Manuals+ — User Manuals Simplified.

SIEMENS NIM-1W Network Interface Module Instruction Manual

Installation Instructions
Model NIM-1W Network Interface Module
NETWORK INTERFACE APPLICATIONS

Contents

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 NIM1W 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.
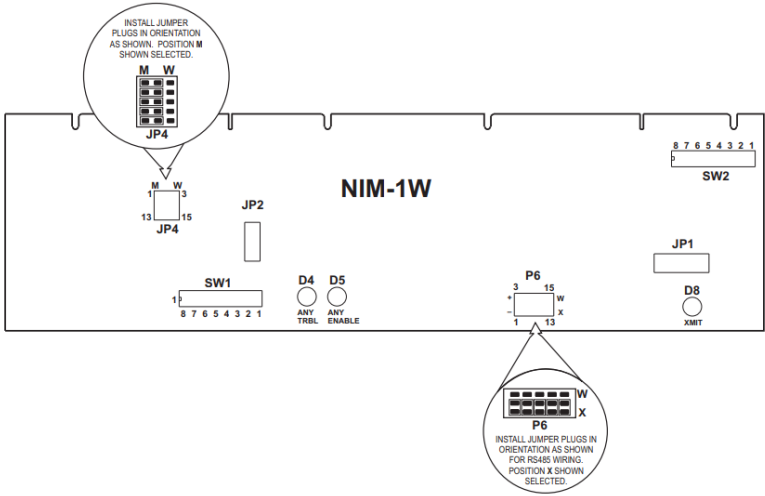

Figure 1
NIM-1W Module Board (RS485 setting)

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.
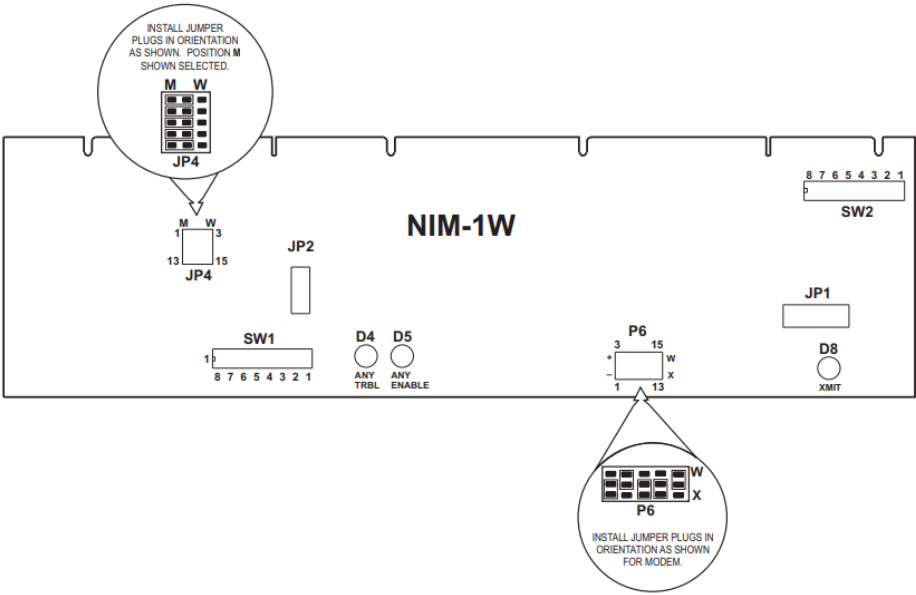

Figure 2
NIM-1W Module Board (modem setting)

TABLE 1

NETWORK ADDRESS PROGRAMMING (SW1)

ADDR	87654321	ADDR	87654321	ADDR	87654321	ADDR	87654321
000	ILLEGAL	064	OXOOOOOO	128	XOOOOOOO	192	XXOOOOOO
001	ILLEGAL	065	OXOOOOOX	129	XOOOOOOX	193	XXOOOOOX
002	ILLEGAL	066	OXOOOOXO	130	XOOOOOXO	194	XXOOOOXO
003	OOOOOOXX	067	OXOOOOXX	131	XOOOOOXX	195	XXOOOOXX
004	OOOOOXOO	068	OXOOOXOO	132	XOOOOXOO	196	XXOOOXOO
005	OOOOOXOX	069	OXOOOXOX	133	XOOOOXOX	197	XXOOOXOX
006	OOOOOXXO	070	OXOOOXXO	134	XOOOOXXO	198	XXOOOXXO
007	OOOOOXXX	071	OXOOOXXX	135	XOOOOXXX	199	XXOOOXXX
008	OOOOXOOO	072	OXOOXOOO	136	XOOOXOOO	200	XXOOXOOO
009	OOOOXOOX	073	OXOOXOOX	137	XOOOXOOX	201	XXOOXOOX
010	OOOOXOXO	074	OXOOXOXO	138	XOOOXOXO	202	XXOOXOXO
011	OOOOXOXX	075	OXOOXOXX	139	XOOOXOXX	203	XXOOXOXX
012	OOOOXXOO	076	OXOOXXOO	140	XOOOXXOO	204	XXOOXXOO
013	OOOOXXOX	077	OXOOXXOX	141	XOOOXXOX	205	XXOOXXOX
014	OOOOXXXO	078	OXOOXXXO	142	XOOOXXXO	206	XXOOXXXO
015	OOOOXXXX	079	OXOOXXXX	143	XOOOXXXX	207	XXOOXXXX
016	OOOXOOOO	080	OXOXOOOO	144	XOOXOOOO	208	XXOXOOOO
017	OOOXOOOX	081	OXOXOOOX	145	XOOXOOOX	209	XXOXOOOX
018	OOOXOOXO	082	OXOXOOXO	146	XOOXOOXO	210	XXOXOOXO
019	OOOXOOXX	083	OXOXOOXX	147	XOOXOOXX	211	XXOXOOXX
020	OOOXOXOO	084	OXOXOXOO	148	XOOXOXOO	212	XXOXOXOO
021	OOOXOXOX	085	OXOXOXOX	149	XOOXOXOX	213	XXOXOXOX
022	OOOXOXXO	086	OXOXOXXO	150	XOOXOXXO	214	XXOXOXXO
023	OOOXOXXX	087	OXOXOXXX	151	XOOXOXXX	215	XXOXOXXX
024	OOOXXOOO	088	OXOXXOOO	152	XOOXXOOO	216	XXOXXOOO
025	OOOXXOOX	089	OXOXXOOX	153	XOOXXOOX	217	XXOXXOOX
026	OOOXXOXO	090	OXOXXOXO	154	XOOXXOXO	218	XXOXXOXO
027	OOOXXOXX	091	OXOXXOXX	155	XOOXXOXX	219	XXOXXOXX

028	OOOXXXOO	092	OXOXXXOO	156	XOOXXXOO	220	XXOXXXOO
029	OOOXXXOX	093	OXOXXXOX	157	XOOXXXOX	221	XXOXXXOX
030	OOOXXXXO	094	OXOXXXXO	158	XOOXXXXO	222	XXOXXXXO
031	OOOXXXXX	095	OXOXXXXX	159	XOOXXXXX	223	XXOXXXXX
032	OOXOOOOO	096	OXXOOOOO	160	XOXOOOOO	224	XXXOOOOO
033	OOXOOOOX	097	OXXOOOOX	161	XOXOOOOX	225	XXXOOOOX
034	OOXOOOXO	098	OXXOOOXO	162	XOXOOOXO	226	XXXOOOXO
035	OOXOOOXX	099	OXXOOOXX	163	XOXOOOXX	227	XXXOOOXX
036	OOXOOXOO	100	OXXOOXOO	164	XOXOOXOO	228	XXXOOXOO
037	OOXOOXOX	101	OXXOOXOX	165	XOXOOXOX	229	XXXOOXOX
038	OOXOOXXO	102	OXXOOXXO	166	XOXOOXXO	230	XXXOOXXO
039	OOXOOXXX	103	OXXOOXXX	167	XOXOOXXX	231	XXXOOXXX
040	OOXOXOOO	104	OXXOXOOO	168	XOXOXOOO	232	XXXOXOOO
041	OOXOXOOX	105	OXXOXOOX	169	XOXOXOOX	233	XXXOXOOX
042	OOXOXOXO	106	OXXOXOXO	170	XOXOXOXO	234	XXXOXOXO
043	OOXOXOXX	107	OXXOXOXX	171	XOXOXOXX	235	XXXOXOXX
044	OOXOXXOO	108	OXXOXXOO	172	XOXOXXOO	236	XXXOXXOO
045	OOXOXXOX	109	OXXOXXOX	173	XOXOXXOX	237	XXXOXXOX
046	OOXOXXXO	110	OXXOXXXO	174	XOXOXXXO	238	XXXOXXXO
047	OOXOXXXX	111	OXXOXXXX	175	XOXOXXXX	239	XXXOXXXX
048	OOXXOOOO	112	OXXXOOOO	176	XOXXOOOO	240	XXXXOOOO
049	OOXXOOOX	113	OXXXOOOX	177	XOXXOOOX	241	XXXXOOOX
050	OOXXOOXO	114	OXXXOOXO	178	XOXXOOXO	242	XXXXOOXO
051	OOXXOOXX	115	OXXXOOXX	179	XOXXOOXX	243	XXXXOOXX
052	OOXXOXOO	116	OXXXOXOO	180	XOXXOXOO	244	XXXXOXOO
053	OOXXOXOX	117	OXXXOXOX	181	XOXXOXOX	245	XXXXOXOX
054	OOXXOXXO	118	OXXXOXXO	182	XOXXOXXO	246	XXXXOXXO
055	OOXXOXXX	119	OXXXOXXX	183	XOXXOXXX	247	XXXXOXXX
056	OOXXXOOO	120	OXXXXOOO	184	XOXXXOOO	248	ILLEGAL
057	OOXXXOOX	121	OXXXXOOX	185	XOXXXOOX	249	ILLEGAL

058	OOXXXOXO	122	OXXXXOXO	186	XOXXXOXO	250	ILLEGAL
059	OOXXXOXX	123	OXXXXOXX	187	XOXXXOXX	251	ILLEGAL
060	OOXXXXOO	124	OXXXXXOO	188	XOXXXXOO	252	ILLEGAL
061	OOXXXXOX	125	OXXXXXOX	189	XOXXXXOX	253	ILLEGAL
062	OOXXXXXO	126	OXXXXXXO	190	XOXXXXXO	254	ILLEGAL
063	OOXXXXXX	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	SOOOOXXO	022	SOOXOXXO	038	SOXOOXXO	054	SOXXOXXO
007	SOOOOXXX	023	SOOXOXXX	039	SOXOOXXX	055	SOXXOXXX
008	SOOOXOOO	024	SOOXXOOO	040	SOXOXOOO	056	SOXXXOOO
009	SOOOXOOX	025	SOOXXOOX	041	SOXOXOOX	057	SOXXXOOX
010	SOOOXOXO	026	SOOXXOXO	042	SOXOXOXO	058	SOXXXOXO
011	SOOOXOXX	027	SOOXXOXX	043	SOXOXOXX	059	SOXXXOXX
012	SOOOXXOO	028	SOOXXXOO	044	SOXOXXOO	060	SOXXXXOO
013	SOOOXXOX	029	SOOXXXOX	045	SOXOXXOX	061	SOXXXXOX
014	SOOOXXXO	030	SOOXXXXO	046	SOXOXXXO	062	SOXXXXXO
015	SOOOXXXX	031	SOOXXXXX	047	SOXOXXXX	063	SOXXXXXX
—	———	—	———	—	———	064	SXOOOOOO
S = Closed selects Style 7 S = Open selects Style 4		O = Open or OFF X = Closed or ON		R = Closed selects AnaLASER 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.
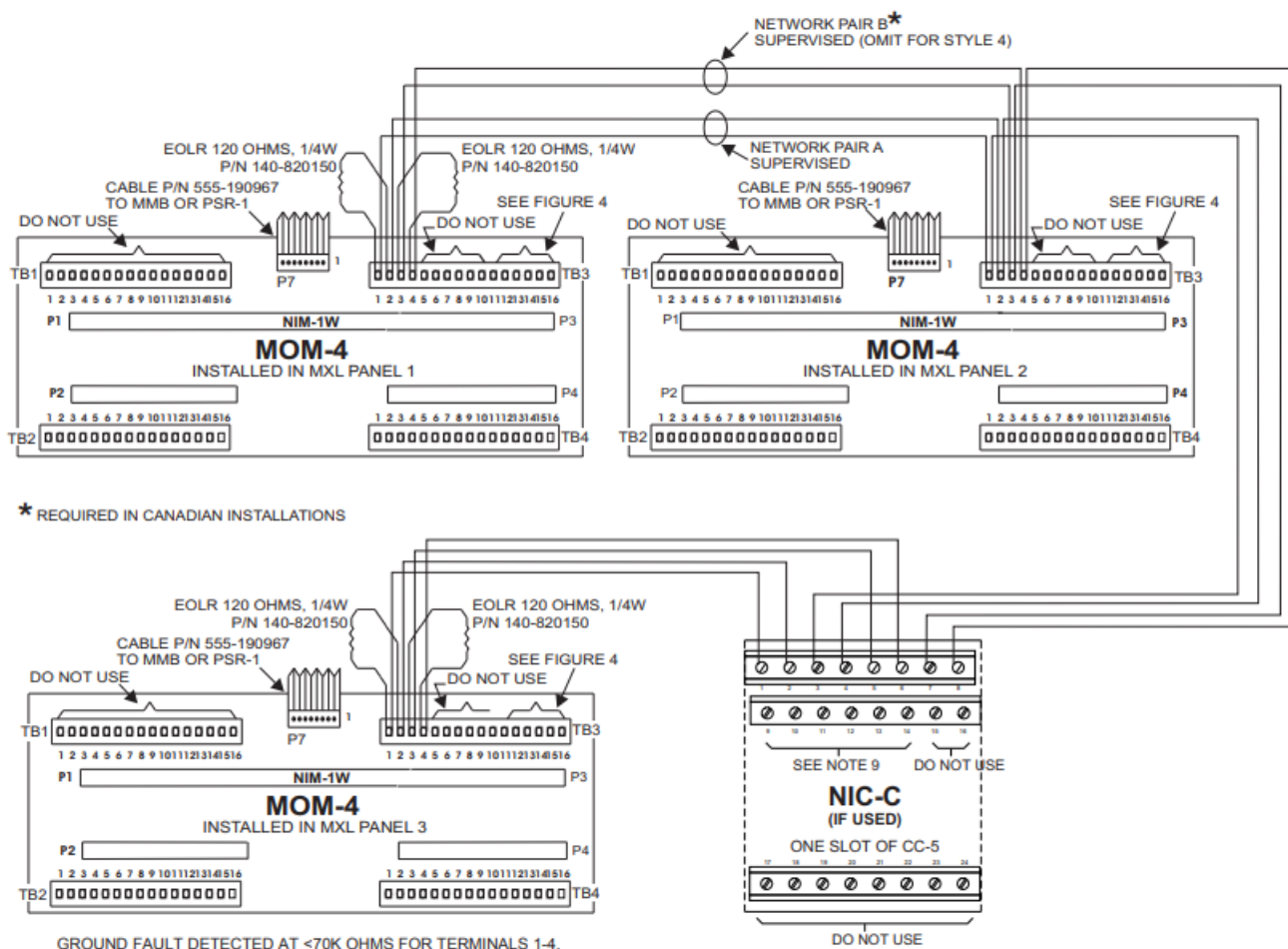
Figure 3
NIM-1W Network Wiring Diagram

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 315092772 revision 6 or higher, for additional wiring information.

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 3
AIR SAMPLING PROGRAMMING

ADDR FSI	8 7 6 5 4 3 2 1
Air Sampling	X O O O O O O O
O = Open or OFF X = Closd 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 315050019, 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.)

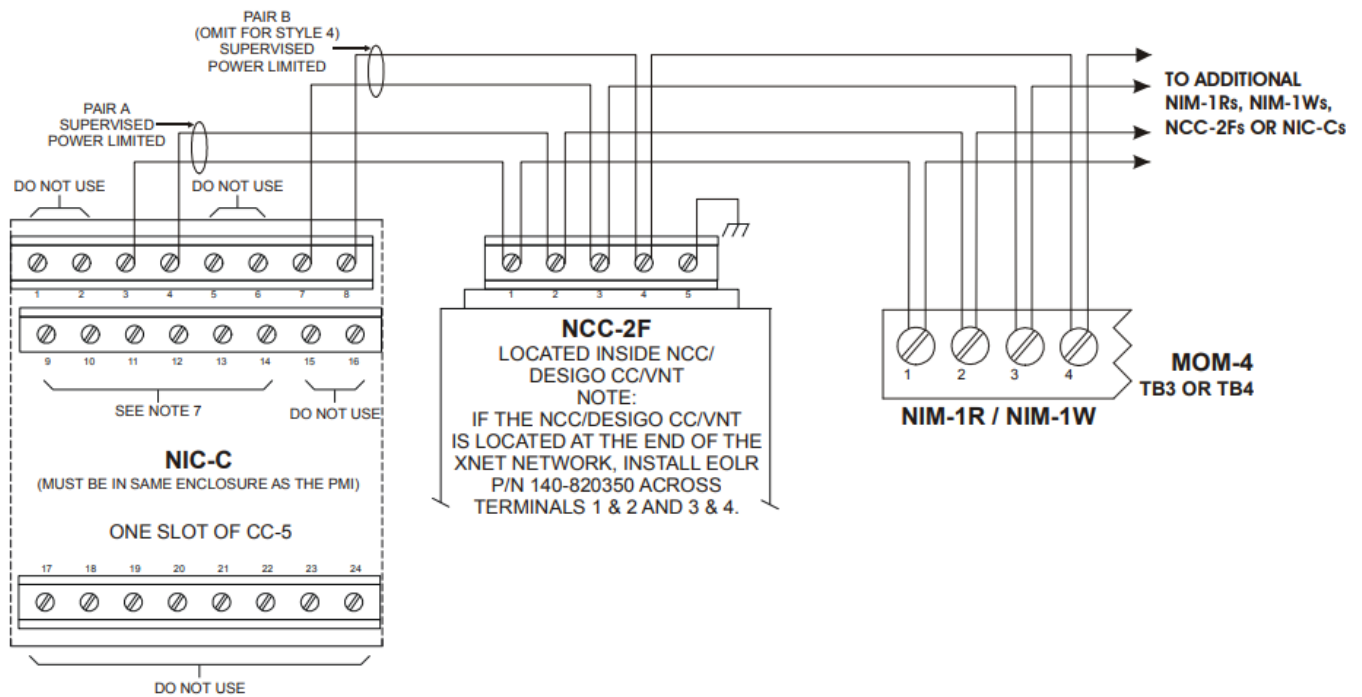2. The total number of panels in the XNET must not exceed 64, including the NCC/Desigo CC.

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

NOTES:

1. No EOLR required for NIC-C.

2. The screw terminals can accommodate one 12-24AWG or two 1624AWG.

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 <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.

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 315093792, 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.
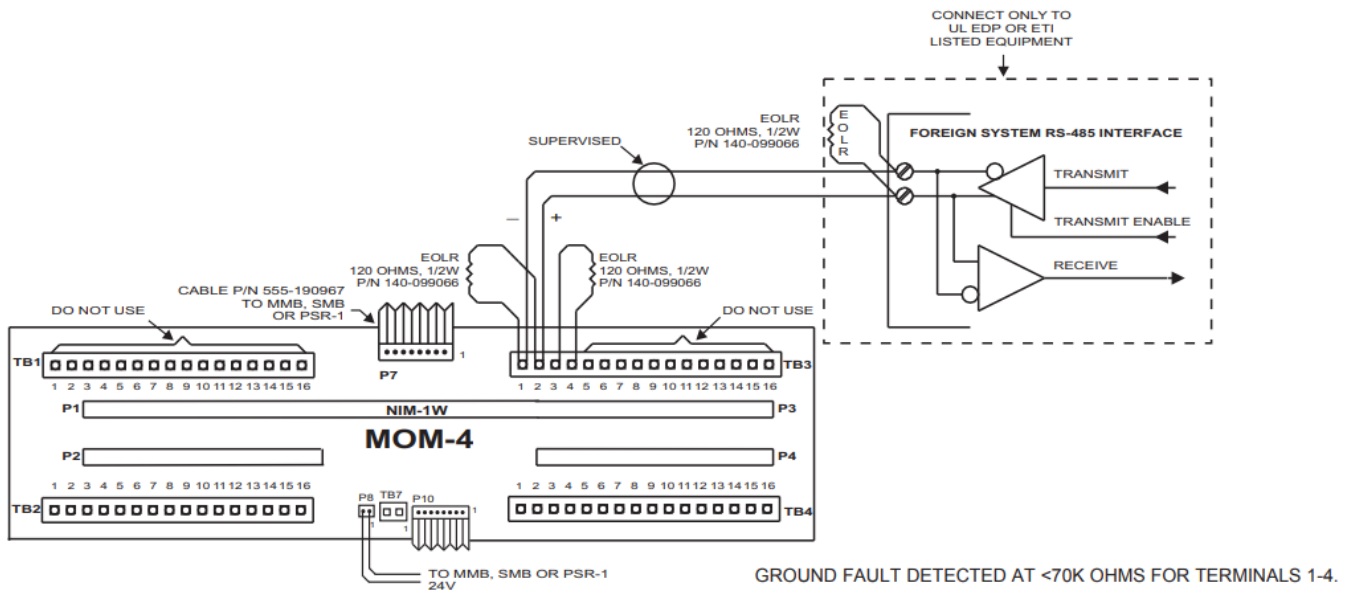
Figure 5
Connecting the NIM-1W (with RS-485 interface) to the FSI

1. FSK @ 19.2kbps

   Transmit level: 10Dbm

   Receive level: 43 Dbm

2. Modem Ratings

   14-18 AWG 10 miles Max.

   20 AWG 6 miles Max.

   22 AWG 4 miles Max.

   0.8 uf max line to line

   14-22 AWG unshielded twisted pair

3. Power limited to NFPA 72 per NEC 760

4. Refer to NIM-1M instructions, P/N 315-099105 for

   configuration settings and specific wiring guidelines

5. Install the LLM-1 in the MXL enclosure.

6. Positive or negative ground fault detected <5K ohms on CC-5 1-16
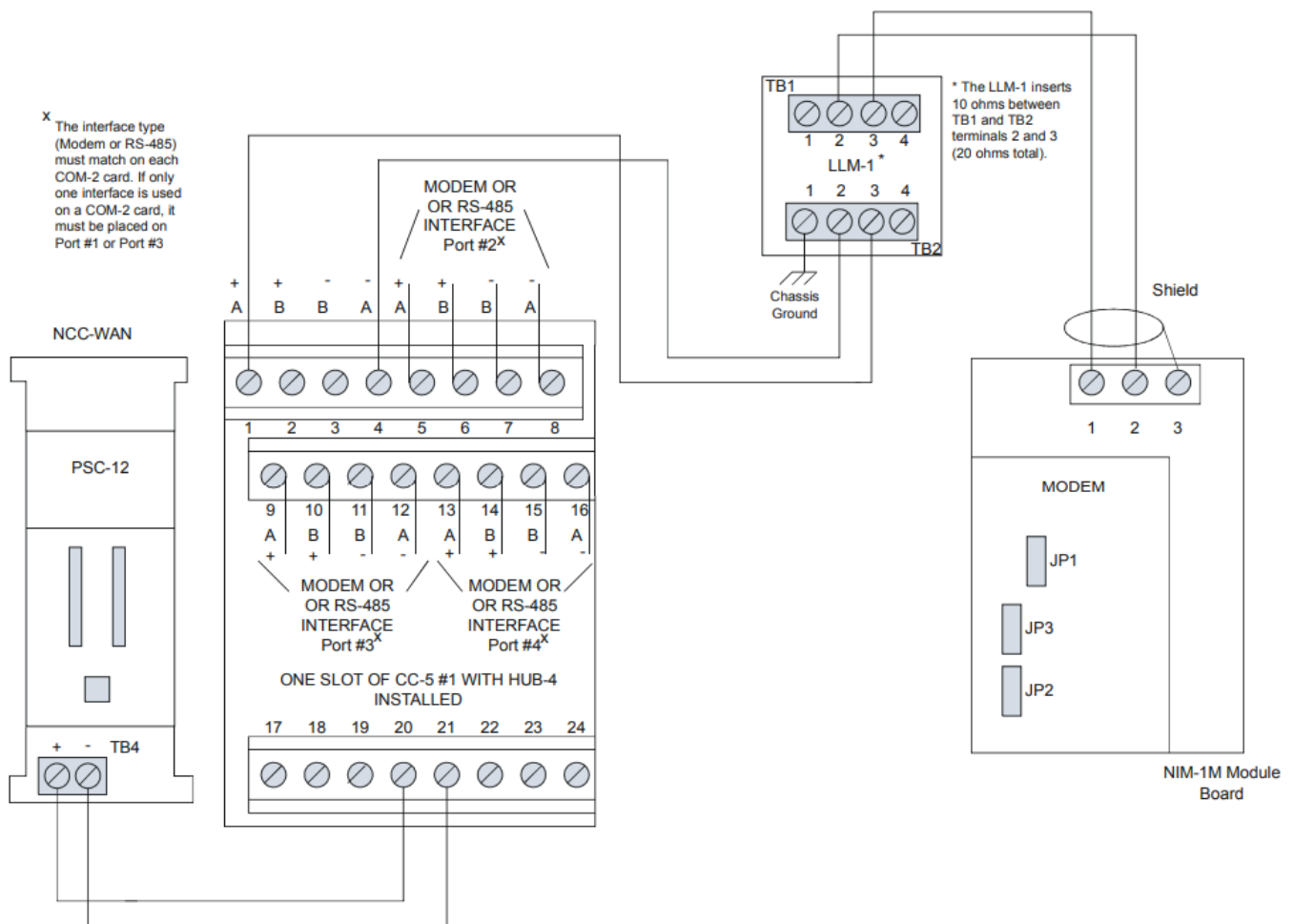
**Figure 6
Connecting HUB-4 to NIM-1W with Modem Block**

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	OmA
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.
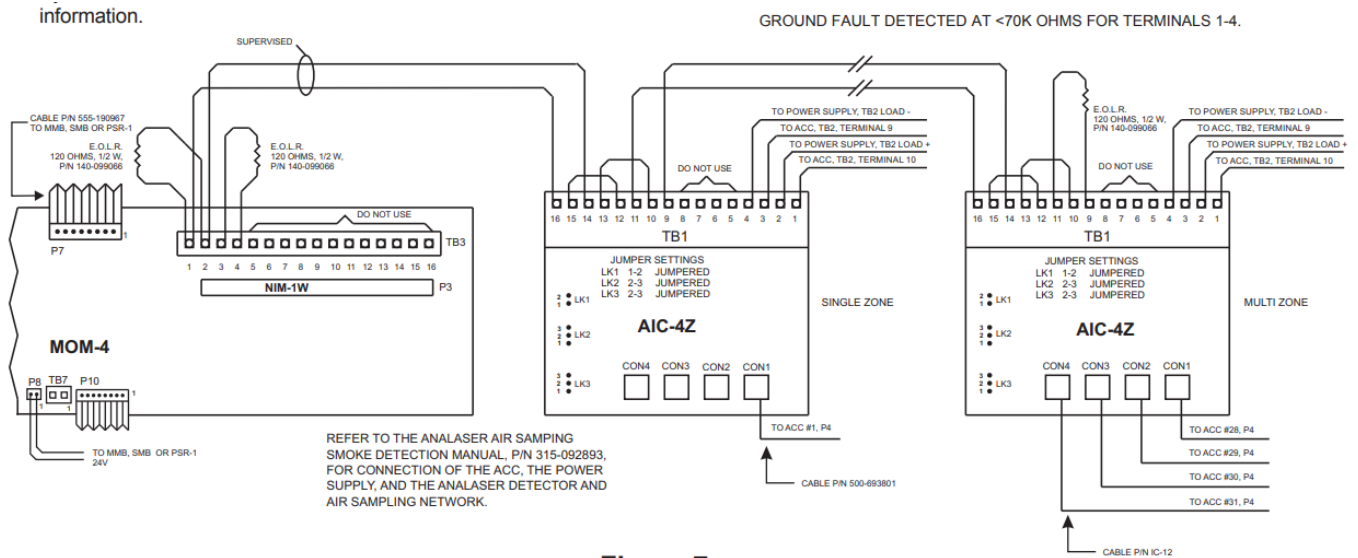
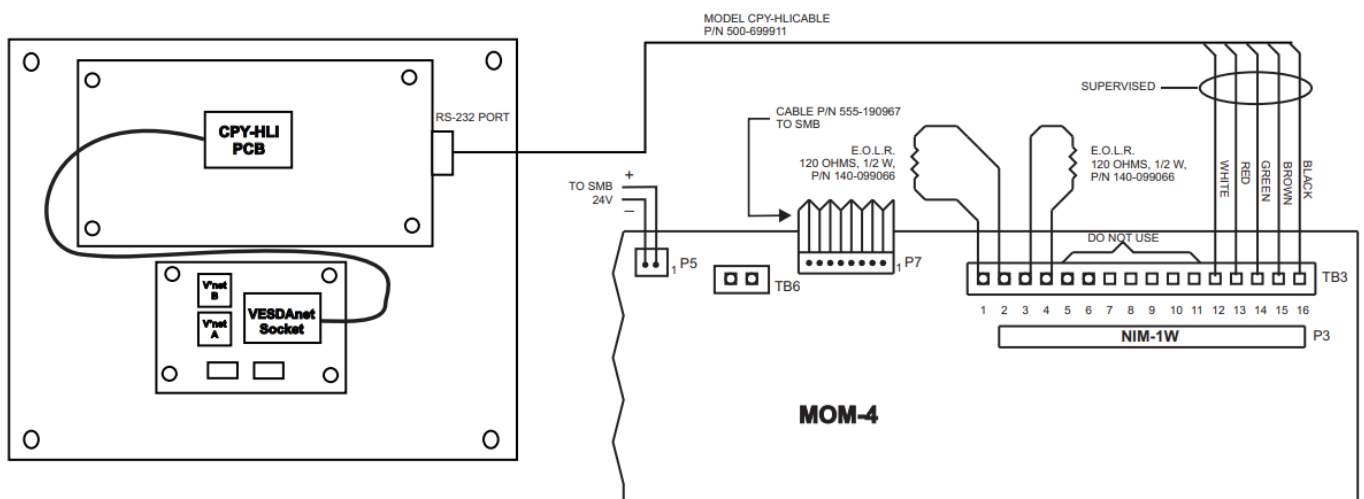**Figure 7**
Connecting the NIM-1W to the AnaLASER

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

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.

Documents / Resources

	SIEMENS NIM-1W Network Interface Module [pdf] Instruction Manual NIM-1W Network Interface Module, NIM-1W, Network Interface Module, Interface Module, Module

References

- 🔥 **Fire Alarm Resources | Download fire alarm documents**

Manuals+,