

LINE HEAT DETECTOR – N4387B



N4387B 19-inch version



N4387B IP66 version

Operation principles – FIRE detection and Temperature Monitoring

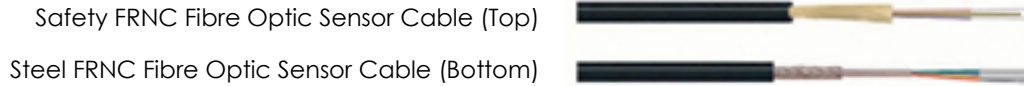
The Distributed Temperature Sensor (DTS) detector is equipped with a low power laser source (laser class 1M, high level of safety) which generates measurement impulses in a fibre-optic sensing cable type FRNC (Fire Resistant Non-Corrosive). The unit analyzes the frequency spectrum of the returning echo signal. Using Raman scattering (quantum physics effect) and patented measurement techniques (Optical Reflectometry Code Correlation). The DTS detector provides the temperature profile along the entire length of the sensor cable. Temperature data signal polling rates start at 10 seconds, with measurement points starting at every 0.5m along the sensor cable. The DTS unit operates without the necessity of recalibration.

The system is certified for hazardous environment operation with explosive gas, vapors or dust.

Technical Data – Detector Unit

Measurement distance ranges	1 km, 2 km, 4 km, 6 km or 10 km
Number of measurement channels	1, 2 or 4 channels
Range of spatial resolution	0.5m to 8.0m
Measurement cycle time	10s or 30s for fire detection
Number of alarm zones per channel	256
Optical connectors	E2000, 8° angled
LED indicators	Operation, measurement, fault, alarm
LCD display	4 lines, 16 characters, colours for different states
Laser class (IEC 60825-1:2001)	1 M (output power 17 mW)
Dry contact output relays	44, maximum load 1A/30VDC, optionally up to 256
Contact inputs	4
Communication interface	USB, LAN, optionally: RS-485, RS-422, RS-232
Communication protocol	SCPI, ASCII, optionally: MODBUS TCP, RTU
Power supply	10 to 30 V DC
Power consumption	approx. 17W, at 20°C ambient (approx. 700 mA@24 VDC)
Operating temperature (DTS unit)	-10°C to +60°C
Storage temperature (DTS unit)	-40°C to +80°C
Humidity range (DTS unit)	0% to 95%
IP rating	IP30 - 19" rack version / IP66 - wall mount version
Dimensions (WxHxD)	800 x 600 x 220 mm wall mount; 448 x 88 x 364 mm, 2 HU 19" rack
Weight (kg)	17kg - wall mount version; 9kg - 19" rack version
Fire compliance certification	EN54-22

FIBRE SENSOR CABLE – SAFETY AND FRNC



The two types of sensor cable available for fire detection and temperature monitoring each have 2 fiber cores covered by polyacrylate, with the outer cable sheath made of a polyethylene based compound.

Safety FRNC – standard without metal components

Steel FRNC – armoured with stainless steel tubes, outer sheath coated with aluminum hydroxide as the flame retardant

The main characteristics of both cables are the small bending radius for easier installation and lightweight construction for minimization of thermal capacity to provide rapid heating of the cable.

Technical – Fibre Sensor Cable

TYPE	SAFETY FRNC	STEEL FRNC
Diameter	4,0 mm	3.8 mm
Weight	17 kg/km	25kg/km
Crush resistance	100 N/cm	960 N/cm
Tensile resistance	1000N (short time) 800N (long time)	1500 N (short time) 1100 N (long time)
Minimum bending radius	20 x diameter (with tension) 15 x diameter (without tension)	
Optical fibre type	2 x Multimode 50 / 125 µm	
Attenuation	0,9 dB / km @ 1064 nm	
Operating temperature (<1h)	-50°C to + 150°C	
Operating temperature	-40°C to + 85°C	
Installation Temperature	-50°C to + 50°C	
Operating fire resistance	750°C for 2 hours	

ACCESSORIES

Accessories that may be required for each system include:

Modbus TCP/IP interface installed in the DTS detector	Splice Box (Micro Indoor or Heavy Duty Outdoor)
2 nd & 4 th channel card installed in the DTS detector	E2000 8° pigtails 50/125 µm (5m or 30m length)
Type Test Certificate (ATEX Hazardous area)	Sensor Cable E2000 Connector Set (factory fitted)
Extended warranty up to 3, 5 or 7 years for detector unit	Cable drum
Outdoor housing IP66 for detector unit	Cable mounting clamps (Plastic, Steel, Stainless Steel)
240VAC/24VDC, 640Ah power supply, 19" EN54-4 certified	Cable Ties (High Temperature)
High Density I/O connection set (for fire panels & PLC/DCS)	Cable Tray Clips

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