

OEM1040-S-422 Fibre-optic Sensor Interrogation (FSI) unit



The OEM-1040-S-422 has been designed for long term monitoring of Civil and other structures where there may be a very large number of sensors but where high-speed data acquisition is not required. The OEM-1040-S-422 is a variant of the highly successful OEM1030-422 fibre sensor interrogator manufactured by Insensys limited for active-control and condition monitoring of wind turbines..

Specification for: OEM-1000-422 series

Number of channels (optical fibres)	4
Maximum acquisition speed (sensor readings per second)	500Hz in streaming mode (non switched) 170Hz in polled switched mode
Minimum switching interval	10s
Maximum number of sensors	400, maximum 100 per channel
Measurement range	+/- 4500 microstrain ⁽¹⁾
Noise (RMS)	1.7 microstrain
Minimum sensor spacing	2.5m ⁽²⁾
Power Supply	9 to 36V DC, 100 to 240V AC with mains adapter
Power consumption (typical)	3W ⁽³⁾
Interface	RS422
Optical Connectors	E2000/APC
Weight	1.8Kg
Dimensions	240 X 97 X 120mm
Operating temperature	0 to 50°C
Storage temperature	-40 to 65°C
Humidity	5 to 85% (non-condensing)
Shock	15g for 11ms, 5 times per axis
Vibration	1.5g on a level sine sweep 10 to 150 Hz, 4 tests per axis

1. The measurement range can be modified by offsetting the sensor central wavelength to give a range of 0 to 9000 microstrain, or 0 to -9000 microstrain, or incremental values in between.
2. 2.5m is the standard minimum in-fibre distance between sensors. This can be reduced depending on detailed design of the sensor arrays. There are also a number of deployment techniques that enable much closer physical spacing of sensors when installed in a structure.
3. The system power consumption is dependent on the interface and processing configuration.