S430

_ BH PROFILE

INCLINOMETER

INCLINOMETERS
& PENDULUMS

SISGEO®

S430_EN_01_06/2016

ME
MS

BH PROFILE

INCLINOMETER

BH profile gauges are designed for automatic monitoring of critical locations where displacement monitoring request a continuous and accurate borehole profiling.
The BH profile gauge consists of a stainless steel and thermoplastic resin assembly with one fixed wheel (close to the joint) and one spring loaded wheel.
BH profile is composed by a string of gauges with carbon fiber extension rods and an upper terminal wheels assembly to close the chain.
The string is connected to readout or datalogger with single digital bus cable (S430HD digital model) or through one signal cable from every BH profile inclinometer (S430HA analogue model).

APPLICATIONS

- Diaphragm walls
- Landslides
- Dams
- Tunneling
- Deep excavations
- Unstable slopes
- Piles

FEATURES

- Removable and modular system for multiple installation
- High accuracy
- CF rods grants light strings and simpler installation
- Available in both digital and 4-20mA version
- Real-time monitoring with OMNIAlog datalogger

CE *Meet the essential requirements of the EMC Directive 2004/108/EC*

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TECHNICAL SPECIFICATIONS

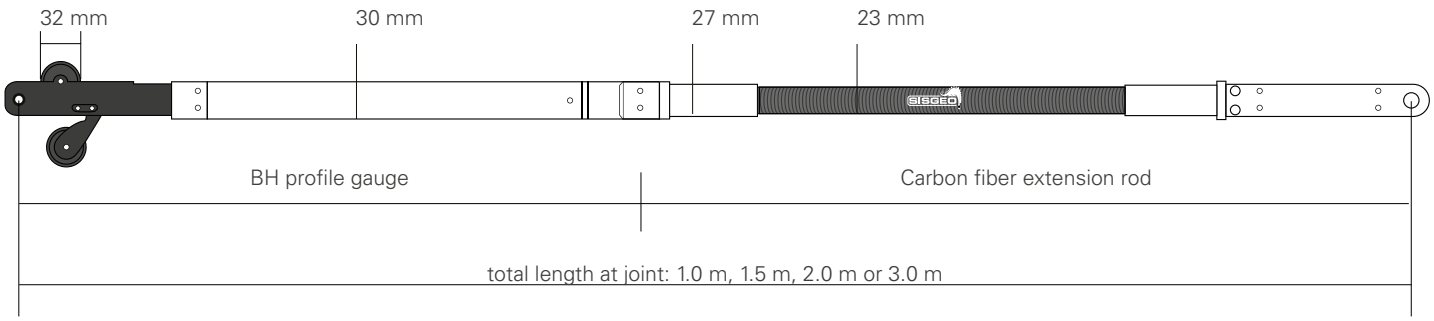
	S431HA15 UNIAXIAL S432HA15 BIAXIAL	S431HA30 UNIAXIAL S432HA30 BIAXIAL	S431HD15 UNIAXIAL S432HD15 BIAXIAL	S431HD30 UNIAXIAL S432HD30 BIAXIAL
Model	BH Profile (analogue version)		BH Profile (digital model)	
Sensor type	self-compensated MEMS inclinometer		self-compensated digital MEMS inclinometer	
Measuring range	±10°, ±15°	±20°, ±30°	±10°, ±15°	±20°, ±30°
Sensor sensitivity	0.0013° (4.68 arc-sec)		0.0013° (4.68 arc-sec)	
Gauge linearity	±0.150% FS for ±10°, ±20° ±0.200% FS for ±15°, ±30°		±0.025% FS for ±10°, ±15° ±0.070% FS for ±20°, ±30°	
Gauge total accuracy (1) with linear factor with 3rd degree polynomial	±0.050% FS		±0.010% FS for ±10°, ±15° ±0.015% FS for ±20°, ±30°	
Repeatability	± 0.007°		± 0.005°	
Offset temperature dependancy	± 0.003% FS /°C		± 0.002% FS /°C	
Sensitivity temperature dependancy	± 0.005% FS /°C		± 0.005% FS /°C	
Excitation voltage	from 18 to 30 Vdc		from 12 to 24 Vdc	
Signal output	4-20 mA (current loop)		RS-485 with Modbus RTU protocol (sen α)	
Temperature operating range	from -30°C to +70°C		from -30°C to +70°C	
Built-in temperature sensor -range -accuracy	thermistor from -50°C to +150°C ±0.5 °C		Temperature sensor of electronic board from -30°C to +60°C ±1 °C	

(1) including linearity, hysteresis and repeatability

PHYSICAL FEATURES

	BH PROFILE SENSED GAUGE	CARBON FIBER EXTENSION ROD
Body diameter	30 mm	23 mm
Material	stainless steel body and thermoplastic resin carriage	stainless steel joint and carbon fiber body
Protection	IP68 up to 1.0 MPa	--
Casing compatibility	Min. casing ID 54mm(2) - Max casing ID 83 mm	--
Total weight	1.0 m length: 1.80 kg - 1.5 m length: 1.88 kg - 2.0 m length: 1.95 kg - 3.0 m length: 2.1 kg	

(2) suggested minimum ID 60 mm



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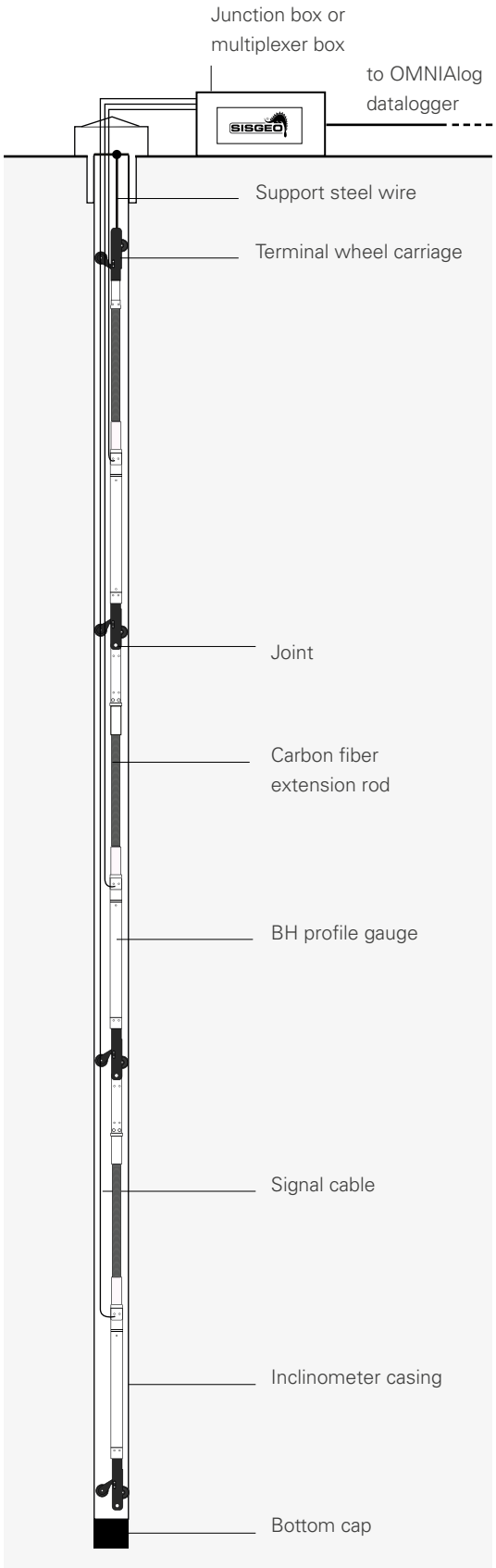
ACCESSORIES AND SPARE PARTS FOR BH PROFILE (ANALOGUE VERSION)



CARBON FIBRE EXTENSION ROD OS430EX00RD

Extension rod is rigidly connected to the BH profile gauge at factory. Available in different dimensions to reach a total length of 1.0 m, 1.5 m, 2.0 m and 3.0 m.

SIGNAL CABLE OWE106IP0ZH

24 AWG, 6 conductors cable for 4-20mA analogue version with LSZH flame-retardant external jacket. External diameter 5 mm.

SUPPORT STEEL WIRE OWRAC200000

It is used to suspend the BH profile within the inclinometer casing. Diameter 2 mm.

TERMINAL WHEEL CARRIAGE OS43WHE2SS0

Composed by one fixed wheel and one spring loaded wheel. It permits to end the BH profile at the top.

INCLINOMETER SUPPORT HEAD OS4TS101000

It can be installed at the top of inclinometer casing for hanging the BH profile.

MULTIPLEXER BOX 00MN00MUXB0

Relays multiplexer board with surge arrestors, mounted in IP67 plastic box for the connection of up to 16 biaxial or 24 uniaxial BH profile gauges. It allows local reading with New Leonardo readout or remote connection to OMNIAlog datalogger through RS485 digital bus.

MUX BOX - OMNIA CABLE OWE610MUXZH

Cable with LSZH flame retardant jacket for the connection of multiplexer boxes to OMNIAlog datalogger.

OVP JUNCTION BOX 0EPDP000W00

IP67 plastic box with 3-level OVP Over Voltage Protection boards (model 0EXKV306W00) for the connection of up to 10 biaxial or 15 uniaxial BH profile gauges.

MULTICORE CABLE OWE1320LSZH

Multicore cable for the connection of OVP junction box to OMNIAlog. Composed by 16 twisted pair conductors and LSZH flame retardant jacket. External diameter 12.2 mm.

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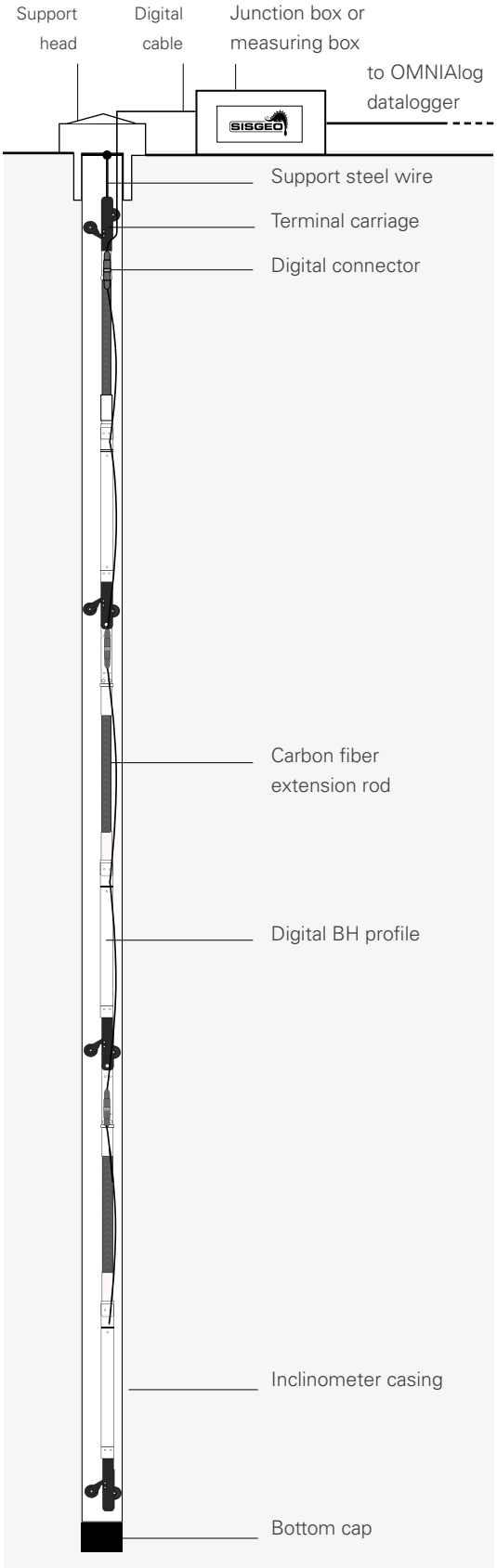
ACCESSORIES AND SPARE PARTS FOR BH PROFILE (DIGITAL MODEL)



CARBON FIBRE EXTENSION ROD OS430EX00RD

Extension rod is rigidly connected to the IPI probe at factory. Available in different dimensions to reach a total length of 1.0 m, 1.5 m, 2.0 m and 3.0 m.

SUPPORT STEEL WIRE 0WRAC250000

It is used to suspend the BH profile within the inclinometer casing. Diameter 2.5 mm.

DIGITAL CONNECTOR 0EC0N04MV00

Male connector mounted at factory on the 0WE606IPDZH digital cable. It is needed to joint the female connector of the upper BH profile gauge.

DIGITAL JUNCTION BOX 0EPD023IPID

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

TERMINAL WHEEL CARRIAGE OS43WHE2SS0

Composed by one fixed wheel and one spring loaded wheel. Permits to end the BH profile at the top.

INCLINOMETER SUPPORT HEAD OS4TS101000

It is installed at the top of inclinometer casings for hanging the in-place inclinometer string.

DIGITAL INCLINOMETER CABLE 0WE606IPDZH

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

MEASURING BOX 0EPM010IPI0

Measuring box for manual reading of digital BH profile gauge string with New Leonardo readout, composed by IP67 plastic box with electric board for cable wiring, cable gland and female pannel connector.

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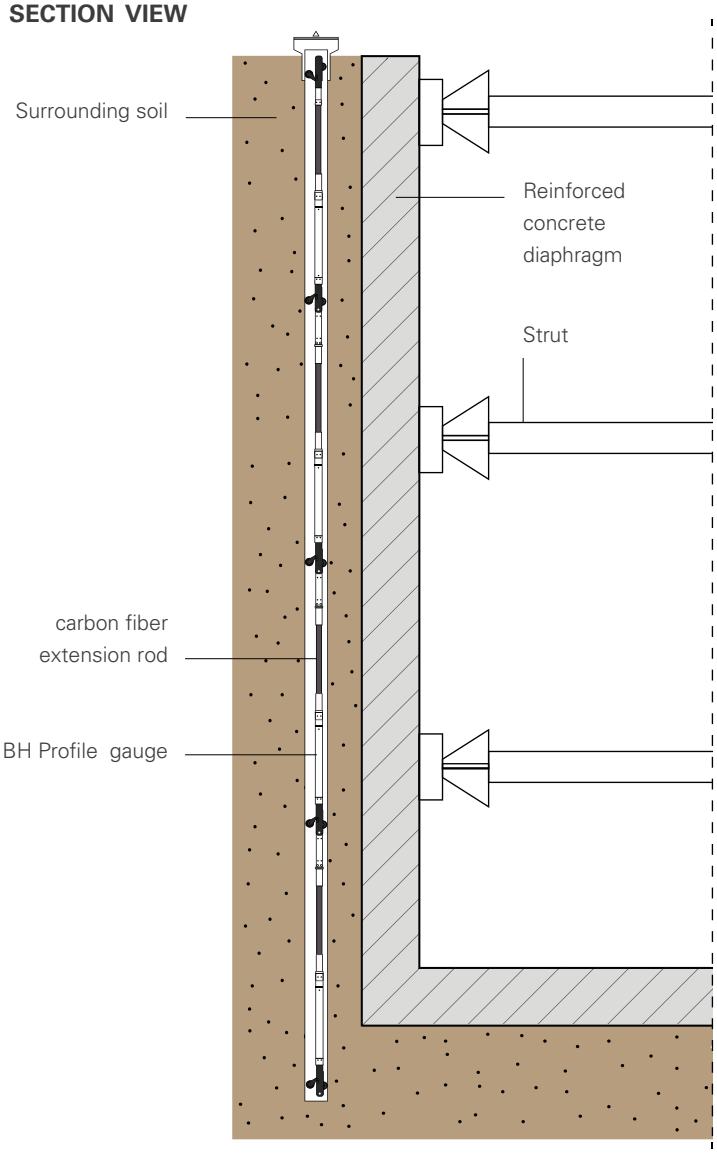
TYPICAL TRENCH INSTALLATION

SECTION VIEW



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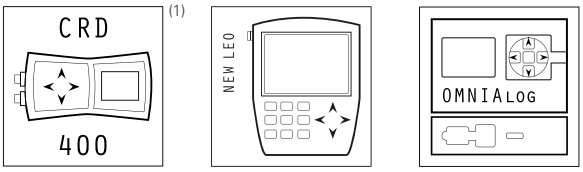

(1) Only for analogue version (mod. S430HA)

For further information refer to their own datasheets

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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***