Carina® Sensing System

Bringing you the best of both worlds: the engineered fibre optic sensing system combining the extensive, high density coverage of distributed sensors with sensitivity beyond that of point sensors.

The Carina Sensing System is a versatile fibre optic sensing system and comprises an advanced optoelectronics interrogator and sensing cables, which are equipped with the new family of engineered Constellation™ fibres; to gain two orders of magnitude lower noise floor (100x or 20dB improvement) over that achieved with standard fibres.

Performance

Gauge length (software selectable)	25 cm	2 m	10 m	30 m
Sensing range*	15 km	30 km	50 km	60 km
1 kHz amplitude spectral density**	90 pε per sqrt Hz	3 pε per sqrt Hz	300 fε per sqrt Hz	70 fε per sqrt Hz
10 Hz dynamic range**	130 dB			
Sample spacing	25 cm to 32 m (40,000 samples maximum)			
Spatial resolution†	1 gauge length			
Sampling frequency††	400 Hz to 100 kHz			
Acoustic sensitivity	<0.001 Hz to 50 kHz			

* Defined for singlemode fibre.

** Median value for standard specification engineered Constellation™ fibre, with interrogator settings optimised for a 700 m fibre length.

† Defined as the spatial rise / fall length of an extended source. Spatial localisation of a point source is achievable down to 1 m for standard singlemode fibre and to half a gauge length for engineered Constellation fibre, apart from 25 cm gauge length where the spatial localisation limit is 25 cm.

†† Depending on the fibre length.

I/O Connections

Fibre	1 x E2000/APC (singlemode or multimode fibre compatible)
Power	1 x IEC 60320-1 C20 inlet
Ethernet	2 x 1 GbE RJ45 port
USB	2 x USB 3.0 port and 4 x USB 2.0 port
Display	2 x DisplayPort
Internal data storage	1 x 4 TB SSD RAID module
External data storage connection	2 x 10 GbE SFP+ port and 2 x PCIe x4 cable port
GPS antenna input	1 x SMB connector
Synchronisation clock output	1 x SMB connector
Trigger	Trigger In: 1 x SMB connector, Trigger Out: 1 x SMB connector
PTP	1 x LAN RJ45 port

Electrical

Input voltage range	100 to 240 VAC
Input voltage frequency	50 to 60 Hz
Power consumption	215 W (typical)

Mechanical and Environmental

Dimensions	195 mm (with feet attached) x 444 mm x 518 mm (H x W x D)
Rackmount	1 x 19" Rack mount kit supplied
Weight	24.1 kg
Operating temperature range	5 °C to 40 °C
Operating relative humidity range	10% to 90%, non-condensing

Compliance

Laser safety	Class 1
Product marking	CE, UKCA and FCC

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