

F-Laser 4



F-Laser 4 Sensor Control Unit

The F-LASER 4 is a linear heat detection system specifically designed for fire protection applications. It is able to measure temperature profiles at thousands of points simultaneously along a sensor cable which may be up to 4 km in length. In fire prevention, the F-LASER 4 is able to determine not only the current position but also the progression of the fire by measuring the temperature along the sensor cable in real time.

Optical fiber offers several important advantages as a sensing medium. Signals are immune to electromagnetic interference thereby ensuring integrity of readings from electrically noisy areas, for example around power cables and transformers. As no electric current is used in the sensing fiber and the fiber is a relatively inert and dielectric (non-conducting) medium, it is a safe technology to use in hazardous environments. (Please contact the manufacturer).

Opto-electronics unit

The system consists of a F-LASER 4 linear heat detection system module housed in a lockable wall-mounted steel enclosure with sealed gland plates to provide IP54 protection. The enclosure also contains a fiber splice housing to protect the splices made between the sensing cable and the Fittich-supplied pigtails. Alternatively the system can be supplied suitable for mounting in a standard 19inch rack.

LEDs mounted on the front panel of the cabinet indicate system status: Power On, System Fault, Sensor Fault and Alarm.

A relay module is contained within the F-LASER 4 unit providing 32 volt-free contacts as standard for connection to end-user systems. The volt-free contacts are terminated with screw terminal connector blocks within the wall-mount cabinet to simplify installation. Two of these relays are dedicated to System and Sensor fault and are not reconfigurable.

Key features

- Approvals: The systems are approved to international fire standards by LPCB and VdS.
- Fibre Break Detection & Recovery: In the event of a break in the sensor fiber, or a significant increase in optical loss, the F-LASER 4 indicates an alarm and the system automatically measures from both ends of the fiber, ensuring continued fire protection over the entire fiber length.
- Proven Technology: The F-LASER 4 can detect the exact location of an abnormal hot spot to within 1.0 m. The sensitivity of the system facilitates the detection of incipient fires.
- Stand Alone Operation: The embedded software enables the F-LASER 4 to operate independently of an external controller via TCP/IP or RS232 serial connection eg PC.
- Programmable Zones: Up to 600 zones can be programmed, each with individual alarm thresholds. Up to 32 outputs can be fed directly to an end user system via relays. Additional outputs to cover all zones can be achieved via an optional Modbus protocol interface.
- Fibre Optic Sensor Cable: The standard, 62.5/125 μm , graded index, communications grade, fiber optic sensor cable is not affected by electro-magnetic interference and is well suited to dusty, hazardous conditions .

Options

- Modbus slave: The F-Laser 4 is configured to be a Modbus Master, an additional slave (Programmable Logic Controller (PLC) is available to interface with a Master end-user (SCADA) system.

Specification	Rack Mounted	Wall Mounted
Performance		
Sampling Resolution	1 m	1 m
Maximum External Fibre Length	4 km	4 km
Circuits	1 or 2*	1 or 2*
System Response	A1R**	A1R**
Laser Classification	Class 1***	Class 1***
Physical		
Dimension (wxdxh)	482x132x410 mm	500x155x595 mm
Weight	6 kg	17.5 kg
Environmental		
Operating Temp	-5°C to 40°C	-5°C to 40°C
Storage Temp	-40°C to 65°C	-40°C to 65°C
Humidity	5% to 95% RH (non condensing)	5% to 95% RH (non condensing)
Power		
DC power	24 V dc nominal	24 V dc nominal
Power Rating	Typical: 18W , Maximum: 25 W	Typical: 18W , Maximum: 25 W
EMC Compliance		
CE Conformity	EN 50082-2 (immunity); EN 50130-4 (immunity); EN 50081-1 (emissions)	
Railway	EN 50121 part 4	
<small>* Systems are available in 1 circuit or 2 circuit options. ** System response is defined by EN54 part 5:2000 *** The F-LASER 4 is a Class1 laser product when assessed in accordance with EN 60825-1 : 2001.</small>		