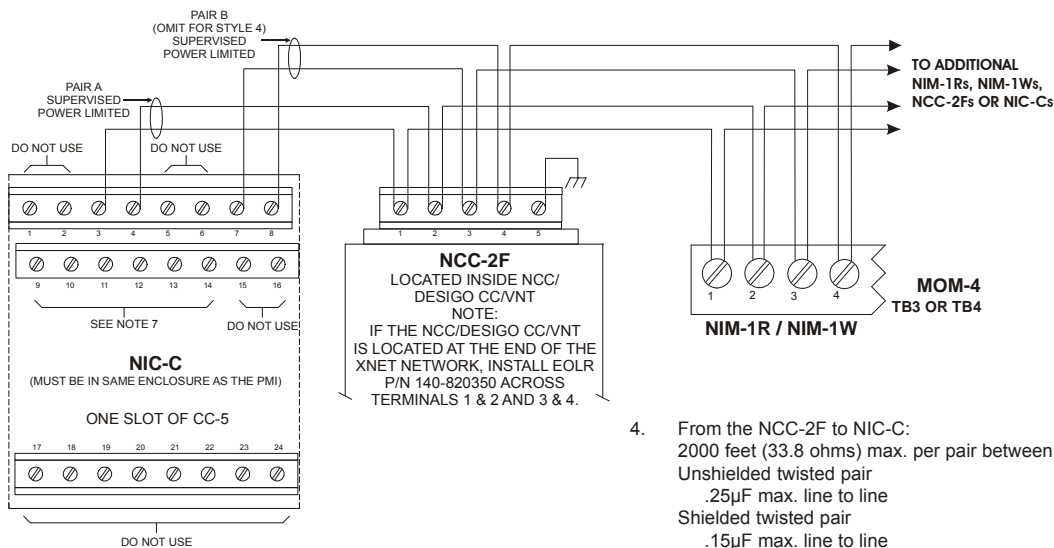
For Style 4 wiring, terminate the secondary network pair (terminals 3 and 4) on each NIM-1W with an EOLR.

Network Command Center (NCC/Desigo CC)

Figure 4 shows the wiring to the NCC/Desigo CC.

To connect the NCC/Desigo CC, observe the following restrictions:

1. Give the NCC/Desigo CC a panel number. (This panel number is in addition to the panel number for the MXL System that the NCC/Desigo CC connects to.)
2. The total number of panels in the XNET must not exceed 64, including the NCC/Desigo CC.



NOTES:

1. No EOLR required for NIC-C.
2. The screw terminals can accommodate one 12-24AWG or two 16-24AWG.
3. From the NCC-2F to NIM-1R, NIM-1W or NCC-2F:
80 Ohms max. per pair.
Unshielded twisted pair - .5µF line to line
Shielded twisted pair - .3µF line to line, .4µF line to shield

4. From the NCC-2F to NIC-C:
2000 feet (33.8 ohms) max. per pair between CC-5s/CC-2s.
Unshielded twisted pair
.25µF max. line to line
Shielded twisted pair
.15µF max. line to line
.2µF max. line to shield
5. Use twisted pair or twisted shielded pair.
6. Terminate shields at one end only.
7. Power limited to NFPA 70 per NEC 760.
8. CC-5 terminals 9 - 14 are not connected and can be used to tie shields together.
9. Positive or negative ground fault detected at $\leq 10K$ ohms on pins 3-4, 7-8 of the NIC-C.
10. Each pair independently supervised.
11. Maximum voltage 8V P-P.
12. Maximum current 75mA during message transmission.

Figure 4
Connecting the NIM-1W to the NCC/Desigo CC and FireFinder-XLS

Foreign System Interface (FSI)

The FSI installs on TB3 or TB4, terminals 1 and 2, of the MOM-4/2 depending on where the NIM-1W is installed, as shown in Figure 5. Use one of the EOLRs provided with the NIM-1W on terminals 1 and 2. This properly terminates the FSI. Use the second EOLR on terminals 3 and 4. **Never use terminals 3 and 4 to connect to the FSI.** Refer to Figure 5 for the polarity of the FSI driver.

If multiple FSI connections are required, up to four NIM-1Ws may be installed in an individual MXL System. In networked systems each MXL can support up to four FSI ports.

For networked systems, each FSI port must be configured as either local or global in the CSG-M. Local FSI ports display information only on the MXL System to which they are connected. Global FSI ports display all events in all MXL Systems. Refer to the *CSG-M Manual*, P/N 315-090381, for further information.

Connection via NIM-1W RS-485 Interface

NIM-W RS485 FSI connection should be wired Style 4 only. The recommended Serial Baud Rate when using NIM-1W RS485 FSI is 19200 bpm. P6 jumper position on the NIM-1W should be set for RS-485 configuration as shown in Figure 1. Refer to Figure 5 for wiring instructions.

NOTES:

1. 18 AWG minimum.
2. 80 ohms maximum per pair.
3. Use shielded twisted pair.
4. Terminate the shield at the NIM-1W enclosure only.
5. Power limited to NFPA 70 per NEC 760.
6. Maximum voltage 8V peak to peak.
7. Maximum current 150mA.
8. Refer to Wiring Specification for MXL, MXL-IQ and MXLV Systems, P/N 315-092772 revision 6 or higher, for additional wiring information.

Connection via NIM-1W/NIM-1M Modem

NIM-1W/NIM-1M modem FSI connection should be wired Style 4 only. P6 jumper position on the NIM-1W should be set for Modem configuration as shown in Figure 2. The recommended Serial Baud Rate when using NIM-1W/NIM-1M Modem FSI is 19200 bpm. Refer to Figure 16 for wiring instructions.

Air Sampling Interface

AnaLASER Interface

The AnaLASER Air Sampling interface connects to the MOM-4/2, TB3 or TB4, terminals 1 and 2, depending on where the NIM-1W is installed (Refer to Figure 7). Up to 31 Air Sampling detectors can be connected to a single NIM-1W.

The ACC-1 requires an RS-485 to RS-232 converter which mounts in the back of the ACC-1 enclosure. The converter model number is AIC-4Z. The AIC-4Z supports from one to four AnaLASER detectors. Refer to the *AIC-4Z Installation Instructions*, P/N 315-093792, for the mounting and configuration of the converter and the ACC-1s.

Complete wiring of the converter as shown in Figure 7 before installing the ACC-1 in the enclosure.

- Place the end-of-line resistors in the locations specified in Figure 7.
- Install the cable P/N IC-12 between the converter and the ACC-1.
- Refer to the *AnaLASER Air Sampling Smoke Detection Manual*, P/N 315-092893, for connection to the AnaLASER detector and power supply, as well as mechanical mounting of the ACC-1.

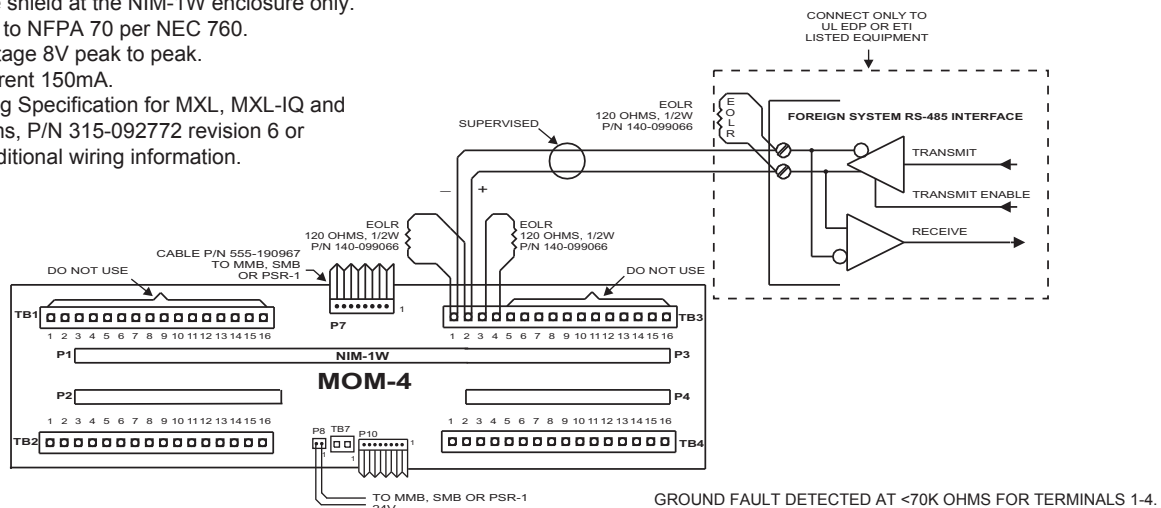


Figure 5
Connecting the NIM-1W (with RS-485 interface) to the FSI

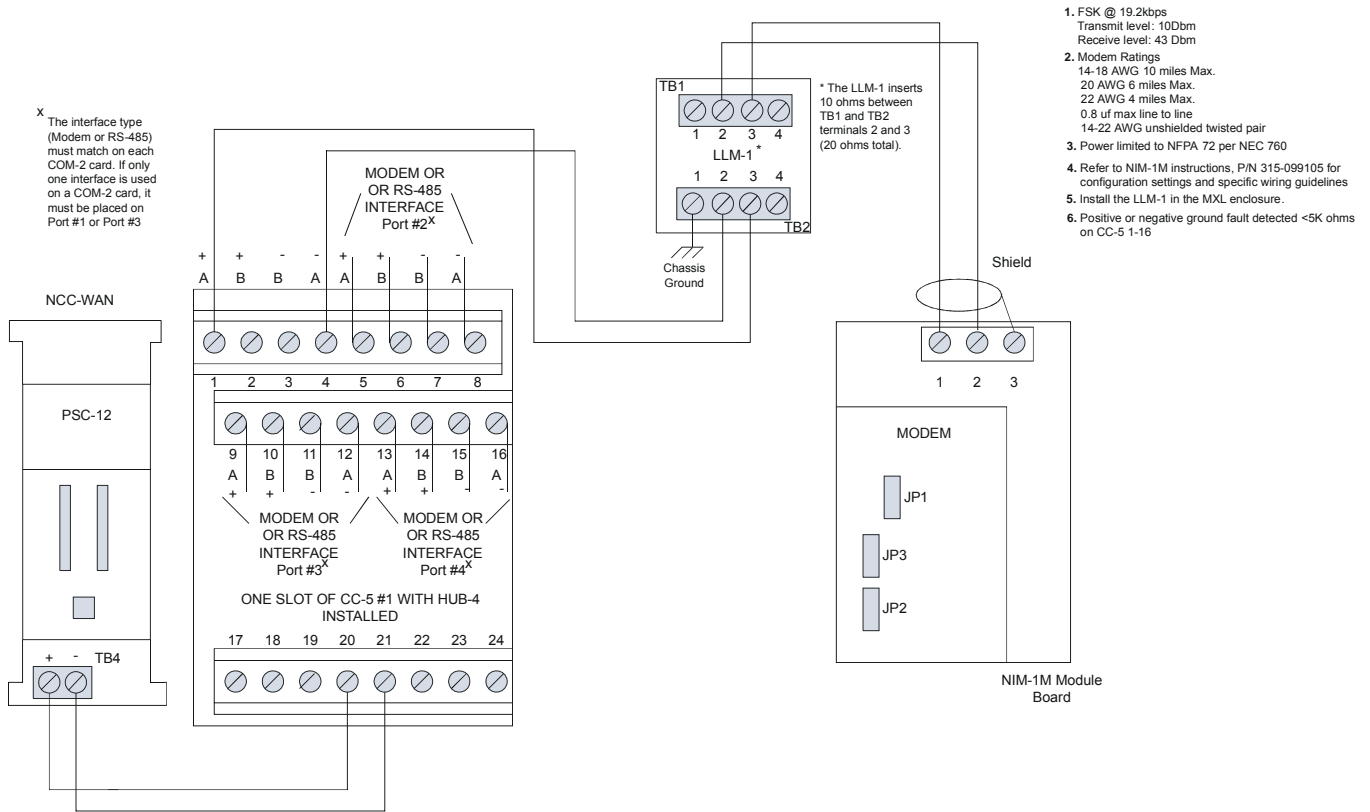


Figure 6
Connecting HUB-4 to NIM-1W with Modem Block

VESDA Interface

The VESDA Air Sampling interface connects to the MOM-4/2, TB3 or TB4, terminals 12-16, depending on where the NIM-1W is installed (Refer to Figure 8). Up to 31 Air Sampling detectors can be connected to a single NIM-1W.

The VESDA/MXL-IQ Intelligent Interface requires a model CPY-HLI which consists of an MXL-IQ/VESDA High Level Interface and a VESDAnet Socket. The CPY-HLI can support up to 31 VESDA detectors utilizing a VESDA network. Refer to the *CPY-HLI Installation Instructions*, P/N 315-099200, for mounting and installation of the CPY-HLI to the VESDA detectors.

Complete wiring of the Intelligent Interface as shown in Figure 8.

- Place the end-of-line resistors in the locations specified in Figure 8.

- Install the 5 leads of the Model CPY-HLICABLE interface cable (P/N 500-699911) to the MOM-4/2 according to the *CPY-HLI Installation Instructions*, P/N 315-099200. (Refer to Figure 8.)
- To connect the CPY-HLI to the VESDA network, refer to the *CPY-HLI Installation Instructions*, P/N 315-099200.

NOTE: VESDA is supported in NIM-1W firmware version 2.0 and higher, SMB ROM version 6.10 and higher and CSG-M version 11.01 and higher.

ELECTRICAL RATINGS

Active 5VDC Module Current	0mA
Active 24VDC Module Current	60mA
Standby 24VDC Module Current	60mA

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 NIM-1W enclosure only.
5. Power limited to NFPA 70 per NEC 760.
6. Maximum voltage 8V peak to peak.
7. Maximum current 150mA.
8. Refer to Wiring Specification for MXL, MXL-IQ and MXLV Systems, P/N 315-092772 revision 6 or higher, for additional wiring information.

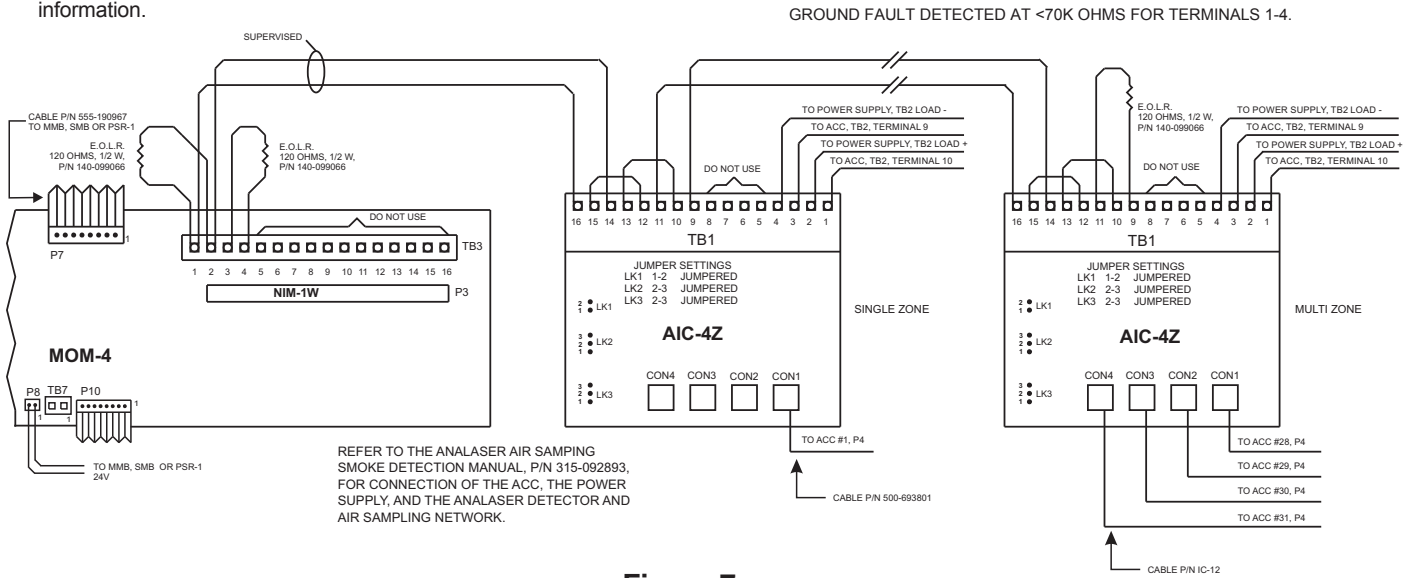
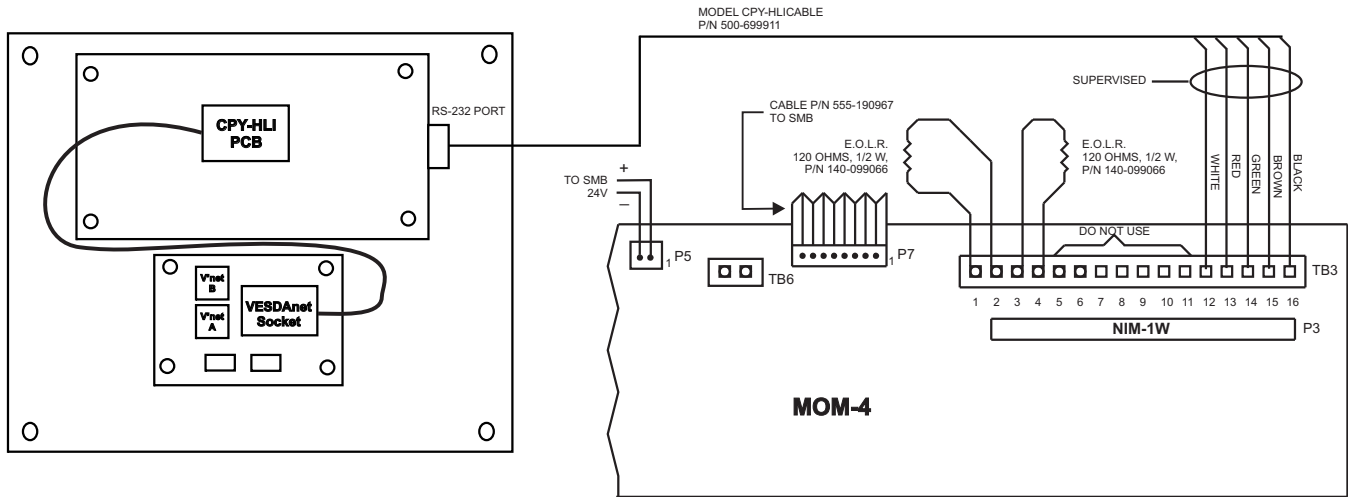


Figure 7
Connecting the NIM-1W to the AnaLASER



MODEL CPY-HLICABLE (P/N 500-699911) Requirements:

1. 18 AWG minimum.
2. Maximum distance between MXL-IQ and CPY-HLI enclosures is 6 feet.
3. Cable must be in rigid conduit and can not leave the room.
4. Shielded cable is not recommended.
5. Power limited to NFPA 70 per NEC Article 760.

REFER TO THE CPY-HLI INSTALLATION INSTRUCTIONS, P/N 315-099200, FOR MOUNTING AND INSTALLATION OF THE MODEL CPY-HLI TO THE VESDA DETECTORS.

REFER TO WIRING SPECIFICATION FOR MXL, MXL-IQ AND MXLV SYSTEMS, P/N 315-092772 REVISION 6 OR HIGHER, FOR ADDITIONAL WIRING INFORMATION.

Figure 8
Connecting the NIM-1W to the CPY-HLI