SOLID STATE TECHNOLOGY

ACP-Laser Distributed Temperature Sensor System

ACP-Laser range of fiber optic monitoring systems are designed specifically to enhance the safety of critical infrastructure and personnel.
We provide solutions for fire detection utilising linear heat detection technology, monitoring environments over a long range distance (linear assets), typically in special hazard environments.
Linear heat detection systems can detect a fire anywhere along the length of the linear heat sensing cable, over a distance of several kilometers. ACP-Laser utilises fiber optic distributed temperature sensing, one of thekey technologies available within this field.
Combined with our smart software and services, this solution provides operators with the right information at the right time.
Whether the asset is in a remote location or a busy inner city, ACP-Laser solutions enable swift decision making and help to minimize damage, avoid catastrophic failure and to reduce financial, environmental and reputational risk.

INTELLIGENT INSIGHTS
Some of the conventional linear heat detection systems that have typically been used include, digital cable based, analog cable, pressurised tube and multipoint detection.
There are some significant advantages of utilising fiber optic sensors over conventional technologies, these include:

Early Detection
Earlier identification of the rate of rise and so can detect earlier than other technologies which rely on discrete trigger points at a higher temperature.

Truly Distributed
Due to the distributed continuous nature of the fiber there is complete coverage of the asset with no gaps.

Versatile
Fiber optic sensing technology resistant to electromagnetic interference and is intrinsically safe, enabling it to be used in a wide variety of installations.

Low maintenance
Completely passive, corrosion free, no apertures, joints or moving parts, ensuring a very low maintenance option.

In the interest of improving quality and design ACP Environment AG/SA reserve the right to amend specification without

ACP-LASER SPECIFICATIONS

ACP-Laser front

ACP-Laser rear

ACP-LASER SPECIFICATIONS			
Range per channel	2 Km	5 Km	10 Km
Number of channels	1/2/4	1/2/4	1/2/4
Ordering Part Numbers	ACP-Laser 2-1CH ACP-Laser 2-2CH ACP-Laser2-4CH	ACP-Laser5-1CH ACP-Laser 5-2CH ACP-Laser 5-4CH	ACP-Laser 10-1CH ACP-Laser 10-2CH ACP-Laser 10-4CH
DATA ACQUISITION			
Measuring time	From 1s/ch, generally ~5 seconds for linear heat applications (EN54-22)		
Sampling Interval	0.5m / 1m		
Temperature Resolution*	0.1°C @ 15s, 2.5km	0.3°C @15s, 5km	0.3°C @15s, 10km
Temperature Accuracy*	±1°C		
Fiber Break Alarm	Automatic detection, accuracy within < ±5m		
OPTICAL			
Laser Wavelength	975 nm	975 nm	1550 nm
Optical Budget**	7dB	8dB	10dB
Connector Type	E2000		
Cable type	Multi mode 62.5/125 as standard		
ACP-Laser cable	ACP LaserLine Thermoplastic Tube cable design ACP LaserTube Armoured tube based cable design ACP LaserTube-HS Armoured tube high strength cable design Other cable designs available on request		
Laser Safety Classification	Class 1M		

* All temperature resolution and accuracy figures are for 62.5/125 fiber.

** For optical budget calculations maximum loss per connector/splice is 0.3/0.1dB.
For ACP-Laser 2 & 5 max number of splices = 3 to 5.
For ACP-Laser 10 max number of splices =7 to 10

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ACP-LASER SPECIFICATIONS (CONT.)

ELECTRICAL AND HARDWARE INTERFACES	
Supply Voltage	24VDC (18 to 36 VDC)
Power Consumption	20W (average)
Relays	Yes - 50 relays
Modbus	MODBUS TCP / MODBUS RTU
RJ45	3 x 100Mbps
Serial	2x RS-485
USB	1x USB On-the-go (OTG)
Other	5.7-inch touch screen, 640*480-pixel 262K
Internal Storage	> 500,000 measurements @10km , 32 GB
PHYSICAL	
Rack height	3U
Dimensions (W * H * D)	431 x 131 x 384 mm
Net Weight	10 kg
IP Rating	IP40
Material	Painted Steel
Colour/Finish	Matt Black
Shipping dimensions	550 x 330 x 530 mm
Shipping Weight	15 kg
ENVIRONMENTAL	
Operating Temperature	-10°C to +50°C (60°C for HT version)
Operating Humidity	0 to 95%RH
Storage Temperature	-10°C to +85°C
Storage Humidity	0 to 95% Relative Humidity, Non-condensing
SAFETY AND COMPLIANCE	
Laser Safety	IEC 60825-1:2007 (2nd Edition)
CE - EMC	EMC 2014/30/EU - EN 61000-6-3:2007+A1:2011, EN 61000-3-2:2014, EN 61000-3-3:2013, EN 61000-6-1:2007
CE - RoHS	Yes
VdS	Yes, according EN54-22
Other	Explosion-proof mark: Ex iaIICT6 Ga , EN54 part 22, SIL 2
SOFTWARE	
Alarm Types	Max & Min Rate of Rise Deviation
Max. Zones	1000

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