



CTM-530 Series Protectowire Interface Module with Confirmed Temperature Initiation (CTI™)



Features

- Provides a single zone interface for Protectowire Type CTI™ Linear Heat Detectors
- Patented technology can distinguish between mechanical shorts and thermal alarm conditions (Short Circuit Discrimination)
- Integrated Protectowire Alarm Point Location Meter with field calibration
- 4x20 LED backlit LCD display
- Plug-in terminals for easier field wiring connections
- 4-20mA outputs for Status and Alarm Point Location
- 64 Event History Log (FIFO)
- Optional enclosures available

General

The CTM-530 is a detection control module that acts as an interface between a main fire alarm control panel detection circuit or addressable node and Protectowire Type CTI Linear Heat Detector. The module provides one (1) supervised detection circuit that may be field wired for either Class A (Style D) or Class B (Style B) service. The alarm initiating circuit is capable of operating up to 4000 feet (1219 meters) of Protectowire Type CTI Linear Heat Detector. The CTM-530 initiating circuit currently does not support other types of normally open contact alarm initiating devices.

Description

The CTM-530 operates using Protectowire's patented CTI Confirmed Temperature Initiation technology. When paired with Protectowire Type CTI Linear Heat Detectors, the module can distinguish between a mechanical short in the linear heat detector and a thermal alarm activation thereby greatly reducing the risk of false alarms. This multi-criteria detection method provides for

short circuit discrimination, a feature previously unavailable for digital type linear heat detectors.

The CTM-530 is designed for easy installation and is optionally available in a NEMA-4X* rated enclosure for mounting outside of the host fire alarm control panel or remotely near the hazard to be protected. In order to ensure proper operation, each CTM-530 module requires regulated resettable external power which is normally provided by the host fire alarm panel. Each module contains a green "Power-On" LED indicator, one (1) red "Alarm" LED indicator, one (1) yellow "Trouble" LED indicator and one (1) yellow "short fault" LED indicator. One (1) set of Form C alarm contacts, one (1) set of Form C trouble contacts and one (1) set of Form C short circuit fault contacts are also provided to connect the unit to the host fire alarm panel. The module also provides two 4-20mA outputs, one which allows monitoring of the module status and the other for monitoring alarm point location information.

The standard CTM-530 module contains a built in Protectowire Alarm Point Location Meter. This meter will automatically display

the distance from the beginning of the detector run to the heat actuated (shorted) portion of the detector. The Alarm Point Location Meter can be programmed to display in either standard units (Feet) or metric units (Meters). The meter display provides a simple “on screen” calibration procedure allowing the measurement to be field calibrated to the installed detector length and ambient temperature for optimal accuracy.

Specifications

Electrical

- Power input - Regulated 12 to 24 VDC (+10% / -15%) @ 1 Watt
- Power Limited, onboard surge and EMI protection devices

Inputs

- One initiating device circuit capable of monitoring up to 4000 Feet (1219 Meters) of Protectowire Type CTI Linear Heat Detector. For all CTI type detectors, twisted “T” type thermocouple grade extension wire is required for use as interconnecting cable on the detection circuit. Minimum conductor size is 20 AWG (0.812 mm), or as required by local code.

Environmental

- Ambient temperature Range:
Standard version -20° to 120°F (-29° to 49°C)
LT version -40° to 120°F (-40° to 49°C)
- Humidity: Max. 95% non-condensing

Indicators

- 4x20 Character LED backlit LCD display
- One green “Power” indicator
- One red “Alarm” indicator
- One yellow “Fault” indicator
- One yellow “Short Fault” indicator

Relay Outputs (Rated 1 amp @ 24VDC Resistive)

- One (1) set of Form C (SPDT) Fault Contacts
- One (1) set of Form C (SPDT) Short Fault Contacts
- One (1) set of Form C (SPDT) Alarm Contacts

4-20mA Outputs

- One(1) 4-20mA Output for module status
- One (1) 4-20mA Output for Alarm Point Location Readings

Optional Enclosure Specifications

- 10.5" H x 8.5" W x 4.5" D (27cm x 21.5cm x 11.4cm)
- Add 1.6" (4cm) to overall height for external mounting feet
- Clear full view door
- NEMA 4X Rated (Rating UL listed only)*
(Closest IEC equivalent - IP66)
Additional enclosures and sizes available. Consult Factory

4-20mA Output Information

Description - The CTM-530 provides two 4-20mA outputs that allow for monitoring of the module status and active alarm point location reading.

For Class “A” wiring configurations the status output will also indicate which detector input is currently being measured by the alarm point location meter. The measurement is alternated between inputs approximately every 3 seconds with the status output indicating which input is currently being read.

The output levels are detailed below.

4-20mA Loop 1 - Status Output

Loop Fault – 4mA or less

Open – 6mA

Normal – 10mA

Input 1 Short Fault – 13mA

Input 2 Short Fault – 15mA

Input 1 Alarm – 17mA

Input 2 Alarm – 19mA

Note: For systems employing an isolated power source for the 4-20mA loops; Module Power Failure will report at greater than or equal to 20mA.

Loop 2 – Alarm Point Location Output

4-20mA Full Scale corresponds to 0-8000 Feet.

4mA = 0 Feet – 20mA = 8000

To calculate current to distance in feet use the following formula:

Current in mA = (I)

$(I - 4) / 0.002 = \text{Distance in Feet}$

To convert to Meters:

Distance in Feet times 0.3048

Ordering Information

Model No.	Description
CTM-530	Interface Module for Protectowire Type CTI with LCD display and navigation buttons.
CTM-530E	Interface Module for Protectowire Type CTI with LCD display and navigation buttons mounted in a NEMA-4X (IP66) Enclosure.
CTM-530LT	Interface Module for Protectowire Type CTI without LCD display and navigation buttons for use in low temperature environments. This model requires the use of a separately ordered hand-held programmer. Consult Factory for details.
CTM-530LTE	Interface Module for Protectowire Type CTI without LCD display and navigation buttons for use in low temperature environments mounted in a NEMA-4X (IP66) Enclosure. This model requires the use of a separately ordered hand-held programmer. Consult Factory for details.
CTMP-1	Hand-held programmer for CTM-530LT Models. Required for commissioning system, setting alarm temperature and accessing history log.