



— SISGEO'S INSTRUMENTS:
WHAT'S NEW
OCTOBER 2015

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— DIGITAL RS-485 INSTRUMENTS: WARNINGS AND CABLE LENGTHS

In EVERY order that include digital instruments, Sisgeo need information regarding number of chain of digital gauges, chain's length, and number of gauges for each chain.

All RS-485 digital instrument chains must be closed with a resistance → In quotations add one 0ETERMRESI0 for each chain of digital instruments

If digital instruments are removed and installed in other location, the resistance termination must be checked with Sisgeo technical department for correct dimensioning and if needed must be substituted (same code 0ETERMRESI0)

— DIGITAL RS-485 INSTRUMENTS: WARNINGS AND CABLE LENGTHS

Maximum cable lengths and number of digital instruments per chain/logger is a critical point for digital instruments. Everything is described in the FAQ#073 in Sisgeo web site:

<http://www.sisgeo.com/faq-readout-units-and-dataloggers/faq-073-which-is-the-maximum-number-of-digitized-sensors-rs-485-modbus-the-maximum-number-of-chains-and-the-maximum-length-of-cable-in-a-rs-485-network.html>

Mainly:

- Max number of gauge in one RS485 chain (theoretically): 254 nos.*
- Max number of chain connectable to one OMNIAlog: 4 nos.*
- Max chain length:*
 - 250m continuous chain, max 50 gauges*
 - 1000m from first gauge to OMNIA, using WE606IPDZ cable*

__ BH PROFILE IN-PLACE INCLINOMETERS

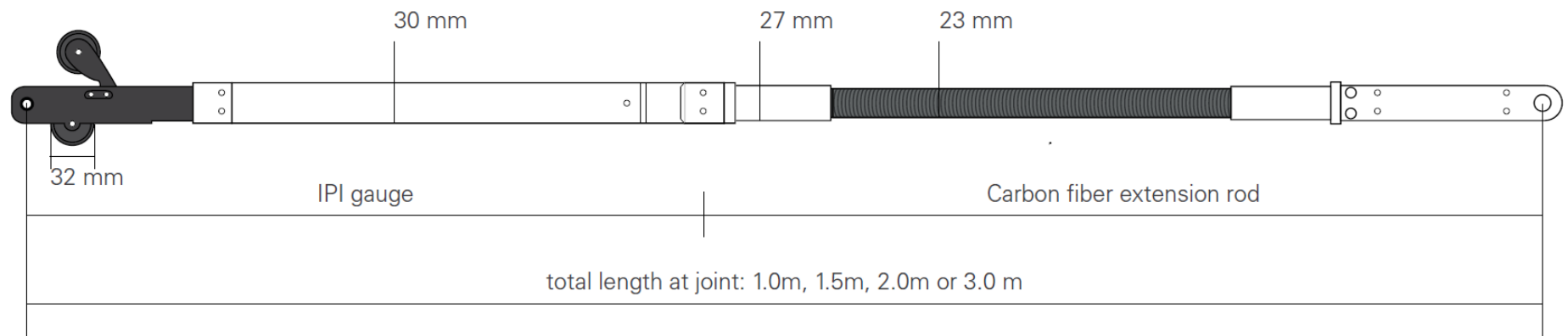
BH Profile inclinometers are utilized where displacement monitoring requires continuous borehole profile

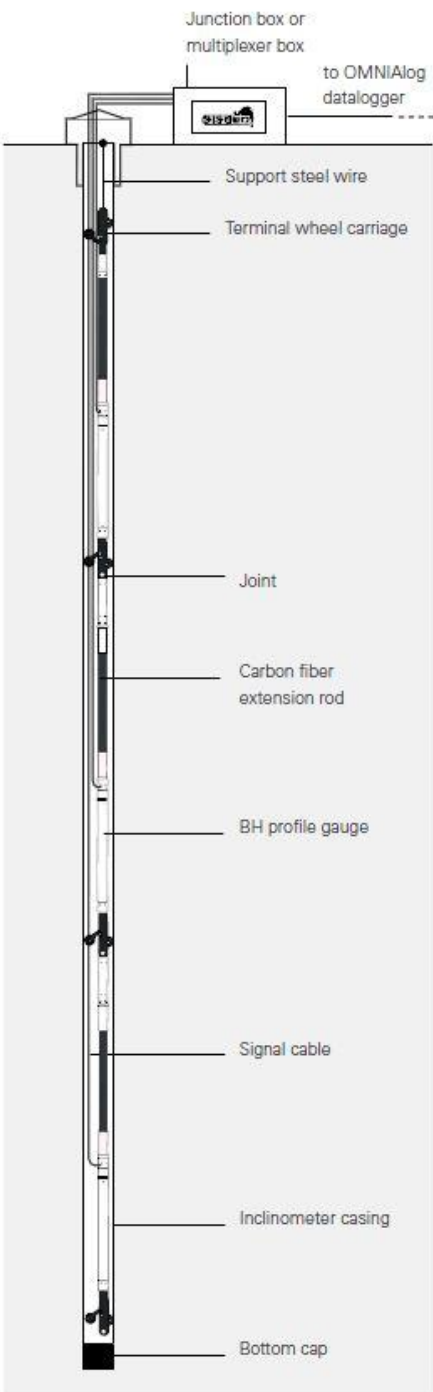
Ref datasheet:

http://www.sisgeo.com/uploads/schede/schede/S430_EN-00_BH_profile_inclinometer.pdf

PLUS Vs COMPETITORS:

Carbon fiber rod give more stiffness and lightness to the chain than common stainless steel rods

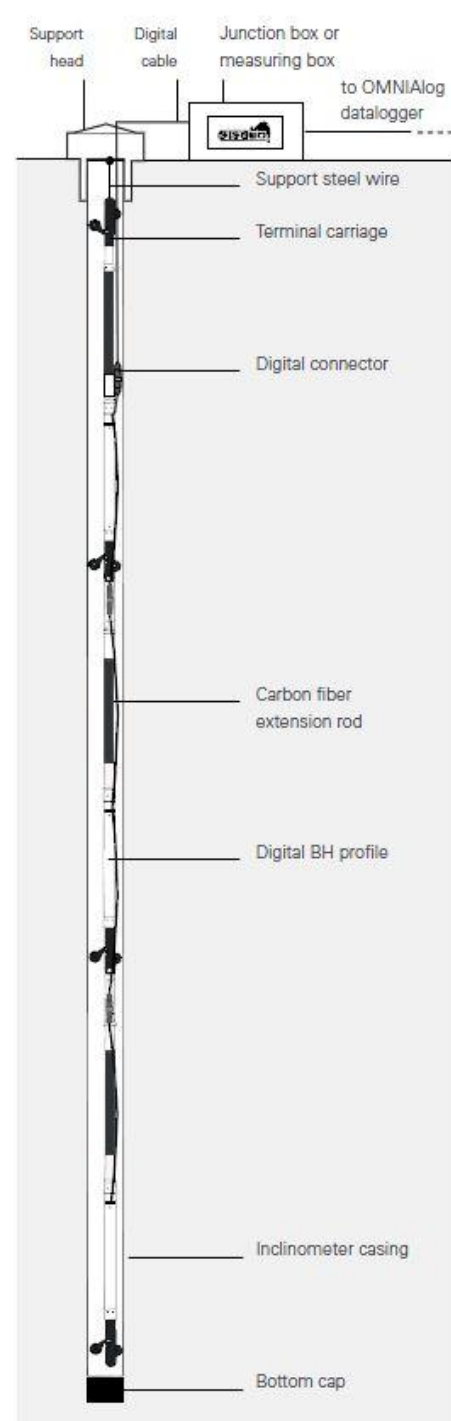




BH PROFILE ANALOGUE INCLINOMETERS

Analogue (4-20mA output):

*Max 10-15 probe per borehole,
each probe has its own signal cable.*



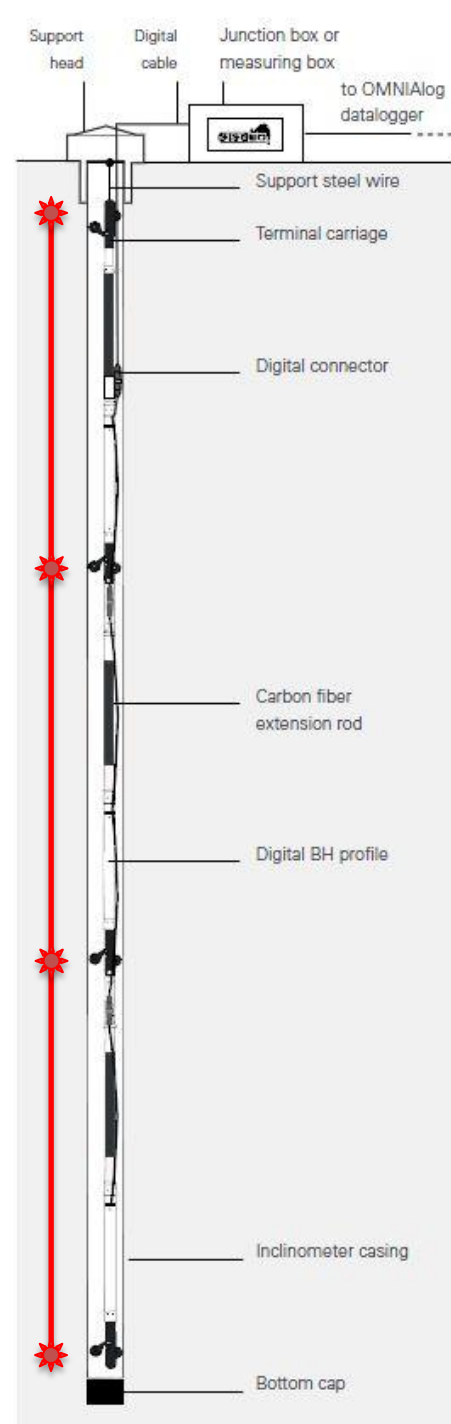
BH PROFILE DIGITAL INCLINOMETERS

Digital (RS-485 output):

Up to 50 BH Profile probes per borehole (chain with more than 50 probes shall be discussed with Sisgeo technical department)

Each probe have two signal connectors that link the probes one to each other.

Sisgeo commonly suggest to utilize digital BH profile instead of analogue probes due to simplicity in installation, wiring and number of probes in one chain.



BH PROFILE

Vs

IPI

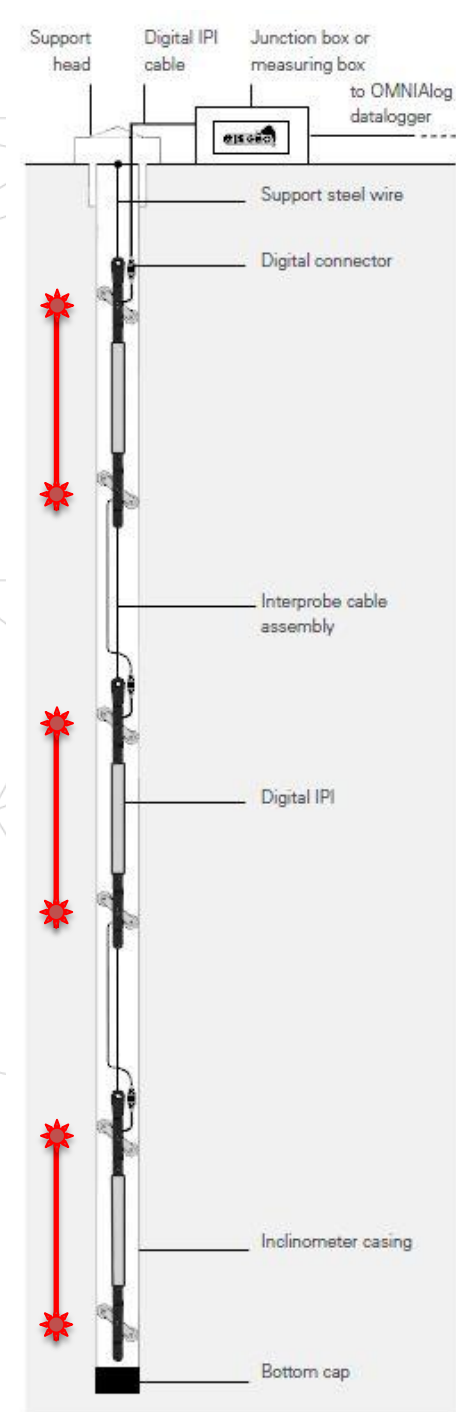
*BH Profile provide continuous borehole profiling
(i.e. 30m borehole with
15 BH profile probes, 2 m long)*

*IPI are installed at different dept in
borehole to monitor displacement
at some depth,
NOT complete borehole profile
(i.e. 30m borehole with
5 IPI probes, one every 5 m)*

IPI Ref datasheet:

http://www.sisgeo.com/uploads/schede/schede/S410_EN-

[08 In place inclinometers.pdf](#)

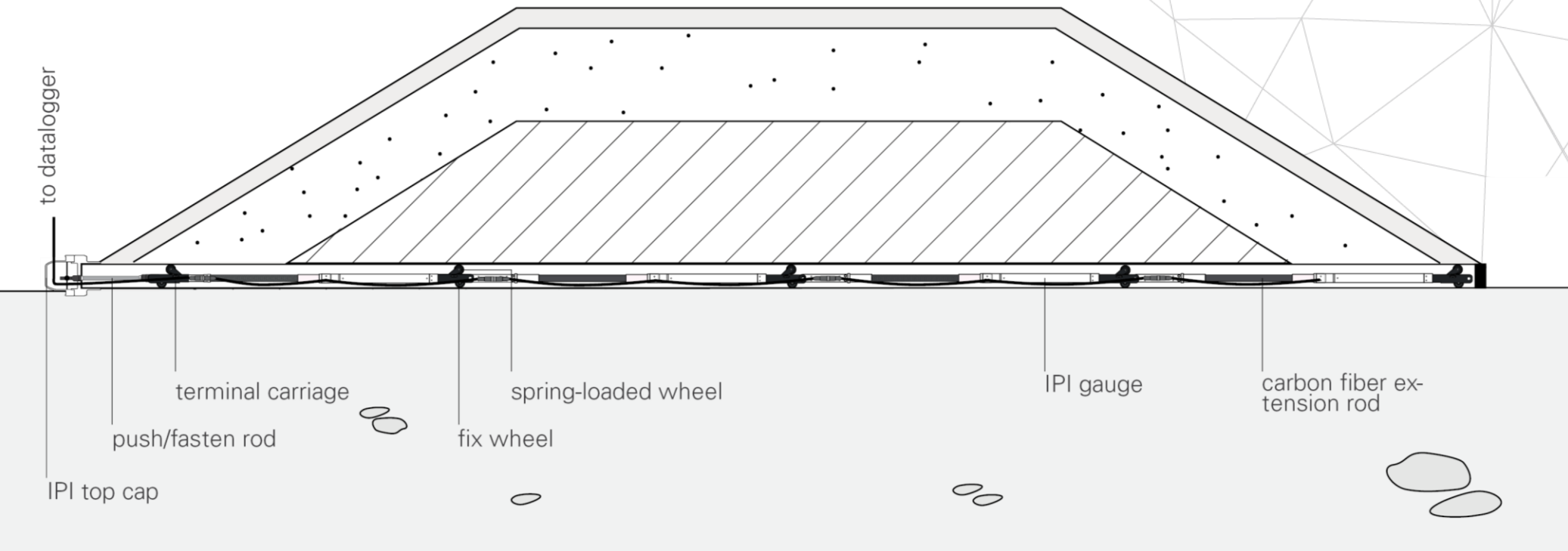


__ HORIZONTAL IPI → HORIZONTAL BH-PROFILE

*Horizontal In-Place Inclinometers are
ONLY uniaxial BH-Profile model.*

Ref datasheet:

http://www.sisgeo.com/uploads/schede/schede/S441_EN_00_horizontal_in_place_inclinometer.pdf



__ HORIZONTAL IPI → HORIZONTAL BH-PROFILE

UNDER DEVELOPING

Near to releasing: system for stainless steel rods to place BH-Profile inclinometer not only in continuous chain, but also with some space between two gauges (i.e. one gauge every 6 m)

*Joint between
two rods*

*Joint between two rods with
wheels to support rod's weight*

— RED STRIPE INCLINOMETER CASING

S131 ABS casing has changed name in “Red Stripe”. All the features remain the SAME.

Ref datasheet:

http://www.sisgeo.com/uploads/schede/schede/S131_EN_12_ABS_red_stripe_inclinometric_casing.pdf

With “simple” red stripe casings, the only change from “ribbed S131” is the red straight line on the white casing.

Couplings remain the same.

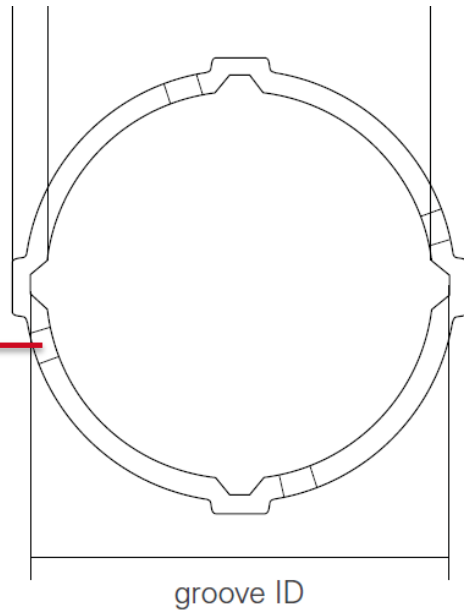


__ RED STRIPE SELF COUPLING (SC) INCLINOMETER CASING

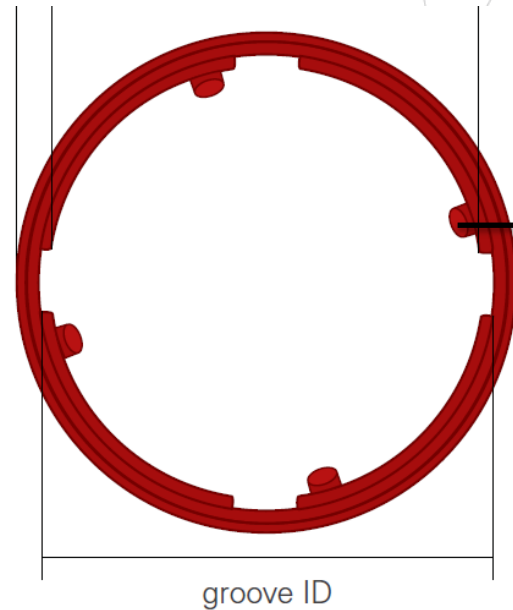
Self Coupling (SC) casings have special couplings with internal pins, and casing machined at the ends (4 holes) to fit the pins. This solution permits to do not use drilling machine and rivets, but just align and push coupling and casing.

Note: Special glue/cement is under testing in order to do not taping the casing to prevent grout incoming.

Hole at casing end



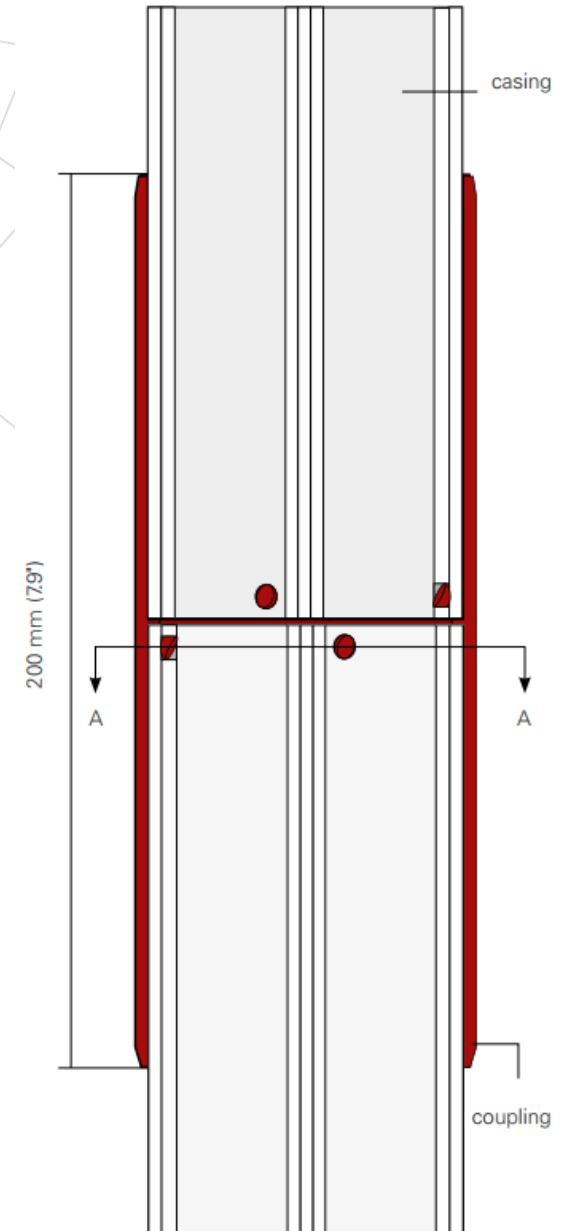
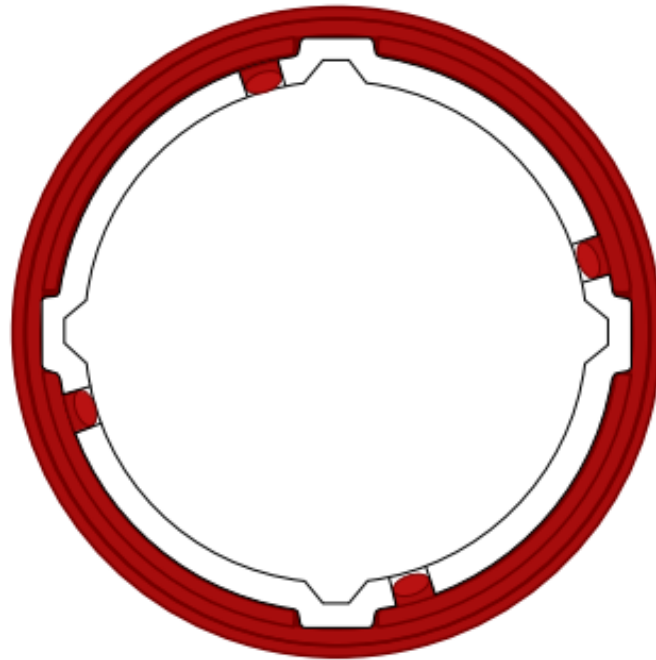
CASING CROSS-SECTION



SELF-COUPLING CROSS-SECTION

— RED STRIPE SELF COUPLING (SC) INCLINOMETER CASING

*Red stripe SC tube
after jointing*



__ BACKBAG INCLINOMETER CONTROL CABLE

Product code **0S2SB600000**

Inclinometer light (digital) control cable is available without reel, with connectors at the ends, supplied with back bag

Ref datasheet, page 5:

http://www.sisgeo.com/uploads/schede/schede/S200D_EN_14_Digital_mems_inclinometer_system.pdf

PLUS:
Cheap
and
extremely light



— NEW MAGNET RINGS WITH 6 SPRINGS

Now available magnet rings with 6-spring for:

- magnet extensometer
(product code **0D111AF6060**)

http://www.sisgeo.com/uploads/schede/schede/D111_EN_06_magnet_extensometer.pdf

- inclino-settlement column
(product code **0S131AF6060**)

[http://www.sisgeo.com/uploads/schede/schede/S141_EN_18_flush_coupled inclinometer casing.pdf](http://www.sisgeo.com/uploads/schede/schede/S141_EN_18_flush_coupled_inclinometer_casing.pdf)

Developed to suite requests and tenders where 6-spring magnet rings are required (i.e. RST or Slope Indicators)



___ T-REX & DEX: ENHANCED PERFORMANCES

Developed a new line of sensors that provide highest performances

*T-REX: measuring range ± 50 mm (100 mm)
measuring base: 1000 mm*

*DEX: available with following ranges:
 ± 50 mm (100 mm)
 ± 250 mm (500 mm)
 ± 500 mm (1000 mm)*

*DEX-S: available with following settlement range:
 ± 50 mm (100 mm)*

— T-REX: ENHANCED PERFORMANCES

With the new sensor, T-Rex system (T-Rex probe + cable + Archimede) reach the following performances:

T-REX SYSTEM PERFORMANCE

(PROBE, CONTROL CABLE AND ARCHIMEDE READOUT)

System repeatability	± 0.02 mm over 1000 mm	Maximum error under repeatability condition of measurement (same procedures, same operator, same measuring system same operating condition and same location) over a short period of time.
System reading resolution	0.01 mm over 1000 mm	The smallest increment (1 digit) shown on the readout.
System accuracy	± 0.04 mm over 1000 mm	The accuracy that can be obtained in the field.

Ref datasheet:

[http://www.sisgeo.com/uploads/schede/schede/T-REX_EN_03 - T-Rex_incremental_extensometer.pdf](http://www.sisgeo.com/uploads/schede/schede/T-REX_EN_03_-_T-Rex_incremental_extensometer.pdf)

— T-REX: CALIBRATION DEVICE

Product code **OREX0CALOFR**

It is utilized to check the calibration of the probe in the laboratory before and/or after the surveying.

This device is mainly composed by a ceramic tube, that have very little thermal coefficient of expansion, two magnetic rings and horizontal surface support.

NOT for field use



___ DEX & DEX-S: ENHANCED PERFORMANCES

With the new developed sensors, DEX reach better total accuracy (linearity+hysteresis+repeatability)

Ref datasheet:

UNDER REVISION, AVAILABLE SOON

PRODUCT CODE	ACCURACY EXTENSOMETER	ACCURACY INCLINOMETER
ODEX3501000 (Range 100 mm)	$\pm 0.25\%$ FS (± 0.25 mm)	-
ODEX3502000 (Range 500 mm)	$\pm 0.08\%$ FS (± 0.4 mm)	-
ODEX3510000 (Range 1000 mm)	$\pm 0.08\%$ FS (± 0.8 mm)	-
ODEX35S102B (Range 100 mm, $\pm 10^\circ$)	$\pm 0.25\%$ FS (± 0.25 mm)	$\pm 0.07\%$ FS (± 0.12 mm/1000 mm)
ODEX35S202B (Range 100 mm, $\pm 20^\circ$)	$\pm 0.25\%$ FS (± 0.25 mm)	$\pm 0.07\%$ FS (± 0.24 mm/1000 mm)

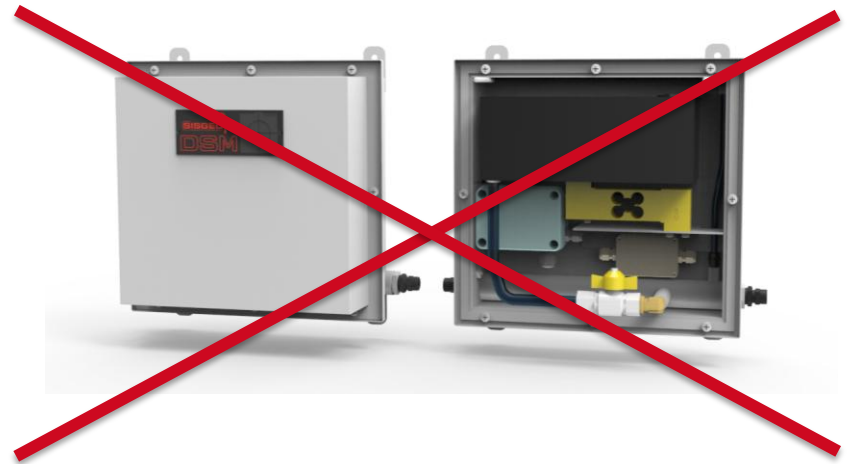
__ H-LEVEL AND DSM HYDRAULIC SETTLEMENT SYSTEMS



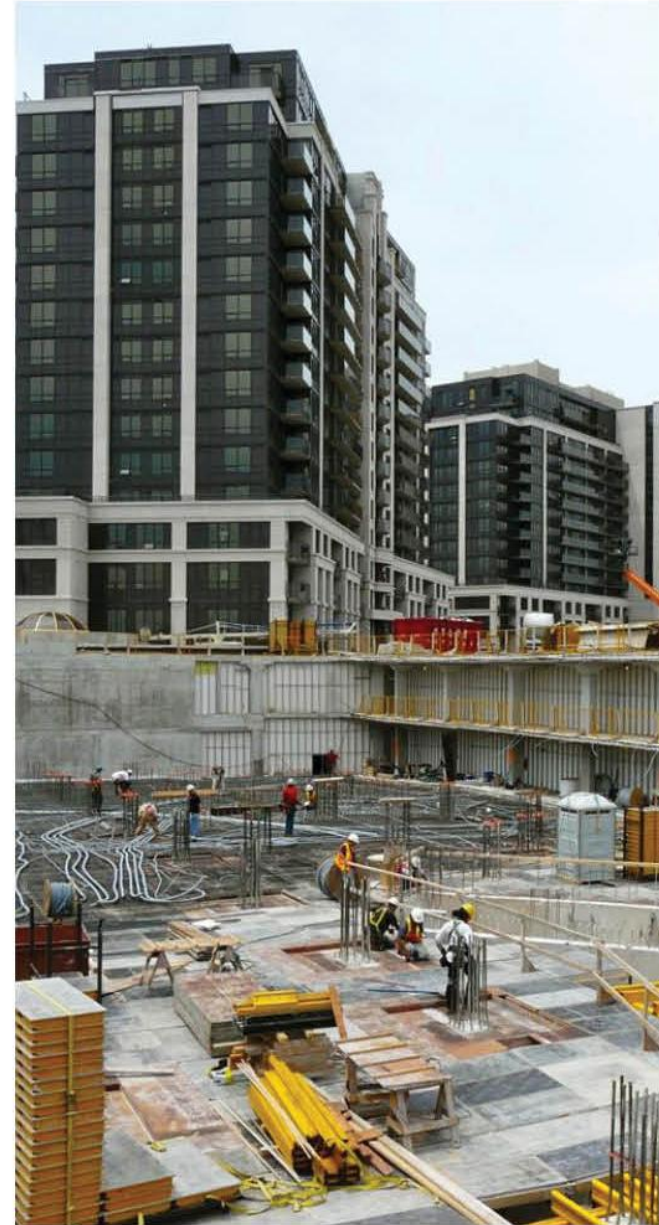
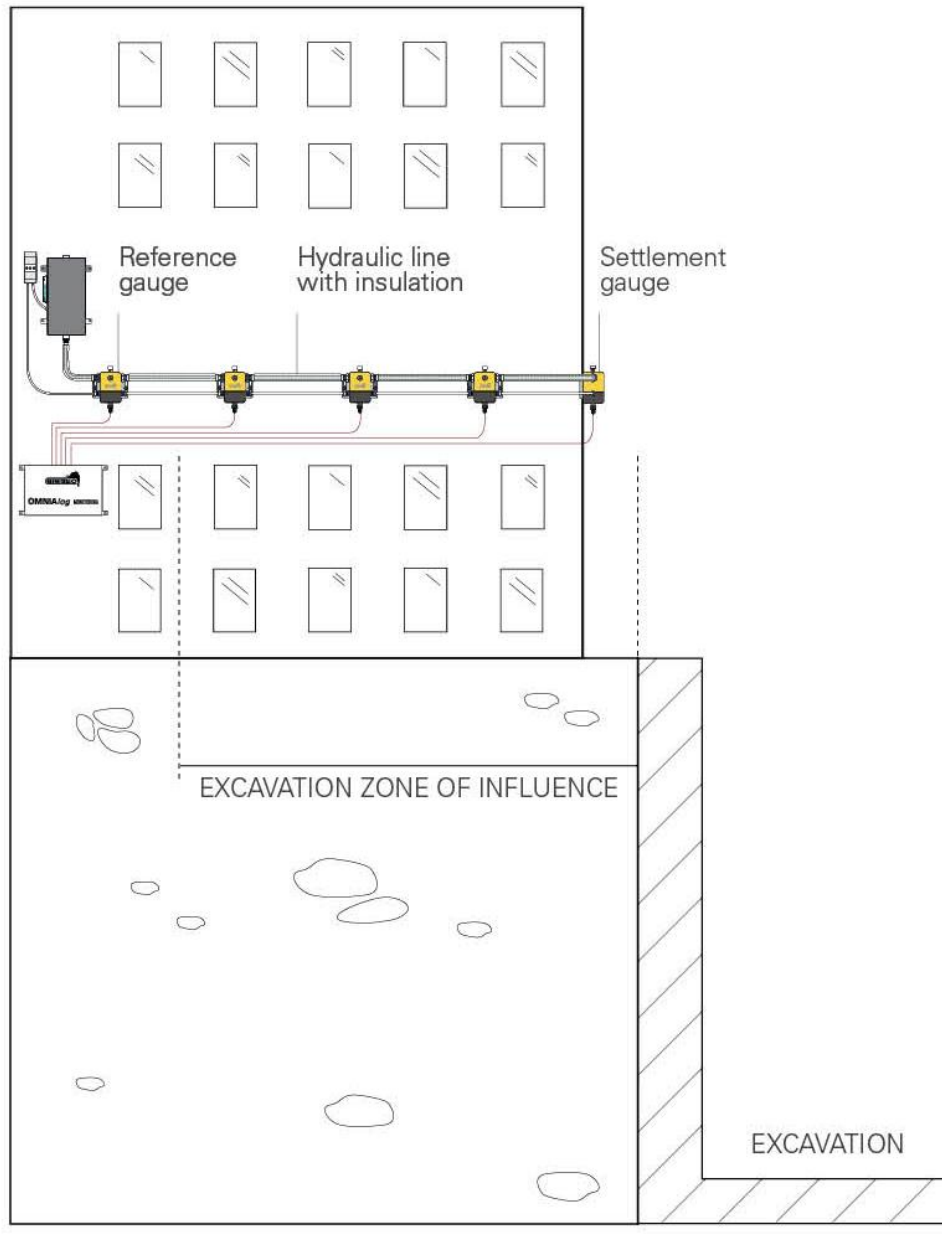
H-Level system substitutes the DSM building settlement gauge

Ref datasheet:

http://www.sisgeo.com/uploads/schede/schede/H-LEVEL_EN_00_H-Level.pdf



__ EXAMPLE OF H-LEVEL BUILDING SETTLEMENT SYSTEM

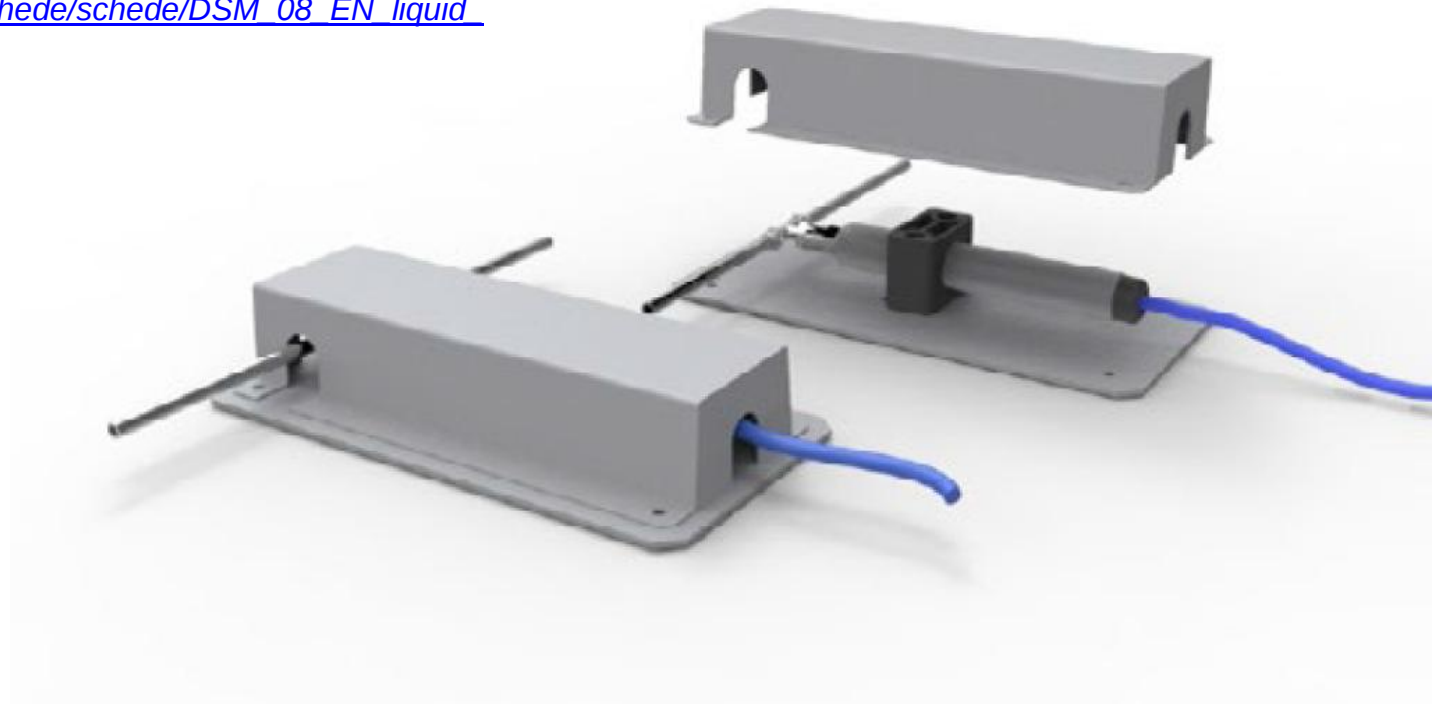


___ DSM EMBANKMENT HYDRAULIC SETTLEMENT SYSTEMS

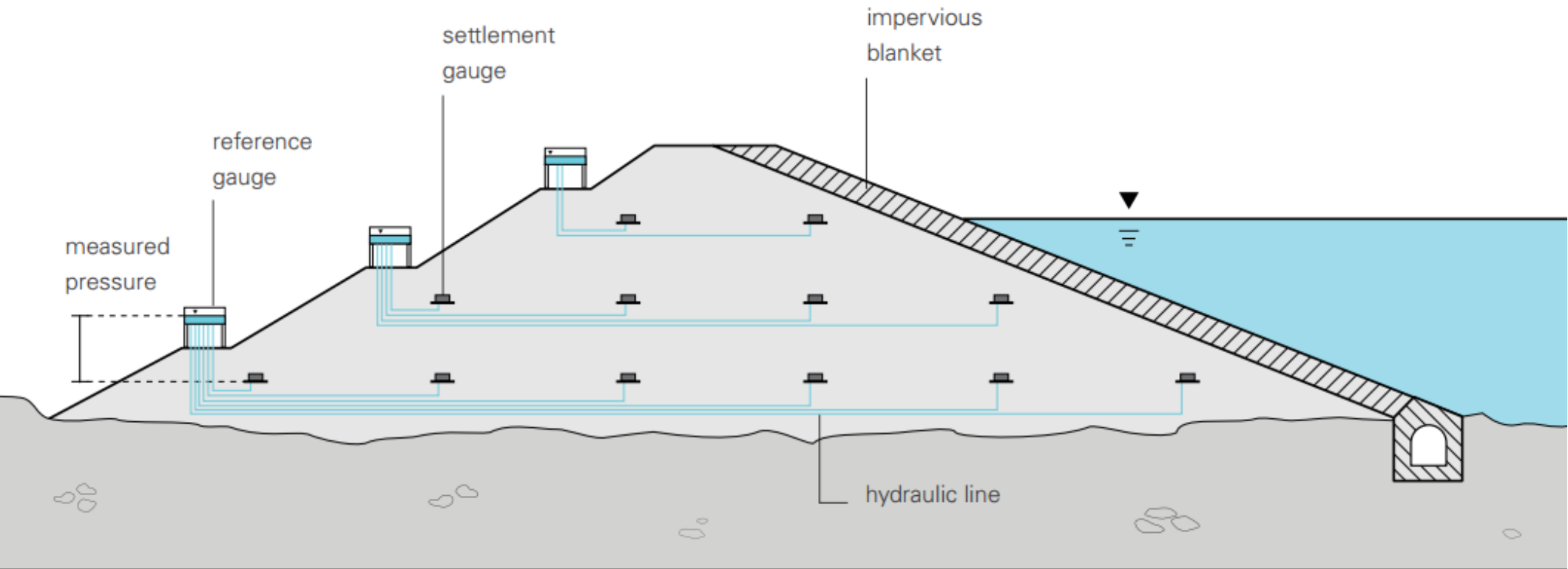
*For embankment applications,
DSM system remains the same*

Ref datasheet:

http://www.sisgeo.com/uploads/schede/schede/DSM_08_EN_liquid_settlement_gauges.pdf



__ EXAMPLE OF DSM EMBANKMENT SETTLEMENT SYSTEM



___ H-LEVEL: REFERENCE TANK

After some experiences with the auto-refilling reference tank, the R&D department suggest to use a simple tank, not auto-refilling tank.

This solution was choosed to prevent errors coming from small leackages in the hydraulic circuit: after one year of experiences, we do not saw leackages in the installed systems, so a simple tank without auto-refilling will be ok.

___ H-LEVEL: SOME NOTES FOR SALES

- *The signal connector of H-Level gauges will be supplied NOT mounted on signal cable*
- *Take care about FS to be proposed that shall be higher than maximum expected difference between reference tank and lower H-Level gauge*
- *Liquid mix volume (**1000LIGL100**) in LITERS can be calculated as (with some spare):*

(HIDR.TUBE LENGTH[m]/10) + (7xREF TANK QUANTITY)

__ L2CX ELECTRIC LOAD CELL

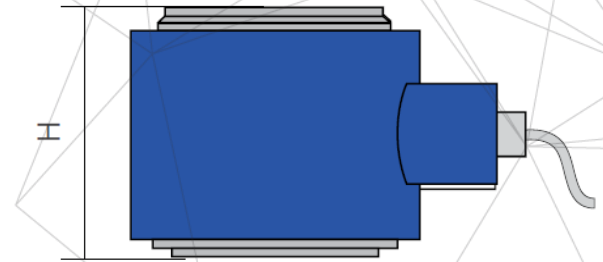
L2CX solid load cell substitute in the price list L2CT load cells

Ref datasheet:

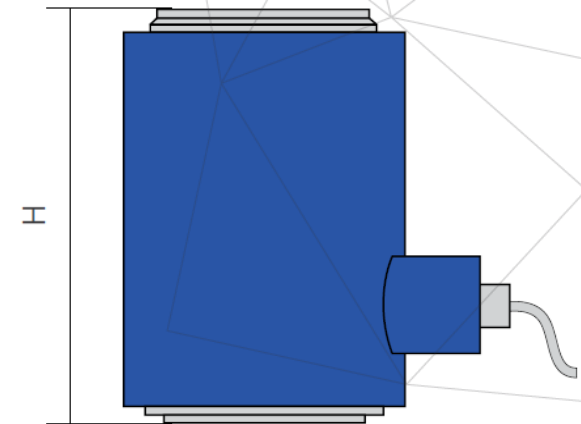
http://www.sisgeo.com/uploads/schede/schede/L2CT_EN_01_Solid_resistive_load_cells.pdf

L2CX have lower height (H) than L2CT, so more simple to install but accuracy is worse ($\pm 0.5\%$ FS than $\pm 0.1\%$ FS)

L2CT still remain in the datasheet for customized proposal (ask price @ Sisgeo)



L2CX load cell



L2CT load cell

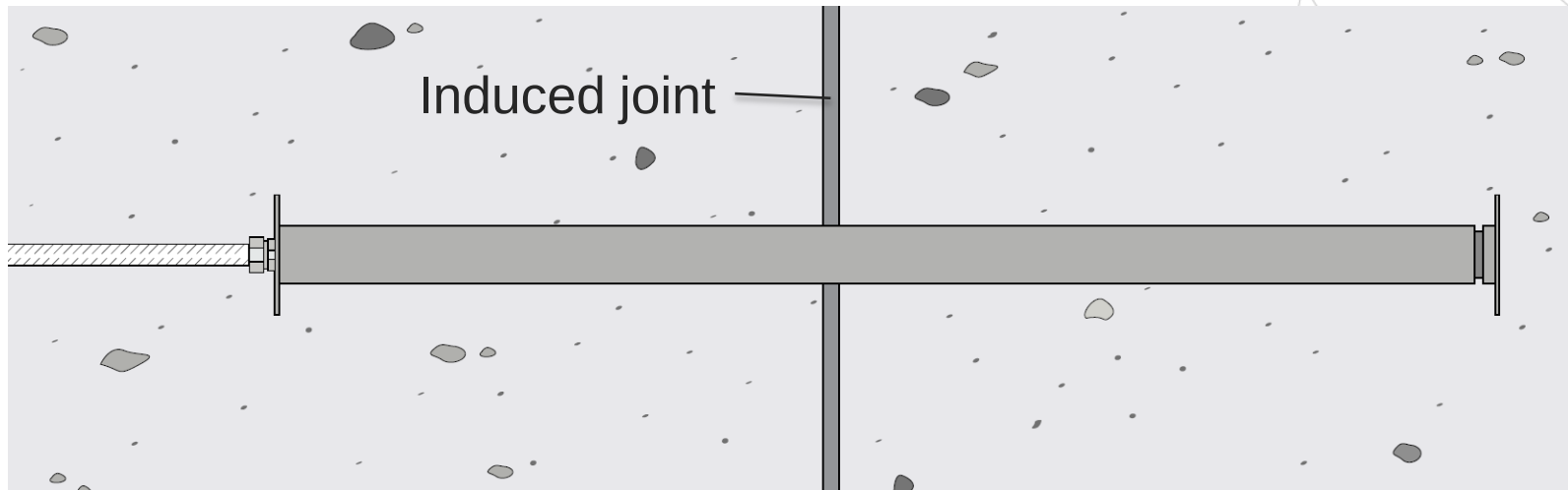
— VW DEFORMATION METER

Product code: **0D233000L10**

VW deformation meters (also named LBSG - Long Base Strain Gauges) are mainly designed to be embedded into concrete or RCC (Rolled Compacted Concrete) dams in order to measure expansion of induced joints.

Ref datasheet:

http://www.sisgeo.com/uploads/schede/schede/D233_EN_00_vibrating_wire_deformation_meters.pdf



— MPBX: NEW LONGER TOP CAP

Product code: **0D222TOP520**

*New top cap to suite installations
with 150 mm and 200 mm
displacement transducers*

Ref datasheet:

http://www.sisgeo.com/uploads/schede/schede/D222_EN_03_MPBX_multipoint_borehole_extensometer.pdf



___ MEXID MPBX: AVAILABLE IN SINGLE BASE MODEL

0D2MX01A050: *MEXID single point extensometer with 4-20mA output, 50mm range*

0D2MX01A150: *MEXID single point extensometer with 4-20mA output, 150mm range*

0D2MX01W050: *MEXID single point extensometer with vibrating wire transducer, 50mm range*

0D2MX01W150: *MEXID single point extensometer with vibrating wire transducer, 150mm range*

Ref datasheet:

http://www.sisgeo.com/uploads/schede/schede/D2MX_MEXID_EN_01_mexid_miniaturized_extensometer.pdf

— SPECIAL CABLES FOR NEW LEONARDO

Product code: **0ECAV04V200**

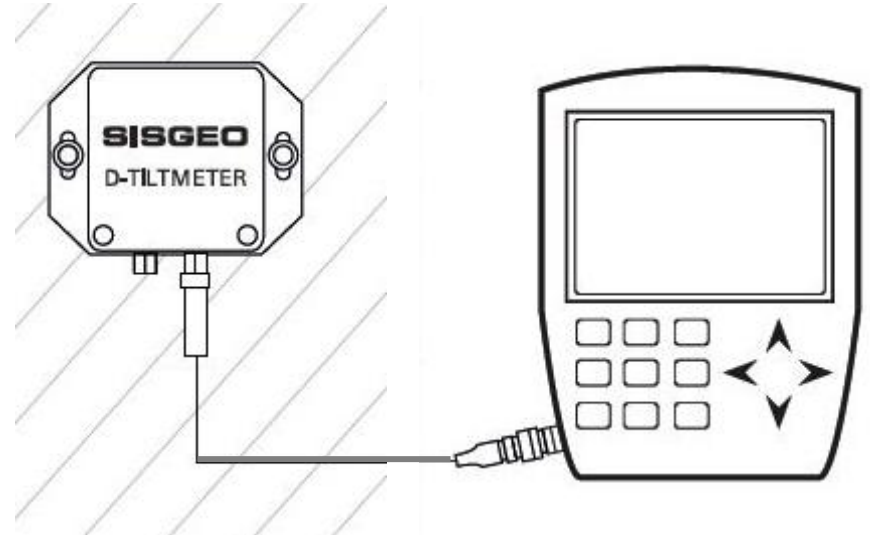
*cable for direct connection between
New Leonardo readout and digital
tiltmeters.*

Ref datasheet:

http://www.sisgeo.com/uploads/schede/schede/S5HD_EN-01_D-TILTMETERS_Digital_MEMS_tilt_meters.pdf

PLUS:

Useful for instrument testing
before installation
and during installation
procedures



New Leonardo
portable datalogger

— SPECIAL CABLES FOR NEW LEONARDO

Product code: **0ECAV04V300**

*cable for direct connection between
New Leonardo readout and digital
gauges like IPI, BH profile and RDS*

PLUS:

Useful for instrument testing
before installation
and during installation
procedures

___ CABLES: AVAILABLE WITH PVC JACKET (NO LSZH)

*New line of cheaper signal and multicore cable with PVC jacket
(NO LSZH, not suitable where LSZH standard is required)*

OWE104SG0PV: *2 twisted pairs, 4.8 mm OD*

OWE104K00PV: *2 twisted pairs, 7.6 mm OD*

OWE104X20PV: *2 twisted pairs, 7.7 mm OD,
armoured with galvanized steel wire braid*

OWE116000PV: *8 twisted pairs, 8.2 mm OD*

OWE132000PV: *16 twisted pairs, 11.2 mm OD*

Ref datasheet:

http://www.sisgeo.com/uploads/schede/schede/CABLES_EN_01_Signal_cables.pdf

— VDV AND WMS WEB SOFTWARE

Available soon for proposals the well known software

Vista Data Vision

OMNIAlog and miniOMNIAlog shall push automatically data to an FTP and acquired data will be shown on dedicated web pages with graphs, data tables, project plant/sections, pictures, etc...

Alerting could be also setted-up with many other features.

NOTE: WMS WEB SOFTWARE REMAIN THE OUR REFERENCE SOFTWARE FOR BIG PROJECTS

Dedicated web page:

<http://www.sisgeo.com/cables-accessories-and-software/wms-web-monitoring-system.html>

Vista Data Vision - Login x

https://sisgeo.vdvcloud.com

App Previsioni Meteo Ge... Saderhof - Südtirol ... Importati da IE SMARTFILE - Sisgeo... Vista Data Vision - L... Huawei P8 lite Smar... Nokia Lumia 735 S...

SISGEO DELIVERING SOLUTIONS

WELCOME TO VDV SOFTWARE LOGIN PAGE

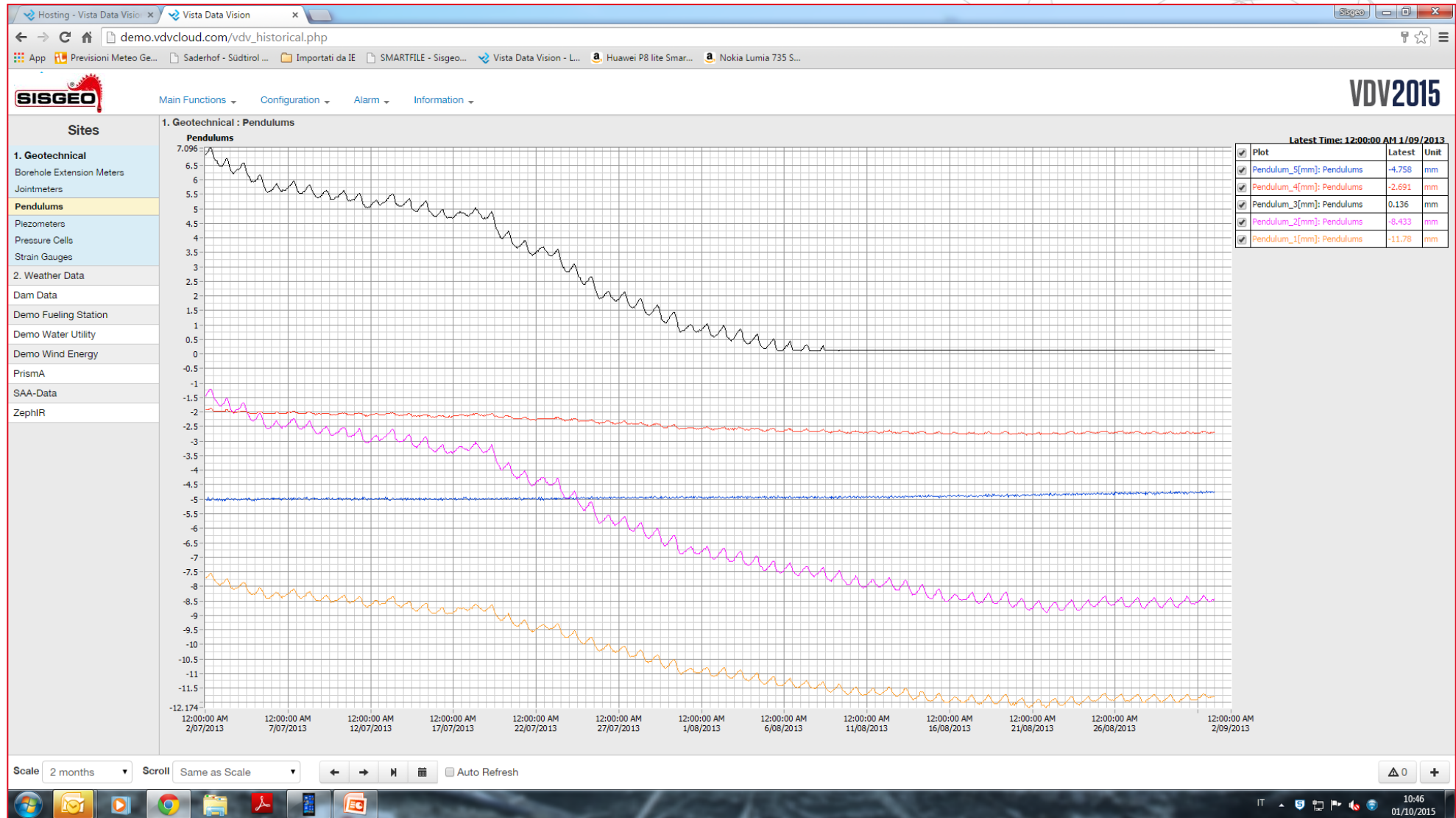
USER NAME

PASSWORD

LOG IN

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www.vistadatavision.com

09:41
23/10/2015



— DATALOGGERS

OMNIALOG

MINIOMNIALOG



___ DATALOGGERS: INDEX

OMNIALOG

- *New grey housing*
- *Humidity sensor*
- *24-channel model*

MINIOMNIALOG

- *Removable wiring connectors*
- *3G modem*
- *Tool for PC/laptop connection*

- *SD card corruption/ new file system*
- *'SKIPPED' function*
- *Wireless version*
- *Algorithm for vibrating wire readings and tracking function*
- *OMNIAlog and miniOMNIAlog calibration*

— OMNIAlog: NEW GREY HOUSING

*Sisgeo logo
removed*

*ONLY
“OMNIAlog”
logo*

*Internal
batteries
space
removed*

*Baseplate
modified*

*Wiring
connectors
now simpler
to remove*



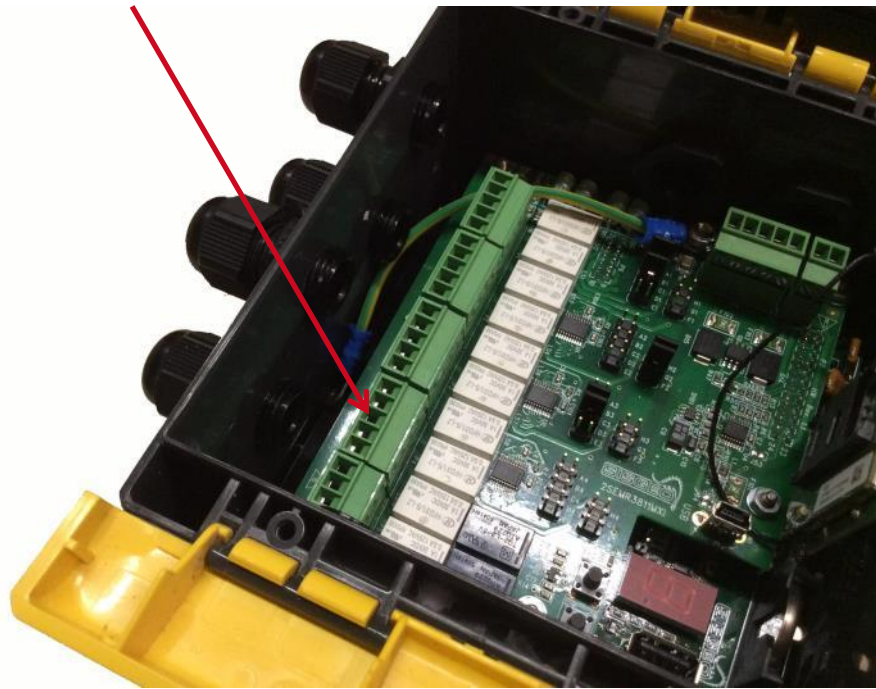
— OMNIALog: HUMIDITY SENSOR

- *The on-board humidity sensor is no-more available on the market*
- *It is under evaluation the possibility to insert as “OPTION” in the price list of a digital humidity and atmospheric pressure gauge*

- *It is under testing and developing a new OMNIAlog with 24 on-board analogue channels (2-wire)*
- *Will be possible to expand the number of channels of the DAS with internal and/or external multiplexer boards*
- *Channel configuration of the on-board channels will follow the actual multiplexer channel configuration*

— MINIOMNIALog: REMOVABLE WIRING CONNECTORS

*The wiring connectors on miniOMNIAlog now are bigger, removable and with screws.
(old model had clamping-connectors)*



3G technology is compatible with 2G technology. In locations covered only by 3G signal (2G not present) miniOMNIALog will be able to send data (i.e. many locations in Australia)

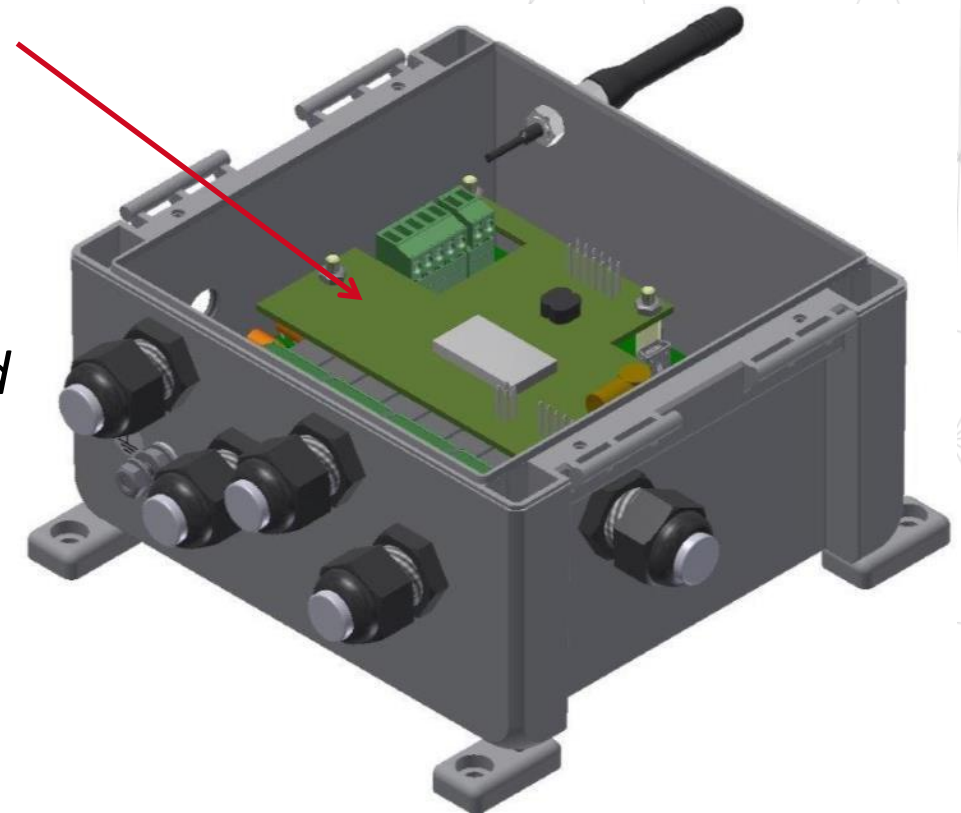
In the new 3G modem, could be added a specific chipset to make compatible miniOMNIALog in Countries where providers do use CDMA networks (i.e. Verizon, Sprint)

— MINIOMNIALOG: 3G MODEM

UNDER DEVELOPING

The 3G modem board will have special shape customized for miniOMNIA installation.

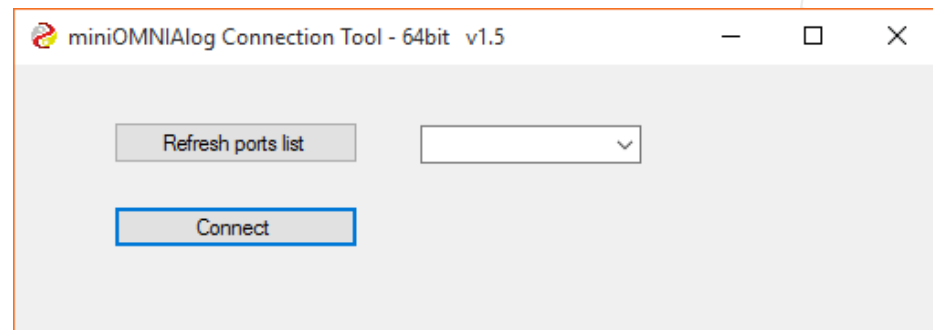
The new board is designed to be more rugged and simplify SIM card inserting.



— MINIOMNIALOG: CONNECTION TOOL

It is available from few months a simple tool for miniOMNIAlog local connection to laptop/PC.

- *Compatible with Windows XP, Seven, 8.1 e 10 (32 & 64 bit)*
- *Simple interface*
- *Admin user required*
- *No installation required*



— OMNIALOG E MINIOMNIALOG: “SKIPPED” FUNCTION

The new “SKIPPED” function permits to set-up a channel but to do not read it.

In the export file, the channel will be exported with the note “skipped”.



When this function become useful?

If the user utilize a management software (i.e. WMS, VDV, etc...) the “skipped” channel help to do not re-configure the management software for each new set-up of logger.

— NEW ALGORITHM FOR READING VIBRATING WIRE GAUGES

The new algorithm was designed and developed for OMNIAlog, miniOMNIAlog and CRD-400 readout.

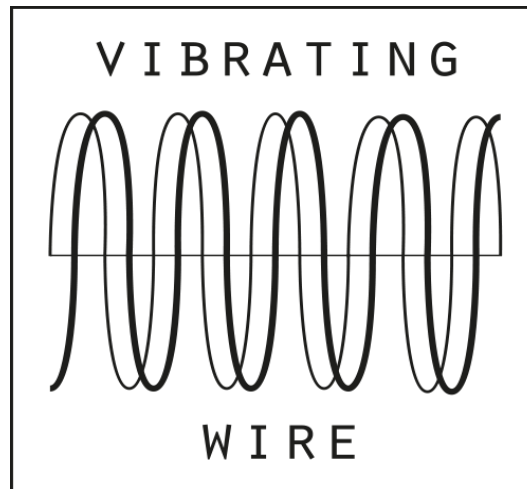
It become really important in location with high environment noisy or low instrument signal.

- *Double scan (with different initial frequency)*
- *Noisy removal*
- *Adaptive wire excitation*
- *Peaks excitation*

— OMNIALOG & MINIOMNIALOG: “TRACKING” FUNCTION

The TRACKING function permits to avoid the searching phase: to read a VW gauge, the wire is excited at the frequency of the last reading.

Usually, the frequency value do not change so much from one reading to the next one, so that this solution permit to save time and have more readings in less time.

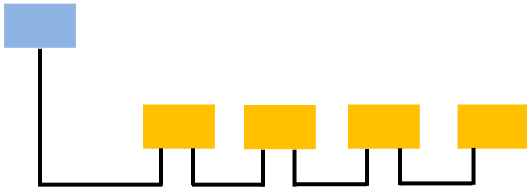


— OMNIAlog: FIBER OPTIC COMMUNICATION BUS

*OLD ADK-100
fiber optic network*



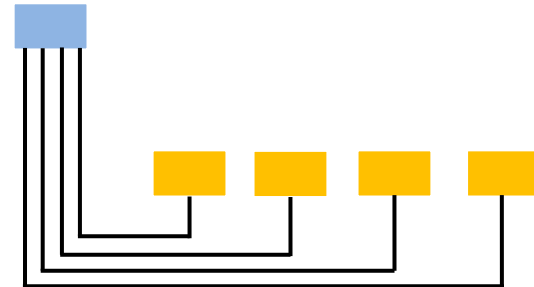
*IN-OUT
SERIAL CONFIGURATION*



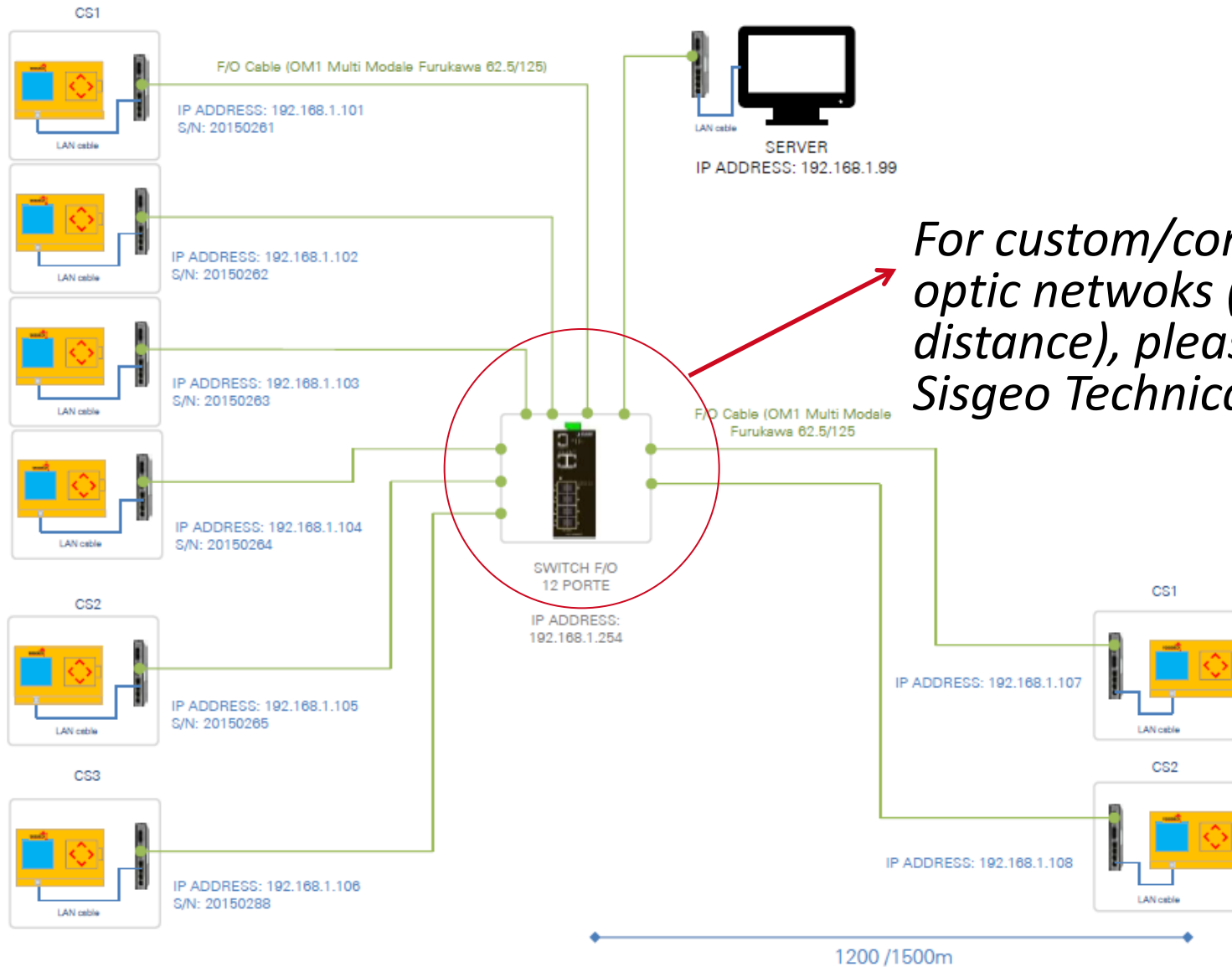
*OMNIAlog
fiber optic network*



*STAR
CONFIGURATION*



— OMNIALog: FIBER OPTIC COMMUNICATION BUS



For custom/complex fiber optic networks (i.e. long distance), please contact Sisgeo Technical Dept.

— MINIOMNIALOG: SOLAR PANEL

The solar panel kit available in the price list (00MX24V030W) is customised for OMNIAlog needs:

Solar panel: 10 W

Battery: 2.3 Ah

If Customers need solar panel kit with higher capacity (bigger battery / panel) will be mandatory to contact Sisgeo's technical department because shall be necessary to filter the power given by the solar kit.



www.latinoamerica.sisgeo.com

Gracias

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