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*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 | 9 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<br>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<br>(Maximum scan frequency 10 kHz) |
| | USB Logging Disabled | Blank |
| ATEX Certification | ATEX Certified | EX |
| | Not ATEX Certified | Blank |
| Mains Plug World Zone | United Kingdom<br>(IEC Type G) | UK |
| | European Union<br>(IEC Type C, or F) | EU |
| | United States<br>(IEC Type A or B) | US |
| | China<br>(IEC Type A, C or I) | CN |
| | India<br>(IEC Type C, D or M) | IN |

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