

# NCM-W, NCM-F

## ONYX® Series Network Communications Modules



Network Systems

### General

The **Network Communications Module (NCM)** provides NOTIFIER Intelligent Fire Alarm Control Panels, and **NCA** and **NCA-2** Network Control Annunciators with a means to connect to **NOTI•FIRE•NET™**. Two types of NCM are available: **NCM-W** for connecting nodes with twisted-pair wire, and **NCM-F** for connecting nodes with fiber-optic cable.

**NOTE:** Do not mix NCM and High Speed (HS) NCM on the same system.

### NCM-W Features

- Supports twisted-pair wire medium.
- NFPA Style 4 (Class B) operation or NFPA Style 7 (Class A) operation.
- Two programmable data thresholds.
- Transformer coupling provides electrical isolation between nodes.
- Pluggable terminal wiring with strain relief.
- Pluggable service connector (feeds signal directly through) in the event that power must be removed from a node.
- 312.5 Kbaud transmission rate.
- Data is regenerated at each node.
- Two network ports to allow simultaneous connection to fire alarm control panel and to programming computer.
- Enables software and database upload/download over **NOTI•FIRE•NET™**.
- Repeaters are available to increase signal.
- Repeaters may be utilized to switch media type.
- Up to 3,000 feet (914.4 m) between nodes in a point-to-point fashion (actual distance varies with wire quality).

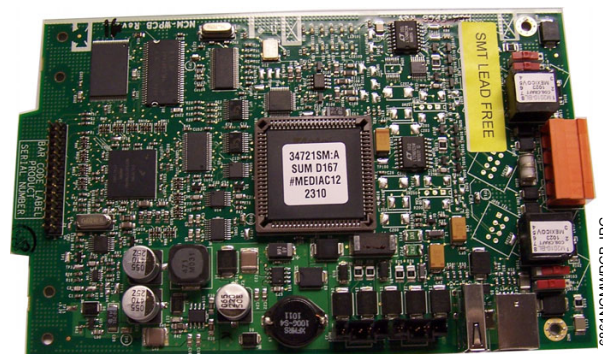
**NCM-W Interconnections:** When wiring consecutive NCM-W boards, wiring may enter or exit at Port A or Port B. NCM-W port-to-port wiring is not polarity sensitive; use of Port A or Port B is arbitrary. An NCM-W may be connected to any of the following devices: **MIB-W**, **MIB-WF**, **NAM-232W**, **NCM-W** (in another panel), **NCS-W** network connection, **RPT-W**, **RPT-WF**.

**NCM-W Switch Functions:** The NCM-W provides two sets of switches to simplify network setup. Enable **ground fault detection** by setting "ON" switch SW103 (Channel A); switch SW101 (Channel B). Activate **on-board end-of-line resistors** by setting "ON" switch SW100 (Channel A); switch 102 (Channel B). **NOTE:** Correct configuration is dependent on network design; refer to the **NOTI•FIRE•NET™** manual.

For further information and diagrams, refer to the *NCM Installation Document*, 51533.

### NCM-F Features

- Supports fiber-optic medium.
- NFPA Style 4 (Class B) or Style 7 (Class A) operation.
- Data is immune to all environmental noise.
- Optical isolation prevents ground loops.
- **NOTI•FIRE•NET™** fiber-optic medium.
- Fiber type: 62.5/125 micrometers (multimode); or 50/125 micrometers (multimode).



NCM-W

- Maximum attenuation is 8 dB with 62.5/125  $\mu\text{m}$  fiber and 4.2 dB with 50/125  $\mu\text{m}$  fiber.
- Wavelength (1): 820 nanometers (use standard 850 nm fiber).
- Connectors: ST® style.
- 312.5 Kbaud transmission rate.
- Data is regenerated at each node.
- Two network ports to allow simultaneous connection to fire alarm control panel and to programming computer.
- Enables software and database upload/download over **NOTI•FIRE•NET™**.
- Repeaters are available to increase signal.
- Repeaters may be utilized to switch media type.
- Up to 3,000 feet (914.4 m) between nodes in a point-to-point fashion (actual distance varies with wire quality).

**NCM-F Interconnections:** When wiring consecutive nodes/repeaters, fiber cable must exit one board on Transmit (TX) and enter the next node/repeater on Receive (RX). The fiber-optic pair (RX, TX) from Port A of one node/repeater may be connected to either Port A or Port B of another node/repeater. An NCM-F may be connected to any of the following devices: **MIB-F**, **MIB-WF**, **NAM-232F**, another **NCM-F**, **NCS-F** network connection, **RPT-F**, **RPT-WF**.

### Common Specifications

**Temperature and humidity ranges:** This system meets NFPA requirements for operation at 0°C to 49°C (32°F to 120°F); and at a relative humidity (noncondensing) of 85% at 30°C (86°F) per NFPA, and 93%  $\pm$  2% at 32°C  $\pm$  2°C (89.6°F  $\pm$  1.1°F) per ULC. However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and all peripherals be installed in an environment with a nominal room temperature of 15°C to 27°C (60°F to 80°F).

Power supply: 24 VDC @ 110 mA.

## Mixing Wire and Fiber on the Same Network

In some networks, it may be necessary to mix twisted-pair wire and fiber-optic cable. There are two solutions:

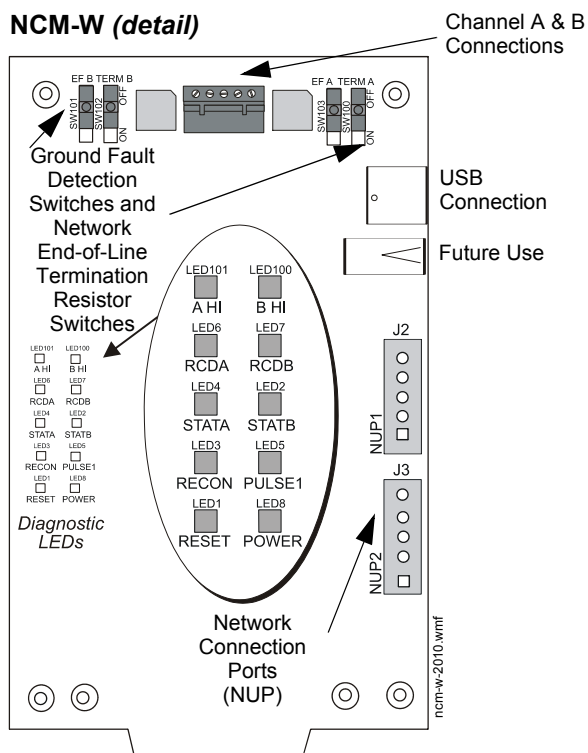
- **In any network**, an RPT-WF may be used as an interface between wire and fiber.
- **In a network that uses an AFP1010 or AM2020**, a MIB-WF may be used as the interface between wire and fiber.

## Mounting

Both NCM-W and NCM-F can be installed in any standard chassis such as the CHS-4L, CHS-M2, CHS-M3 or CHS-4N (see panel sheets). Additionally, the NCM-W can be door-mounted on the ADP-4B dress panel on a single-space blank plate (BMP-1) for mounting in an CAB-4 Series cabinet.

## Diagnostic LED Indicators

**A HI (green)**: Illuminates to indicate the NCM-W Port A is set for high threshold (*NCM-W only*). **B HI (green)**: Illuminates to indicate the NCM-W Port B is set for high threshold (*NCM-W only*). **RCD A (green)**: Illuminates when the NCM is receiving data from **NOTI•FIRE•NET™** on Port A. **RCD B (green)**: Illuminates when the NCM is receiving data from **NOTI•FIRE•NET™** on Port B. **STATA (yellow)**: Illuminates when the NCM has not received valid data from **NOTI•FIRE•NET™** on Port A for at least 16 seconds. **STATB (yellow)**: Illuminates when the NCM has not received valid data from **NOTI•FIRE•NET™** on Port B for at least 16 seconds. **RECON (yellow)**: Illuminates when a reconfiguration on **NOTI•FIRE•NET™** is in progress. **PULSE (green)**: Illuminates when the NCM is transmitting **NOTI•FIRE•NET™** is in progress. **RESET (yellow)**: Illuminates when the microcontroller fails. **POWER (green)**: Illuminates when +5 VDC is available.



## Agency Listings and Approvals

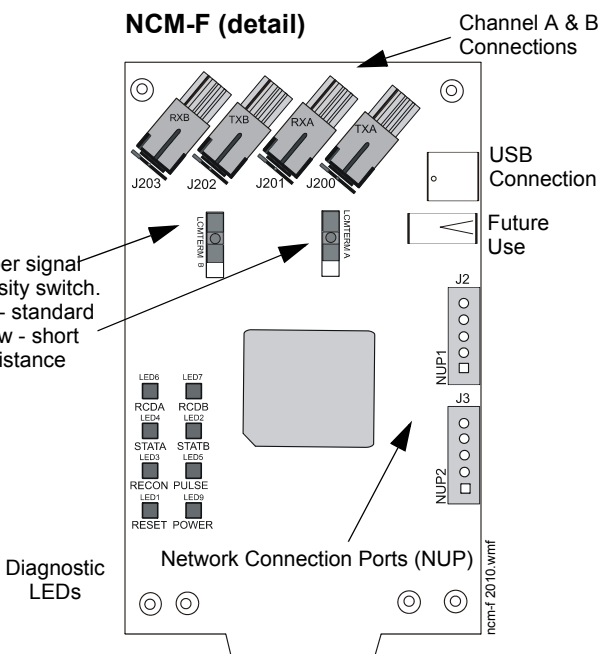
The following listings and approvals apply to the NCM. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** S635
- **ULC Listed:** S635
- **CSFM:** 7165-0028:0214, 7165-0028:0224, 7165-0028:0243
- **FM approved**
- **MEA approved**
- **FDNY:** COA#6061, COA#6065

## Product Line Information

**NCM-W:** Network Communications Module, twisted-pair wire interface.

**NCM-F:** Network Communications Module, fiber-optic cable interface.



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For more information, contact Notifier. Phone: (203) 484-7161, FAX: (203) 484-7118.  
www.notifier.com