

TM-4

ONYX® Series

Transmitter Modules



Peripheral Devices

General

The **TM-4 Transmitter Module** provides NOTIFIER's **NFS2-3030**, **NFS-3030**, **NFS2-640**, **NFS-640** and the **NFS-320**. Fire Alarm Control Panels, and **NCA-2** and **NCA** Network Control Annunciators with three *reverse-polarity outputs* (alarm, trouble, and supervisory) and one *fire municipal box trip* on a single PC board. The TM-4 is designed to meet NFPA 72 requirements for Auxiliary Protective Signaling Systems and Remote Station Protective Signaling Systems.

Features

- On each TM-4 module in a system, use *either* the three reverse-polarity outputs (alarm, trouble, and supervisory) *OR* the fire municipal box trip.
- Maximum load for each reverse-polarity output circuit is 15 mA, 24 VDC nominal. All circuits are power cross-rated and power-limited per UL 1950 requirements.
- Mounts on CHS Series chassis and in panel module locations.
- Diagnostic LEDs: green for Power, ACS Data Reception and ACS Data Transmission; yellow for Trouble.
- Isolated 24 V for reverse-polarity outputs.
- Disconnect mechanism provides a means for inhibiting alarm status changes, which cause trouble indication for unit at the Fire Alarm Control Panel (FACP). Operation of the disconnect mechanism will also create a trouble condition on the reverse-polarity output circuits.
- Option jumper combines alarm and trouble conditions onto one circuit.

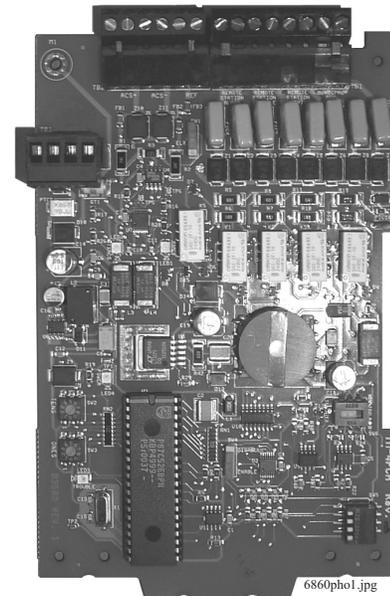
Specifications

PHYSICAL

- Approximately 4.375" (11.11 cm) wide by 6.875" (17.30 cm) high. Mounts onto any panel module location.
- **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% ± 2% at 32°C ± 2°C (89.6°F ± 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).

ELECTRICAL

- **Input voltage range:** 18.0 to 31.0 VDC, 24 V nominal.
- **Power requirements:** 165 mA.
- **Maximum current per output:** 15 mA; three isolated reverse-polarity outputs.
- **Supply voltage:** Sufficient capacitance provided to maintain a minimum supply voltage for 20 ms during battery transfer on a panel supply.
- **Current consumption:** 175 mA maximum @ 24 VDC.



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- One *isolated* 24 VDC supply, capable of driving a 45 mA load [three reverse-polarity circuits (15 mA each) *OR* one Municipal Box Trip Circuit (350 mA and support circuitry)].

FIRE MUNICIPAL BOX TRIP

- **Supervisory current:** 250 µA.
- **Trip current:** 0.35 A.
- **Coil voltage:** 3.65 VDC.
- **Wire resistance:** 3.0 ohms maximum.

MOUNTING

The TM-4 is designed to mount in CHS-M2, CHS-M3, CPU2-640 chassis, CHS-4N, or CHS-4L chassis; onto a BMP-1 blank plate for dress-panel mounting; or in the ABS-8R cabinet. Refer to the *TM-4 Product Installation Document*, number 51490, for further information and diagrams.

WIRING CONNECTIONS

Refer to the *TM-4 Product Installation Document*, number 51490, for diagrams and wiring information.

Operation Highlights

DIAGNOSTIC LEDS

- **POWER (green)** illuminates when 5 V is present on the TM-4 board.
- **TROUBLE (yellow)** illuminates when ACS Trouble occurs; or if the Disable All Outputs switch (SW4) is on.
- **RX ACS (green)** blinks when Annunciator Control System (ACS) data is received.
- **TX ACS (green)** blinks when ACS data is transmitted.

SWITCHES

- **SW1, EOL Resistor switch** – must be set to ON when the TM-4 is the last device on the ACS circuit.

- **SW2 & SW3, ACS Address** switches – tens and ones positions.
- **SW4, Disable All Outputs** switch – disables all outputs except Remote Station Trouble when turned ON (a Trouble message will display at FACP when on), for ease of maintenance.
- **SW5**, four DIP switches with the following functions: **SW5.1, SW5.2** – not used. **SW5.3** – when set to ON, if the Signal Silence button at the panel is pushed after an alarm has been initiated, the Remote Station or Municipal Box output will deactivate. A subsequent alarm will reactivate the output. **Note:** In legacy system applications, this function is NOT valid for the AM2020/AFP1010 or the INA. **SW5.4** – when set to ON, Alarm and Trouble signals are combined onto one output (Remote Station Alarm).
- **SW6, Isolator** switch – isolates or non-isolates the Municipal Box output.

ANNUNCIATOR CONTROL SYSTEM

EIA-485 INTERFACE

The TM-4 communicates with the control panel over a power-limited, one-channel, multi-drop EIA-485 serial interface using a special poll-response protocol.

OPTION TO COMBINE ALARM AND TROUBLE

A jumper allows the user to combine Alarm and Trouble conditions on reverse-polarity output #1.

DISCONNECT CAPABILITY

A selection switch allows the user to disconnect the TM-4 outputs inhibiting the transmission of signals to the remote monitoring station except for trouble conditions.

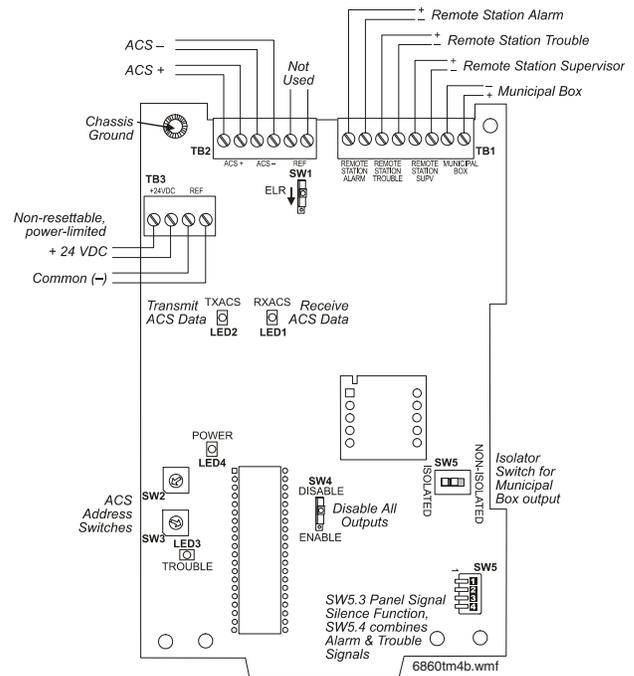
Agency Listings and Approvals

These listings and approvals apply to the TM-4. 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: file S635.
- **ULC** Listed: file CS118 (*NFS-640, NFS-3030*).
- **MEA** approved: files 317-01-E (*NFS-640*), 345-02-E (*NFS-3030*), 232-06-E (*NFS2-3030*).
- **CSFM** approved: files 7165-0028:214 (*NFS-640*), 7170-0028:216 (*NFS-640*), 7165-0028:224 (*NFS-3030, NFS2-3030*), 7170-0028:223 (*NFS-3030, NFS2-3030*).
- **FM** approved.
- **U.S. Coast Guard** approved: file 161.002/42/1 (*NFS-640*).
- **Lloyd's Register** type approved: file 02/60007 (*NFS-640*).
- **City of Chicago** approved.
- **City of Denver** approved.
- **FDNY** approved. COA# 6025 (*NFS2-640*), COA# 6026 (*NFS2-3030*).

Product Line Information

TM-4: Transmitter Module for NFS2-3030, NFS-640, NCA-2.



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