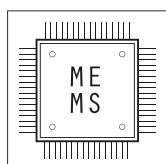


S430

BH PROFILE **IPI INCLINOMETERS**

INCLINOMETERS
& PENDULUMS



BH PROFILE INCLINOMETERS

BH-profile IPI gauges are designed for automatic, near-real-time monitoring of critical locations where displacement must be continuously tracked.

Each gauge consists of a stainless-steel body with a connection for a carbon-fibre extension rod on one side and a stainless-steel carriage with spring-loaded wheels on the other. A BH-profile chain consists of a series of gauges connected by carbon-fibre rods and completed with a top terminal wheel assembly.

The gauges are electrically interconnected through waterproof male/female connectors and connected to a readout unit or datalogger through a single digital bus cable.

For full installation and maintenance procedures, refer to the Installation & User Manual.

MAIN APPLICATIONS

- Landslides
- Dams
- Tunneling
- Deep excavations
- Unstable slopes

FEATURES

- Carbon-fibre rods provide lightweight strings and simplify installation
- The digital bus reduces wiring and speeds up installation
- Integrated humidity and power sensors provide diagnostic data in the event of gauge malfunction



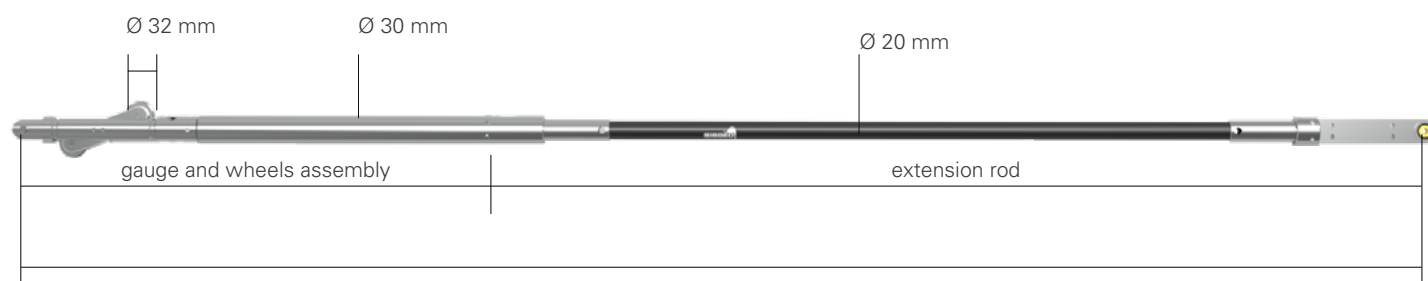
Meet the essential requirements of the EMC Directive 2014/30/EU

TECHNICAL SPECIFICATIONS⁽¹⁾

	OS432HD15S0	OS432HD30S0
Measurement principle	BIAXIAL MEMS inclinometer	
Measuring range	$\pm 10^\circ, \pm 15^\circ$	$\pm 20^\circ, \pm 30^\circ$
Sensor resolution	0.0001°	
Sensor repeatability	$\pm 0.001^\circ$	
Sensor mechanical bandwidth	1 Hz	
Sensitivity ⁽²⁾	see individual Calibration Report	
Sensor accuracy MPE ⁽³⁾	< $\pm 0.01\%$ FSR	
Sensor 24h stability ⁽⁴⁾	< $\pm 0.004^\circ$ @24h	
Repeatability (precision) of a string of BH profile elements ⁽⁵⁾	< ± 2.00 mm / 30 m (A-axis)	
Offset temperature dependency	$\pm 0.002^\circ / ^\circ\text{C}$	
Power supply	from 8 to 28 Vdc	
Signal output and protocol	RS-485 with Modbus RTU protocol ⁽⁶⁾	
A/D converter	sigma-delta 32 bit, 38-KSPS	
Average consumption ⁽⁷⁾	3 mA @ 24 Vdc, 6 mA @ 12 Vdc	
Temperature operating range	from -30°C to +70°C	
Built-in temperature sensor range accuracy	Temperature sensor (embedded in electronic board) from -40°C to +125°C $\pm 1^\circ\text{C}$ (-10°C to + 85°C)	

PHYSICAL FEATURES

	GAUGE AND WHEELS ASSEMBLY	EXTENSION ROD
Material	stainless steel	stainless steel joint tips and carbon fiber rod
IP class	IP68 up to 1.0 MPa (2.0 MPa on request)	—
Casing compatibility ⁽⁸⁾	Min. casing ID 58 mm - Max casing ID 83 mm	—
Gauge length / Total weight ⁽⁹⁾	1.0 m length / 2.30 kg - 1.5 m length / 2.40 kg - 2.0 m length / 2.50 kg	



(1) Performance are guaranteed for instruments installed in vertical casings whose inclination stays within $\pm 2^\circ$ of vertical at any point (see ISO 18674-3)

(2) Sensitivity is instrument-specific and reported in the individual Calibration Report.

(3) MPE = Maximum Permissible Error over the full-scale range (FSR). See the Calibration Report for details.

(4) Stability is measured as the difference after 24 h under repeatability conditions (ISO 18674-3).

(5) Repeatability test: 60-day test; reference reading taken 96 h after installation; 15-gauge chain, 2 m rods.

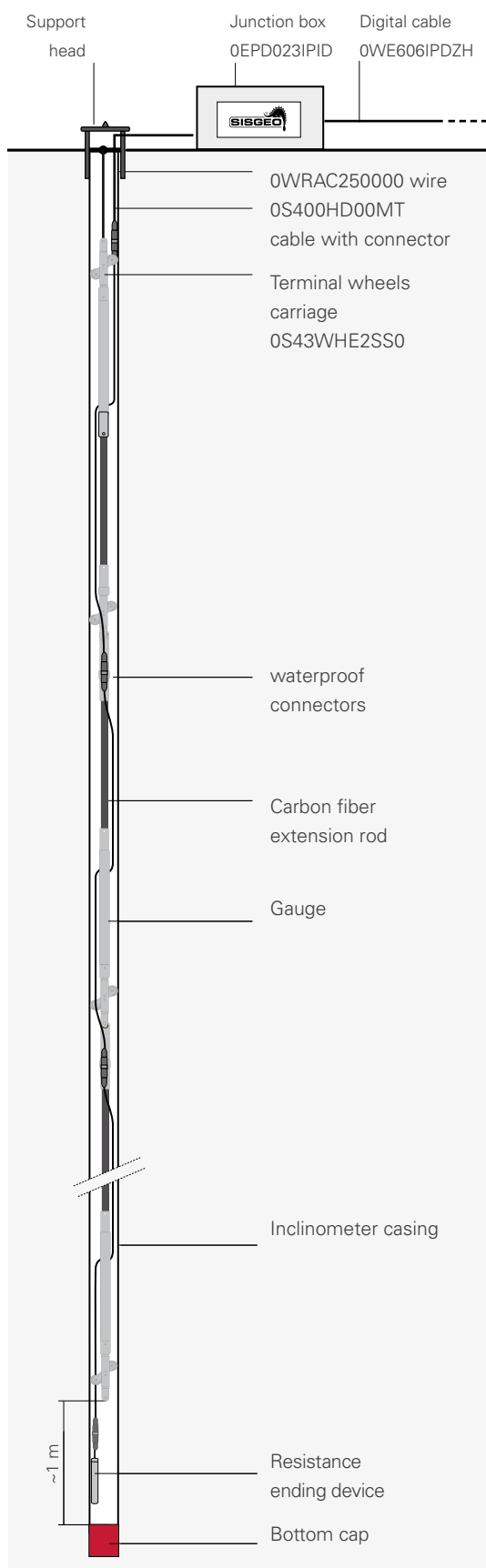
(6) RS-485 non-optoisolated Modbus communication with RTU protocol. Default output is sen α ; other available units are degrees, mm/m and inch/feet (available on request at the time of order). The Sisgeo Modbus protocol manual is available for download on [this page](#).

(7) Average consumption values apply to instruments starting from S/N S251186. Previous serial numbers may have different consumption values.

(8) We strongly recommend using Sisgeo ABS casing.

(9) As for ISO 18674-3 standard, total length should not exceed 2 m. Gauges with longer extension rods available on request. Performances of gauges with extension rods longer than 2m could be worst than what reported in this datasheet.

ACCESSORIES AND SPARE PARTS



CARBON FIBRE EXTENSION ROD 0S430EX00RD

Extension rod connected to the BH profile gauge at the factory. Available in different dimensions to reach a total length of 1.0 m, 1.5 m and 2.0 m (length to be specified when ordering).

TERMINAL WHEELS CARRIAGE 0S43WHE2SS0

Made of stainless steel, with a spring-loaded carriage and two wheels. Used to terminate the BH profile chain at the top.

UPPER CABLE WITH CONNECTOR 0S400HD00MT

Available in different lengths (2 m, 5 m, 10 m, 15 m), it consists of a signal cable with IP68 connector to connect the upper inclinometer probe to the junction box or local logger.

INCLINOMETER SUPPORT HEAD 0S4TS101000

Installed at the top of inclinometer casings to suspend the in-place inclinometer string

DIGITAL INCLINOMETER CABLE 0WE606IPDZH

LSZH cable for connecting the digital BH profile chain to the OMNIAlog datalogger.

DIGITAL JUNCTION BOX 0EPD023IPID

Junction box for chains of digital instruments, consisting of an IP67 plastic box, an internal electronic board for wiring, and three cable glands.

SUPPORT STEEL WIRE 0WRAC250000

Stainless steel support wire, Ø 2.5 mm (used to suspend the BH profile string).

RESISTANCE ENDING DEVICE 0ETERMRESIO

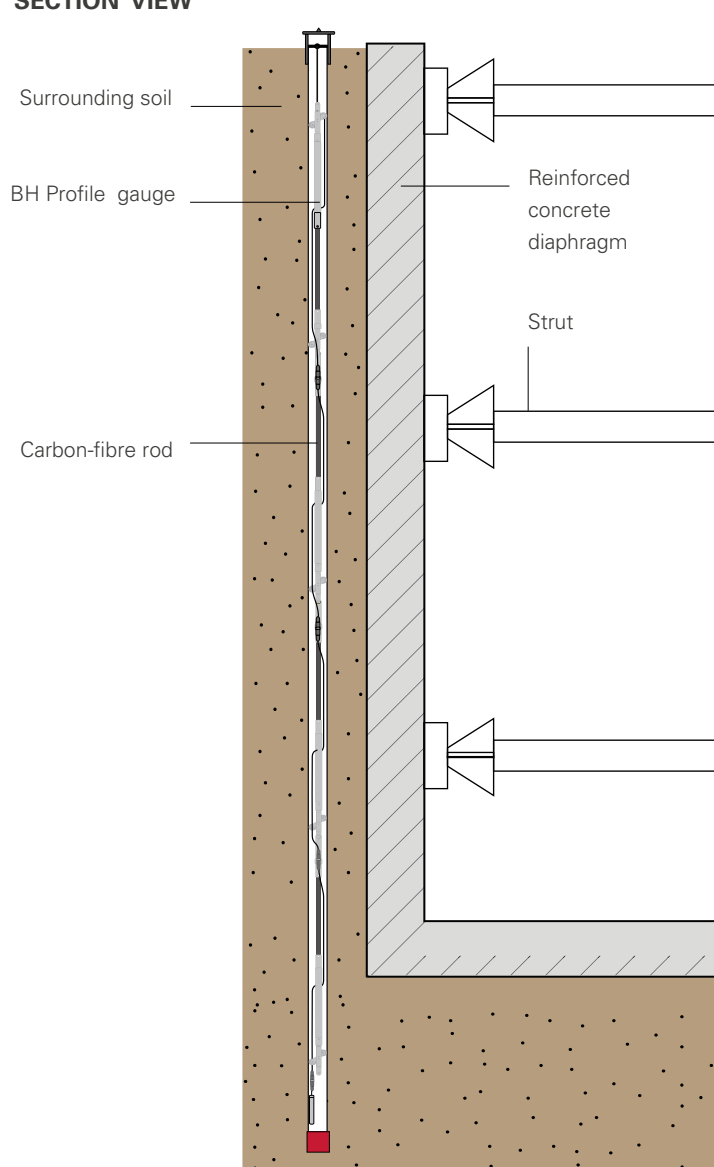
Termination resistor with connector, required to close each digital BH profile chain. The resistor value depends on the layout of each BH profile system. For more details, see [FAQ#076](#).

RESISTANCES KIT (SPARE) 0ERESIKIT00

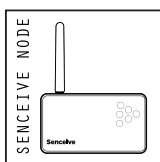
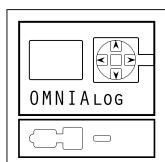
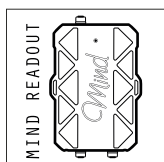
Kit consisting of one 120 Ohm, two 240 Ohm, three 360 Ohm and four 480 Ohm terminating resistors. Each resistor has an M12 5-pin connector for connection to SISGEO digital gauges. Check with Sales for compatibility with legacy instruments.

TYPICAL TRENCH INSTALLATION

SECTION VIEW



READABLE BY



For further information refer to their own datasheets

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The datasheet is issued in English and other languages. In order to avoid discrepancies and disagreement on the interpretation of the meanings, Sisgeo Srl declares that English Language prevails.

SISGEO S.R.L.

VIA F. SERPERO 4/F1
20060 MASATE (MI) ITALY
PHONE +39 02 95764130
FAX +39 02 95762011
INFO@SISGEO.COM

ADDITIONAL SUPPORT

SISGEO offers on-line assistance service to the Customers in order to maximize the performance of the system and training on the correct use of the instrument/readout.

For more information contact mail: assistance@sisgeo.com