

OTS3 Series

Distributed Temperature Monitoring



How does it work? OTS3 Interrogators are based on our ROFDR technology which through analysis of Raman backscattering in optical fibre at monitored structures provides quantitative temperature measurements along the entire length of the asset.

What makes OTS3 a great temperature monitoring solution? OTS3 provides outstanding temperature resolution and accuracy, has a true industrial design, is immune to electro-magnetic disturbances and is passively cooled. The sensing unit has an MTBF of more than 40 years, ensuring reliable operation in the toughest environments. OTS3 offers fast, accurate and highly reliable heat detection even in hazardous areas, prove for which is thousands of permanent installed units and over a decade of success stories.

KEY FEATURES	EXTENSIONS	APPLICATION EXAMPLES
▪ Highly reliable and maintenance-free MTBF 40+ years	▪ Powerful and user-friendly application-oriented software platform	▪ Fire detection in tunnels, conveyor belts etc. (LHD3)
▪ Real time condition monitoring	▪ Abundance of communication protocols	▪ LNG Monitoring and other hazardous areas
▪ Stand-alone system	▪ Modeling and reporting algorithms (Real-time thermal rating, Depth of Burial)	▪ Industrial infrastructure monitoring
▪ Wide Operating temperature range	▪ Easy commissioning, consulting, and services	▪ Scientific research and testing

TECHNICAL SPECIFICATIONS

Distance Ranges	
OTS3-xxx-50	50µm MM (GI). Monitoring ranges per channel of up to 30km
OTS3-xxx-62	62.5µm MM (GI). Monitoring ranges per channel of up to 10km
OTS3-xxx-09	9 µm SM fibre, (ITU-T G.652, G655, G657). Monitoring ranges per channel of up to 30km
OTS3S-xx-50/62	50µm, 62.5µm MM (GI) Monitoring ranges per channel of up to 4km
LHD3-xx	62.5µm MM (GI). Monitoring ranges per channel of up to 14km
LHD3S-x	62.5µm MM (GI). Monitoring ranges per channel of up to 5km
Optical Data	
Optical Channels (internal)	1, 2, 4, 8 or 16
Optical Connectors	E2000 / APC
Fibre Types	50 µm, 62.5 µm MM and 9 µm SM
Laser Classification	Class 1M (IEC60825-1), eye-safe wavelength
Operational Wavelength	1550 nm, 1064nm

Measurement Performance	
Sampling Interval	down to 0.1 m **
Spatial Resolution (min)	0.7m (other available on request)**
Temperature Resolution (min)	0.1° C
Temperature Accuracy	≤2°C
Measurement Time	2 s - 20 min **
Areas of Application	Cryogenic, standard, high temperature, hazardous areas
Data Storage/Communication/Interfaces	
Internal SSD Storage	2,8 or 16GB
Analog Outputs	4 – 20mA (external, optional)
Programmable Inputs / Outputs	4 / 10 (optional up to 40/106)
Communication Interfaces	Ethernet TCP/IP (2x), RS232, USB
Communication Protocols (options)	MODBUS TCP, DNP3, IEC60870, IEC61850
External Sensor Inputs	PT100(2x), Current0-20mA(2x), Voltage0-10V(2x) (option)
Fixed outputs	Collective fault and alarm
Mechanical Data	
Dimensions (H x W x D)	19" / 3 HU rack (13.1 x 48.3 x 33.8 cm)
Weight	13 kg
Electrical Data	
Power Consumption (DC controller)	<25W (max. 45 W/60°C)
Operating Voltage (DC controller)	DC nom. 12 ... 48 V (max. 10 ... 60 V DC)
Mains Voltage (AC controller)	AC 100 ... 240 V or DC 110... 220 V
Environmental Conditions	
Storage Temperature	-35°C to +75°C
Operating Temperature	-10°C to +60°C (optional outdoor enclosure: -40°C to +60°C)
Humidity (relative)	≤95 % (non-condensing)
Protection Class	IP41, Type 2 enclosure (optional outdoor enclosure up to IP66)
Conformity to Standards	
Safety	IEC/EN 61010-1, IEC/EN 60825-1
Linear Heat Detection	Approvals: VdS (EN54-22), UL (UL521, ULC S-530), FM (Class 3210)
Hazardous Areas	Approvals: ATEX, IECEx (IEC/EN 60079-0,28)
EMC	EN61326-1, EN61000-6-2,3, EN61000-4-2, 3, 4, 5, 6, 8, 11, EN61000-6-3-2, 3, EN50130-4, FCC 47 CFR Ch.1 Part15
Hazardous Substances, Waste	RoHS directive 2011/65/EC, WEEE directive 2002/96/EC
Environmental testing	IEC 60068-2-6,14,27,30

** Depends on the distance range

