

Access™ Distributed Temperature Sensor

The Access™ range of Distributed Temperature Sensing (DTS) systems are a step change in affordable distributed temperature sensor which open up a range of new commercial and industrial markets. Access™ DTS utilizes Bandweaver expertise in vertical integration of optical components to produce the most affordable DTS available today.



Features

- Location of temperature events to within 1m
- Based on single fiber optic sensing cable. No individual sensors, no metal or moving parts
- Robust and reliable instrumentation with no moving parts (fan free) and utilising high reliability telecom components
- Industry standard MODBUS interface with code examples available

Benefits

- Ability to react to precise location of event for rapid action and effective troubleshooting
- Easy to install and low cost of ownership with low ongoing maintenance costs
- High percentage system uptime (mean time between failures > 19 years) giving complete coverage at all times

Applications

The unique functionality, specifications and pricing of the Access DTS opens up a range of applications that previously were not possible with DTS due to practical and commercial considerations. These include:

Fire Monitoring

- Storage tanks
- Road and Rail Tunnels and Stations
- Power
 - Cable trays and transformers
 - Cooling towers
 - Coal conveyors
- Warehousing and Storage
- Offshore platforms

Process Monitoring

- Factories
 - Temperature and PID control
- Clean rooms

Agriculture

- Green house monitoring & Hi tech hydroponics
- Soil moisture monitoring
- Golf courses

Smart Buildings

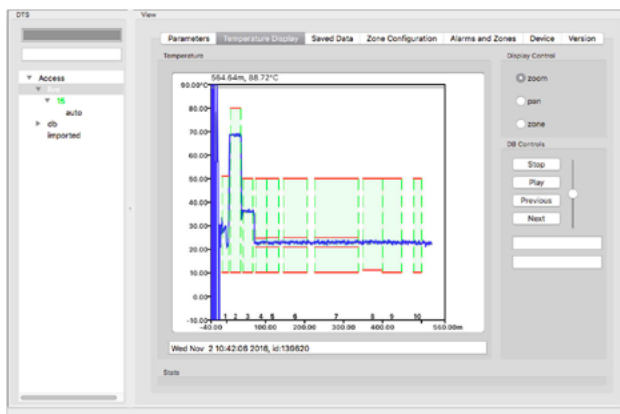
- Pipe monitoring for hot water heating for buildings
- Underfloor heating
 - Condition of pipes (blockage)
- Large area temperature monitoring e.g. warehouses

Environmental monitoring

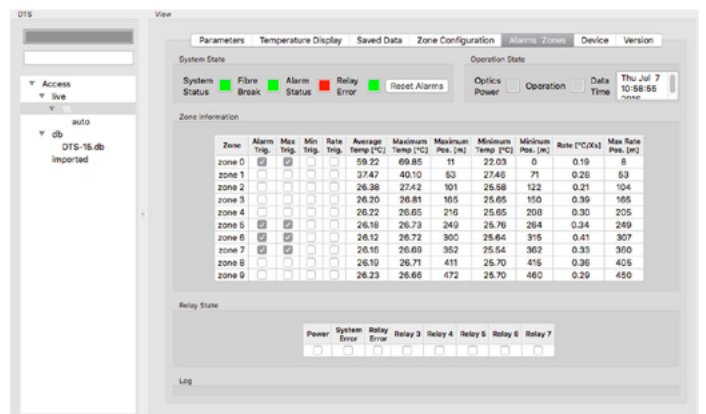
- Geothermal wells
- Leakage detection in earth dams

User & System Interface

The Access DTS has a simple easy to configure user interface, which is programmed via a laptop and then is operated standalone.



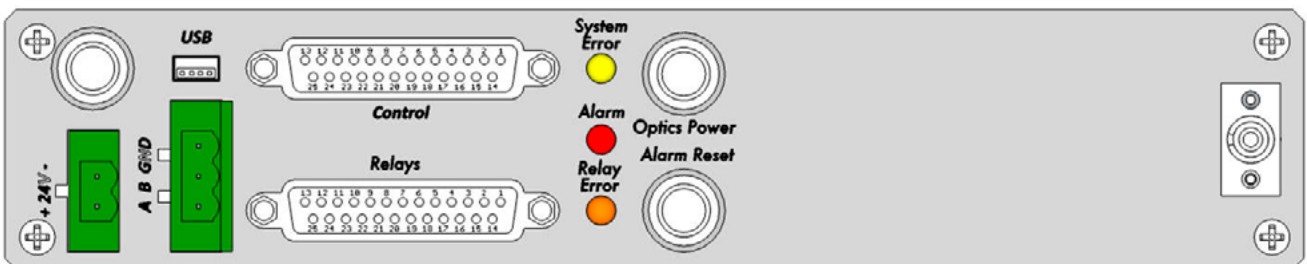
Example of temperature trace



Example of zone information display

Front Panel & Key Features

- 1U half rack width - compact design
- RS485 MODBUS interface in master slave topology
- Full temperature trace available via MODBUS registers
- Relay outputs for alarm interface
- USB interface for convenient connectivity
- Low power consumption (8.5W)



Master & Slave System Topology

The Access DTS is the sensing unit and only requires a PC for configuration and for viewing of temperature data. When running standalone, the Access DTS can monitor temperature zones and indicate triggered alarms via relays, or via MODBUS.

When used in a MODBUS environment the master system must poll the DTS for any changes. This method allows for multiple Access DTS to be linked together on the same RS485 bus.

System Topology	Main Use
Master – Slave Standalone	Multiple Access units connected via RS485 to a master PC. MODBUS protocol is used to collect data, such as distributed data and alarm zone information. Single unit with relay activating alarms conditions

SYSTEM SPECIFICATIONS

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Measurement Range	500 metres	1,500 metres
Temperature Resolution	0.5°C @ 5 seconds	1.6°C @ 5 seconds
Spatial Resolution	Best 1.6m	3m
Sampling resolution	1m	2m
Measurement time	5s < t < 20min	5s < t < 20min
Channels	1	
Optical fiber type	multimode 62.5um/125um , FC/APCconnector	
Zone Information	10 Configurable smart zones	
Power Requirements	24VDC, 8.5W	
Alarm Types	Maximum temperature Minimum temperature Rate of change	
Switches	Power on/off, Optics power control on/off, alarm reset	
Indicators	Temperature alarm, relay error, optics power, system error	
Communication interface & Protocol	RS485 & USB. MODBUS supported functions 0x02, 0x03, 0x04, 0x05, 0x06, 0x10 Relay outputs - 3 system, 5 user power, general alarm, system error, (laser and sensor fault), (DB25)	
Data Storage	4GB	
Operating Environment	Operating temperature: -10°C to +50°C Storage temperature: -40°C to +85°C Temp sensing range: cable dependent	
Physical Dimensions	H*D*W: 44mm*246mm*220mm	
Weight	2.0kg	