Manuals+ — User Manuals Simplified.

SIEMENS NIC-C Network Interface Card Instruction Manual

Contents

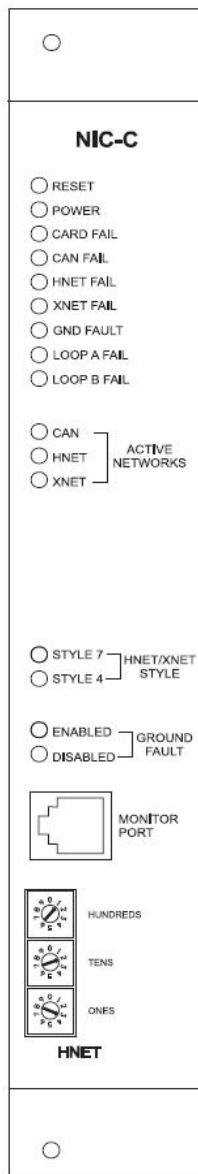## SIEMENS

SIEMENS NIC-C Network Interface Card

INTRODUCTION

The Model NIC-C from Siemens Industry, Inc., is a card that provides network communication within and between enclosures. The network can be wired either Style 4 or Style 7. One NIC-C is required in each enclosure. Each NIC-C occupies one HNET address. The NIC-C supervises the network to insure proper operation. Any faults that are detected by the NIC-C are reported to the NCCNT WAN for annunciation. In addition, the NIC-C has diagnostic LEDs that indicate which faults have been found. Individual LEDs are included for Loop A and Loop B faults, as well as an LED for complete failure of the network. The NIC-C can also be configured to perform ground fault detection on the network.

Features

Based on the system wiring method, the NIC-C isolates short circuit faults to each individual segment of the local network. If a short occurs, only the segment of wire between the two NIC-Cs is affected.
In a Style 4 system the network will be divided into two sections. Communication in each of the sections will continue. For a Style 7 network, the fault will be detected and the network will continue to operate as a single network. See Figure 3a.

NIC-C

○ RESET
○ POWER
○ CARD FAIL
○ CAN FAIL
○ HNET FAIL
○ XNET FAIL
○ GND FAULT
○ LOOP A FAIL
○ LOOP B FAIL

○ CAN
○ HNET   ACTIVE NETWORKS
○ XNET

○ STYLE 7   HNET/XNET STYLE
○ STYLE 4

○ ENABLED   GROUND FAULT
○ DISABLED

MONITOR PORT

HUNDREDS

TENS

ONES

HNET

A network port jack is included for connection of diagnostic tools. This jack is located on the front bezel.
LEDs are visible through the front bezel to indicate the NIC-C configuration. All switch selectable options are displayed here. This allows for easy confirmation of the NIC-C configuration settings without removing the card from the CC-5.

OPERATION

Network supervision is accomplished through passive monitoring of the network signals. No additional bandwidth is required. Each NIC-C continuously monitors the network for activity and reports any problems to the NCCNT WAN. Restoration of faults is dynamic and does not require a system reset.

Controls and Indicators

The front panel of the NIC-C contains one reset switch, fifteen LEDs, one network port and three HNET address switches as shown in Figure 1 A reset switch is located on the top of the front panel. Pushing the reset switch re-initializes the NIC-C operation.
The LEDs follow the reset switch and their functions are defined as follows:

POWER	(Green)	Normally ON. When illuminated, indicates that power for the NIC-C is applied to the card.
CARD FAIL	(Yellow)	Normally OFF. When illuminated, indicates that the card microprocessor has failed.
CAN FAIL	(Yellow)	Normally OFF. Not used in this application.
HNET FAIL	(Yellow)	Normally OFF. When illuminated, indicates that the HNET communication with the NIC-C has terminated and the card goes into degrade mode (applicable only when card resides in the HNET network).
XNET FAIL	(Yellow)	Normally OFF. Not used in this application.
GND FAULT	(Yellow)	Normally OFF. When illuminated, indicates that the NIC-C has detected either a negative or positive ground fault on its network.
LOOP A FAIL	(Yellow)	Normally OFF. When illuminated, indicates that the NIC-C has detected a trouble on Loop A (open circuit or short circuit).
LOOP B FAIL	(Yellow)	Normally OFF. When illuminated, indicates that the NIC-C has detected a trouble on Loop B (open circuit or short circuit).
ACTIVE NETWORKS: CAN	(Green)	Normally OFF. Not used in this application.
ACTIVE NETWORKS: HNET	(Green)	Normally OFF. When illuminated, indicates that the HNET network is enabled.
ACTIVE NETWORKS: XNET	(Green)	Not used in this application.
STYLE 7	(Green)	When illuminated, indicates that the HNET is configured as Style 7 (see Pre-Installation - S3 on page 4).
STYLE 4	(Green)	When illuminated, indicates that the HNET is configured as Style 4 (see Pre-Installation - S3 on page 4).
ENABLED	(Green)	When illuminated, indicates that ground fault detection is enabled (see Pre-Installation - S1 below).
DISABLED	(Green)	When illuminated, indicates that ground fault detection is disabled (see Pre-Installation - S1 below).

Three rotary dial switches at the bottom of the front panel are used to set the HNET network address of the NIC-C.

PRE-INSTALLATION

The following components must be set prior to inserting the card to the CC-5 (refer to Figure 2):

S1, Ground Fault Detection Control: Press the lever down to enable ground fault detection. Move the lever to the up position to disable ground fault detection.
(Refer to Figure 2.)

It is only necessary to enable ground fault detection on one NIC-C in the system. If multiple NIC-Cs have ground fault detection enabled,multiple troubles will be reported to the NCCNT WAN when a ground fault is present.

S3, NIC-C Options:

- **Position 1:** Network Selection – Set this switch to the ON position for HNET. XNET is not used in this application.

- **Position 2:** Network Style -Set to ON for Style 4. Set to OFF for Style 7.
- **Position 3:** CAN Network enable – The CAN network is not used in this application.

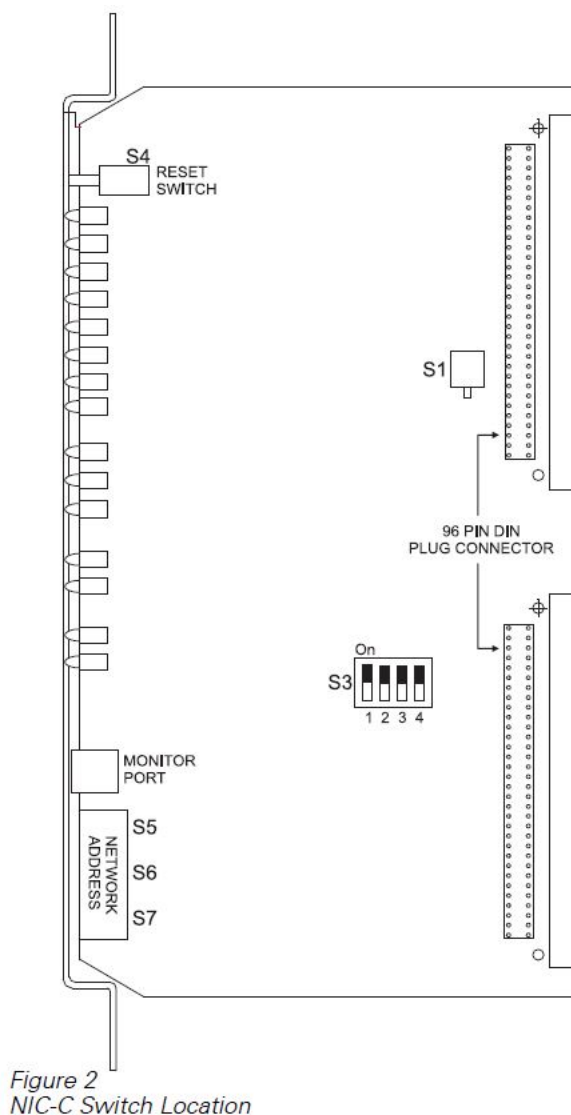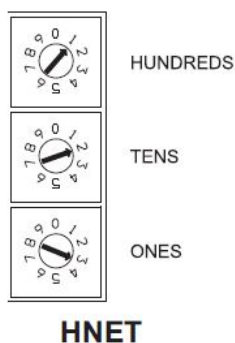 **Position 4:** Future Use -Set to OFF.

Figure 2
NIC-C Switch Location

S4, Reset Switch: Momentarily Closed switch that when pressed will initiate a hard reset to the NIC-C (similar to a cold boot).

HNET

S5, S6, S7, Network Address Switches: Set the three-digit HNET network address for the NIC-C using the three rotary dial address switches located near the bottom of the front panel. (Refer to Figure 1 for the location of the switches.) The address for the NIC-C must be the same as the address selected for it in the NCCNTWAN. To set the address, turn the pointers on each of the three dials to the numbers for the selected address. For example, if the address is 123, set the pointer for the HUNDREDS dial to "1", set the pointer for the TENS dial to "2", and set

the pointer for the ONES dial to "3". The range of allowable addresses is from 001 to 251 (leading zeros must be used). Do not use any address higher than 251.

WIRING

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

To Connect External Wiring

1. Loosen the screw of the terminal by turning it counterclockwise.
2. Insert the wire into the side of the terminal block
3. Tighten the screw of the terminal block by turning it clockwise.

The NIC-C supports Style 4 and Style 7 wiring.
The screw terminals can accommodate one 12 -24 AWG or two 16-24 AWG.

NOTES:

1. 24 AWG min., 12 AWG max.
2. 80 ohms max per pair between CC-5s.
3. Use twisted pair or shielded twisted pair.
4. Terminate the shield at one and only one NCC-1F or NIC-C.
5. Power Limited to NFPA 70 per NEC 760.
6. Maximum voltage 8V P-P.
7. Maximum current 75mA.
8. Each pair independently supervised.
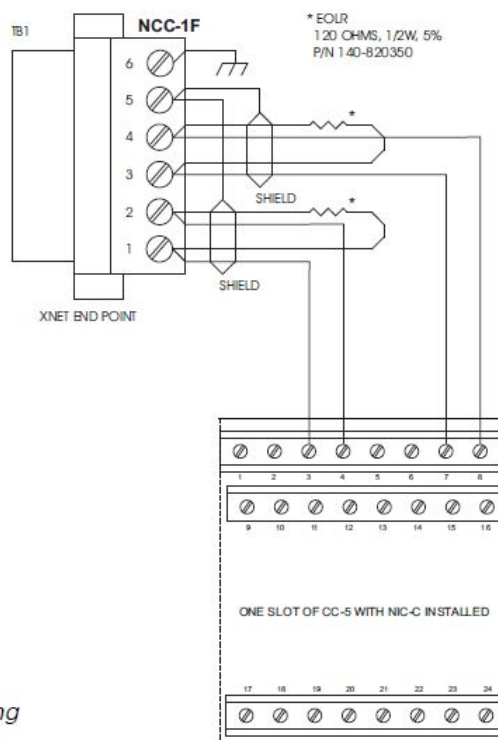9. Positive or negative ground fault detected at <80K ohms on CC-5 pins 3-4, 7-8.

Figure 3
NIC-C To NCC-1F Wiring

NOTES:

1. 24 AWG min., 12 AWG max.

2. 80 ohms max per pair between CC-5s.

3. Use twisted pair or shielded twisted pair.

4. Terminate the shield at one and only one NCC-1F or NIC-C.

5. Power Limited to NFPA 70 per NEC 760.

6. Maximum voltage 8V P-P.

7. Maximum current 75mA.

8. Each pair independently supervised.

9. The NIC-C provides an electrical repeater for each HNET pair. Be sure to connect the pairs following the proper polarity. Do not cross the A and B pairs.

   Removing the NIC-C from the CC-5 will break the network. Removing power from the NIC-C does not break the network.

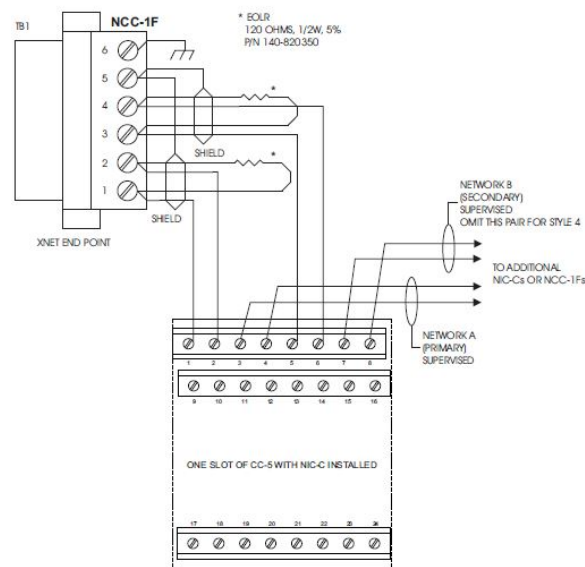10. Positive or negative ground fault detected at <80K ohms on CC-5 pins 1-8.

Figure 3a
NIC-C Used As A Repeater

INSTALLATION

The NIC-C plugs perpendicularly into one slot in the CC-5 card-cage via two 96-pin DIN connectors and can occupy any slot in the card cage. (Refer to Figure 4.)

- Insert the NIC-C card into the card guides rightside up (lettering on the front panel is legible)
- Slide the card in until the card edge connectors contact the receptacles on the motherboard.
- Verify that the DIN connectors of the card and the cardcage aligned properly. The card can only plug in one direction to the card cage, if it does not align, DO NOT FORCE the card.
- Place thumbs on the front panel adjacent to the captive screws and gently apply even pressure on the card until the connectors seat in the receptacles on the motherboard.
- Secure with the captive screws.
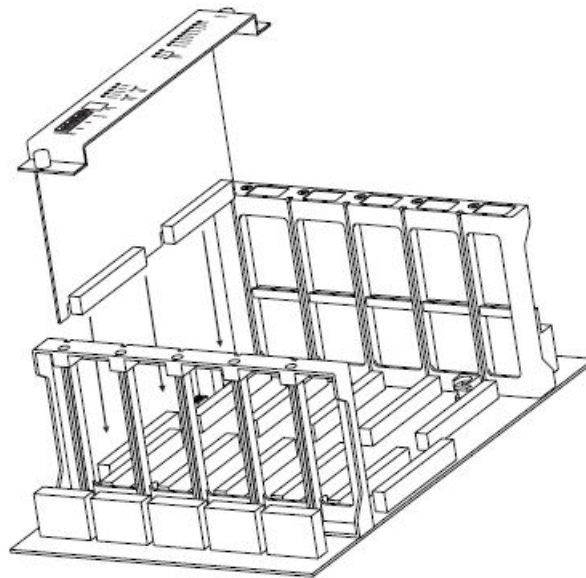- Power up the system and verify that the NIC-C power LED turns ON.

Figure 4
Installing The NIC-C

SPARE EQUIPMENT

A minimum of one spare NIC-C per NCCNT WAN system is recommended.
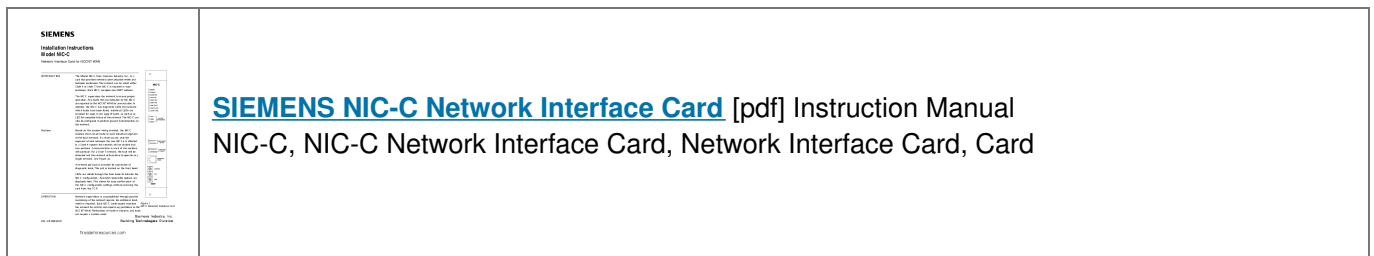
ELECTRICAL RATINGS

Input Power	
24V Back Plane Current	120mA
Screw Terminal 24V Current	0
6.2V Back Plane Current	0
24V Standby Current	120mA
Output Power	
Each HNET Network Pair	8V peak to peak max.
	75mA max. (during message transmission)

firealarmresources.com

Documents / Resources

SIEMENS NIC-C Network Interface Card [pdf] Instruction Manual
NIC-C, NIC-C Network Interface Card, Network Interface Card, Card

References

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