



Commercial Grade SmartScan 04

Key Features

- Multi-kHz Scanning
- Ultra-Compact
- All Solid State
- Highly Robust Optics (Flight Tested Variants Available)
- Data Logging to USB Drive Option

About SmartScan

SmartScan is an ultra-compact and robust interrogator for dynamic measurement of FBG sensors. This WDM instrument is based on an agile, tuneable laser source that enables high resolution interrogation at multi kHz frequencies. The high frequency scan rates allow over-sampling and averaging to give extraordinary resolution.

Specifications

Measurement and Processing	SmartScan	SmartScan Lite
Wavelength Range	40 nm (1528 – 1568 nm)	
Number of Optical Channels ¹	1, 2, 3, 4	
Maximum Number of Sensors/Channel	16	
Scan Frequency (all sensors simultaneously)	2.5 kHz	250 Hz
Maximum Scan Frequency (with reduced wavelength range)	25 kHz	-
Repeatability ^{2,3,4}	< 1 pm	
Wavelength Stability	< 5 pm over operating temperature range, ± 20 pm over 25 years	
Dynamic Range (total tolerable optical attenuation without loss of performance)	27 dB	
Dynamic Range (laser launch power minus detection noise floor)	37 dB	
Gain Control	g levels, per channel or per sensor, automatic or user controlled	
Onboard Processing	For conversion of measuring units and interfacing to client systems	
Bragg Grating Full Width Half Maximum (FWHM)	Minimum > 0.2 nm, > 0.5 nm recommended	
Mechanical, Environmental and Electrical		
Dimensions	140 x 115 x 85 mm / 5.5 x 4.5 x 3.3"	
Weight	0.9 kg / 2 lb	
Operating Temperature	-15 to +55 °C / +5 to 131 °F	

Optional Increased Temperature Range	-20 to +60 °C / -4 to 140 °F
Comms Interface	Ethernet (UDP-IP), CAN bus and others on request
Data Connector	RJ45 standard
Data Logging (optional)	To USB memory device (no need for connected PC)
Power Connector	via mains adapter supplied
Optical Connector ⁵	FC/APC
Input Voltage	+9 to +36 VDC
Power Consumption	typ 7.5 W, max 8.5 W
EMC Certification	Per BS EN 61326-1 edition 2006
Hazardous Area Certification (optional)	Per ATEX for hazardous zones 0, 1 or 2 with gas groups IIA, IIB or IIC Link to certification

1. 4, 8, 12 and 16 channel [Modular SmartScan](#) also available.
 2. Measured over 1 minute, standard uncertainty (1 σ distribution).
 3. Averaging allows 2, 4, or 8 times data reduction, improving repeatability.

4. Using FBG profile as shown.
 5. Connector required to be fitted on cable to mate with unit.

Specifications may change without notice

Ordering Information

Product Type	# of Channels	Scan Rate	Temp. Rating	USB Logging	ATEX Certified	World Zone Plug
S-Scan	XX	X	XX	X	X	XX
	01	F	55	U	EX	UK
	02	L	60			EU
	03					US
	04					CN
						IN

Order code example:

S-Scan-04-F-55-U-EX-EU

Variant Description	Variant Options	Variant Code
# of Channels	1 Channels	01
	2 Channels	02
	3 Channels	03
	4 Channels	04
Scan Rate	2.5 kHz (40 nm)	F
	250 Hz (40 nm)	L
Operational Temp. Rating	-15 to +55 °C	55
	-20 to +60 °C	60
USB Logging to Removable USB Memory Device	USB Logging Enabled	U <small>(Maximum scan frequency 10 kHz)</small>
	USB Logging Disabled	Blank
ATEX Certification	ATEX Certified	EX
	Not ATEX Certified	Blank
Mains Plug World Zone	United Kingdom (IEC Type G)	UK
	European Union (IEC Type C, or F)	EU
	United States (IEC Type A or B)	US
	China (IEC Type A, C or I)	CN
	India (IEC Type C, D or M)	IN