POTTER
The Symbol of Protection

INSTALLATION MANUAL: NCF-1000 NETWORK CARD FIBER

NOTICE TO THE INSTALLER

This manual provides an overview and the installation instructions for the NCF-1000 module.
All terminals are power limited and should be wired in accordance with the requirements of NFPA 70 (NEC) and NFPA 72 (National Fire Alarm Code). Failure to follow the wiring diagrams in the following pages will cause the system to not operate as intended. For further information, refer to the control panel installation instructions.
The module shall only be installed with listed control panels. Refer to the control panel installation manual for proper system operation.

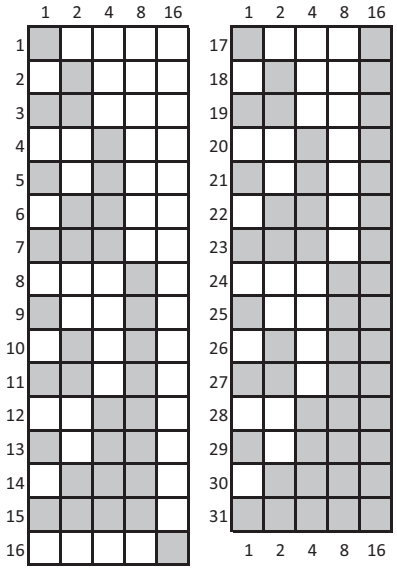
1. DESCRIPTION

The NCF-1000 Network Card Fiber is used to network the fire alarm panels using fiber optic cable. The NCF-1000 allows the user to install SFP (small form-factor pluggable) modules to utilize either single mode or multi-mode fiber. It is fully supervised and is capable of both Class B and Class A operation. The NCF-1000 may be mounted in either the control panel cabinet, the PSN-1000/E, the AE-2, AE-8 or AE-14. The connection between the FACP and the module shall be limited to 20 feet and enclosed in conduit or equivalently protected against mechanical injury. Each card is mounted to the exclusive Stacker Bracket for secure and accessible mounting. A maximum of 31 NCF-1000s can be installed per panel with a maximum of 200 panels per network.

2. SETTING THE ADDRESS

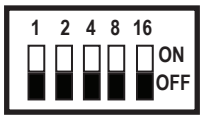
Each P-Link device has a ***five (5) position dip switch*** (S1 shown in Figure 2) which is used to program the device address ranging from one (1) to thirty-one (31). The table below may be used to set dip switches when addressing any P-Link module:

FIGURE 1. DIP SWITCH SETTINGS TABLE (ADDRESSES 1–31)



Note: Each ***"gray" box*** indicates that the dip switch is ***"On,"*** and each ***"white" box*** indicates ***"Off."***
The examples shown below illustrate a P-Link's dip switch settings: the 1st example shows a P-Link module *not addressed* where all dip switch settings are in the *default "Off" position*, the 2nd illustrates an *addressed P-Link module* via the dip switch settings.

FIGURE 2. EXAMPLES OF P-LINK MODULE SHOWING DEFAULT DIP SWITCH SETTING (UNADDRESSED) & ADDRESSED



All dip switches are shown in the "Off" position.

Example shows this P-Link module address = 10. Dip switches #2 & 8 are in the "On" position.

Before connecting a device to the RS-485 connection, take the following precautions to prevent potential damage to the RS-485 connection.

- Power to the RS-485 connection is removed.
- Field wiring on module is correctly installed.
- Field wiring has no open or short circuits.

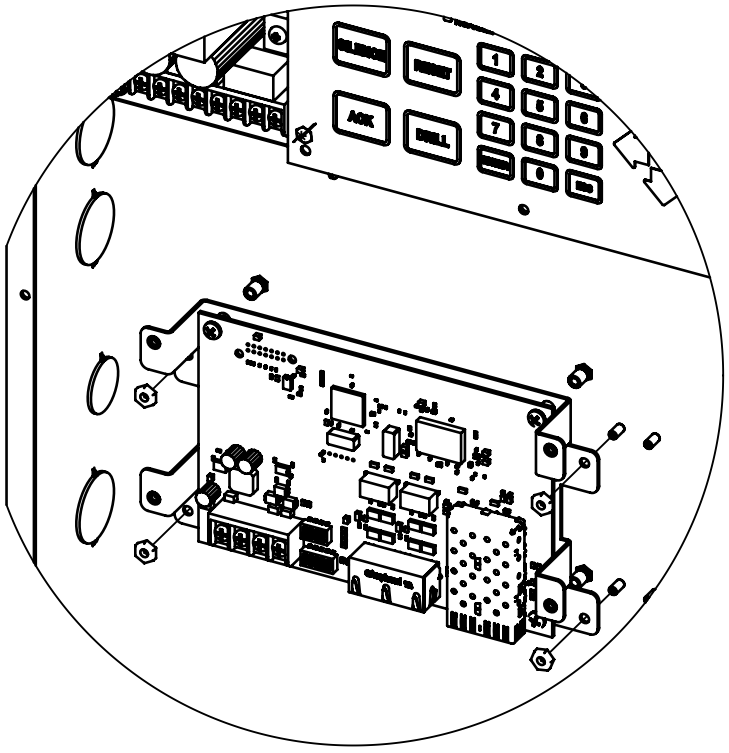
3. TECHNICAL SPECIFICATIONS

Standby Current	95 mA
Alarm Current	95 mA
Operating Temperature Range	32° to 120°F (0° to 49° C)
Operating Humidity Range	10%-93% (non-condensing)
Operating Voltage range	24 VDC
Max no. of NCF-1000	31
Dimensions (WxHxD)	4" x 6" x 1 5/8"
Max Wire Length PLINK Wiring	6500 ft
Wire Gauge	12 AWG - 18 AWG

4. INSTALLATION

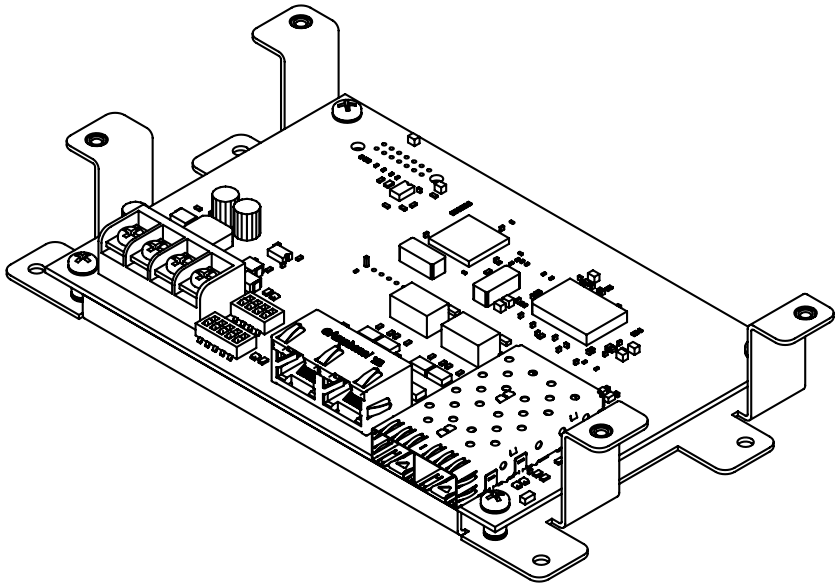
The NCF-1000 is connected to the fire control panels using a 4-wire RS-485 connection and Ethernet cable that connects to the panel's P-Comm port. The connection is power limited and supervised.

FIGURE 3. NCF-1000 MODULE



SFP (small form-factor pluggable) modules are installed for either multi-mode or single mode fiber installations. Potter part number 3992790 can be used for multi-mode installations. 3992790 utilizes 62.5/125-micron multi-mode fiber optic cable. It tolerates up to 10 db of signal loss. Potter part number 3992791 can be used to for single mode installations. 3992791 utilizes 9/125-micron single mode fiber optic cable. It tolerates up to 12 db of signal loss.

FIGURE 4. NCF-1000 MODULE TERMINALS

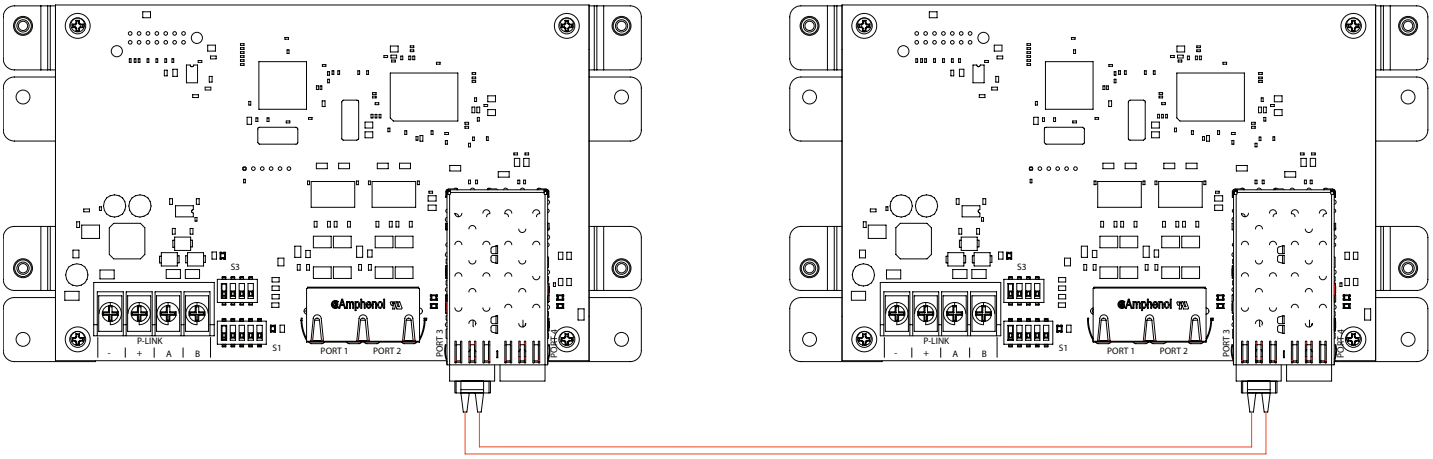


The NCF-1000 has a four (4) position dip switch (S3) that is used to set the configuration settings for the network card. S3 settings are shown in the wiring examples on the following pages

Note: Each "***gray***" box indicates that the dip switch is "***On***," and each "***white***" box indicates "***Off***."

5. WIRING EXAMPLES

FIGURE 5. FIBER TERMINATION



2 strands of fiber required with LC Duplex Connectors at each port on NCF-1000 card.
Fiber strand connections must cross over from left side to right side of connectors (RX to TX)

FIGURE 6. CLASS B FIBER

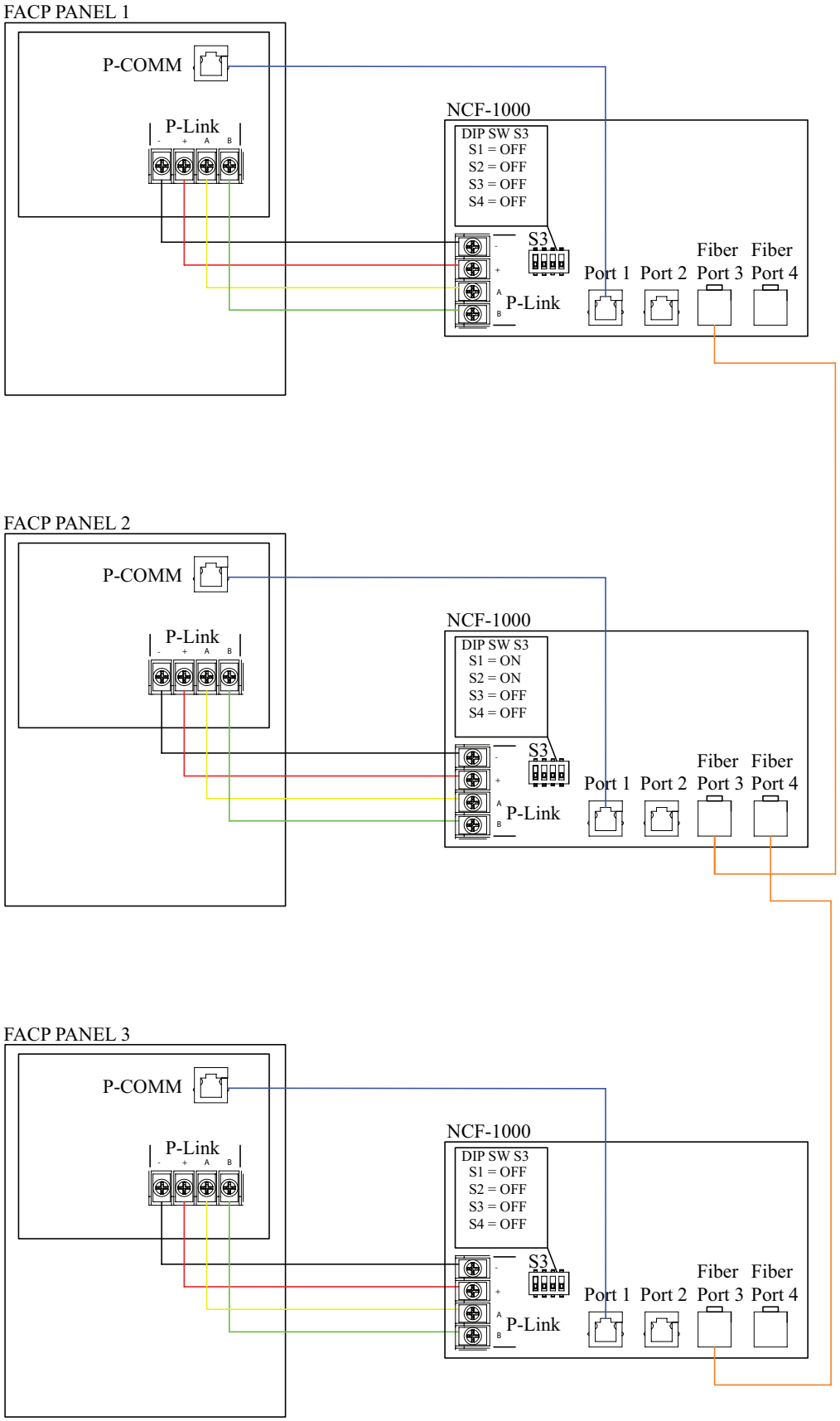
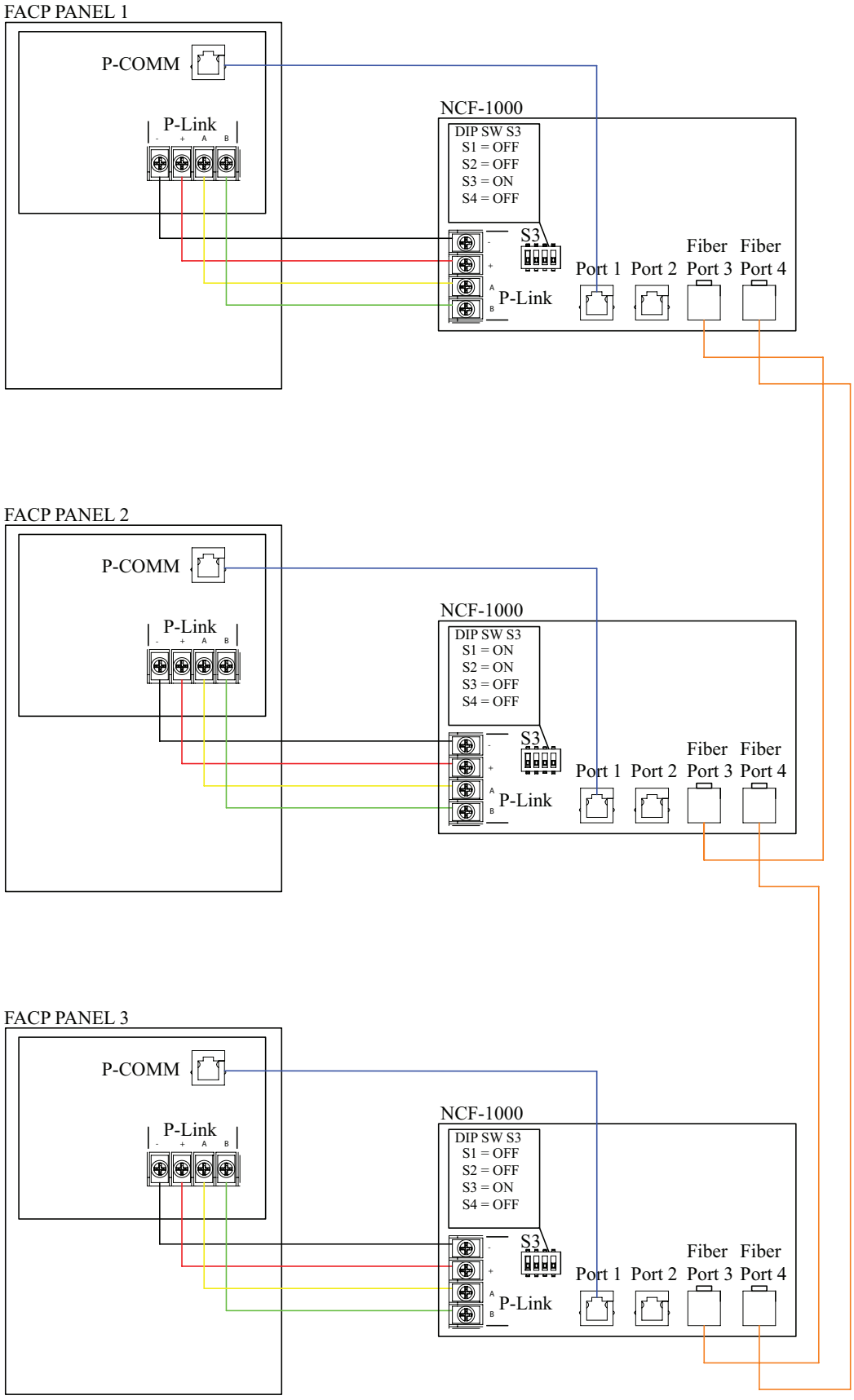


FIGURE 7. CLASS A FIBER WITH RETURN



NOTES:

- RS-485 wiring style supports class A and class B.
- RS-485 is power limited.
- Wiring for terminals (A, B) and (+, -) are supervised.
- All wiring is between #12 (max.) And #18 (min.).
- Wire preparation – strip all wires 1/4 inch from their edges as shown here:
  – Stripping too much insulation may cause a ground fault.
  – Stripping too little may cause a poor connection and subsequently an open circuit.

These instructions do not purport to cover all the details or variations in the equipment described, nor provide for every possible contingency to be met in connection with installation, operation and maintenance.

Specifications subject to change without prior notification.

For Technical Assistance contact Potter Electric Signal Company at 866-956-1211.

Actual performance is based on proper application of the product by a qualified professional.

Should further information be desired or should particular problems arise, which are not covered sufficiently for the purchaser's purpose, the matter should be referred to a distributor in your region.