



innovative solutions

Distributed Temperature Sensing and Optical Fibre Solutions

AusEng Pty Limited
ABN 91 787 671 218
28 Jackson Crescent
Pennant Hills, NSW 2120
Telephone +61 2 94846434
Facsimile +61 2 9875 3840

PRODUCT DATA SHEET

PD-S101-699

11 September 2007

Sentor 101™

DISTRIBUTED TEMPERATURE SENSOR



The Sentor 101™ Distributed Temperature Sensor (DTS) continuously measures temperature throughout the length of an optical fibre in contact with the equipment to be monitored. Data can be processed and stored locally. Connectivity options include modem and being web enabled, Sentor connects to your intranet or the internet. Alarms and trips can be preset based on absolute temperature or rate-of-rise.

- **Principle of Operation** – By launching pulses of laser light through an optical fibre cable in contact with the objects to be measured, Sentor™ captures many thousands of temperature measurements each second. Sentor™ monitors the intensity of the internally reflected return signals to record temperature, and arrival time to record the location.
- **Applications** - Sentor™ can be used to monitor a wide range of thermally critical situations, including; underground power cable; petrochemical process and storage plant; concrete curing; fire detection in cable ducts; transformer windings; furnace jackets and many more applications where real-time knowledge of distributed temperature conditions is vital for safe and efficient plant operation.
- **Spatial resolution / range** - Measurements can be made as close as 300mm apart. However, for most applications, one or more metres is usually sufficient. If closer distances are required probes can be fitted, comprising several metres of looped fibre, embedded in a standard, or custom, fitting. Fibre optic cables may be fitted on installation or retro-fitted to most equipment. Sentor™ may be used for fibre route distances of up to 4,000 metres.
- **Flexibility** - By changing the pulse characteristics, the number of locations or frequency of readings can be increased or decreased without any physical change to the installation. With appropriate choice of fibre cladding, Sentor™ can also be used for a very wide range of measured temperature.
- **Accuracy** - If there is any doubt about the location of hot spots, Sentor™ can be re-configured by the user to provide localised high quality data to pinpoint the problem.
- **Physical** - Optical fibres are of small size; low weight; non-conductive; corrosion resistant; immune to electromagnetic interference; and have very wide frequency bandwidth response. Sentor™ uses industry standard communications grade optical fibre, which is economical and readily available.
- **Performance** - Sentor can be configured for simultaneous sensing of more than one parameter; and offers an optimal combination of high sensitivity; high spatial resolution; and fast response times.
- **Reliability** - Properly installed, fibre optic cable can provide higher in-service reliability than powder or semiconductor-tipped optical spot sensors, or thermocouples.