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Newsteo Potentiometric loggers Product Specification

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Revisions

Revision	Issue Date	Author	Comments
1.0	August 18th, 2011	AC	
1.1	February 27 th , 2014	AC	Merge with LGP33 reference
1.2	January 10 th , 2017	AC	Modification of the connexion cables PFPN-FISSU-005 - Crackmeter probe 4 added

Table of contents

1	Introduction	4
2	Summary of the product functioning	4
3	Newsteo Potentiometric logger	5
3.1	Technical characteristics	5
3.1.1	Measurement accuracy / interface	5
3.1.2	Casing	5
3.1.3	Power supply / Autonomy	6
3.1.4	Other characteristics	6
3.2	Casing specification	7
3.3	Starting of the logger	7
3.4	Certification	7
4	Newsteo probes and connection cables	8
4.1	Cables	8
4.1.1	PFPN-SES58-001	8
4.2	Crackmeter probes	9
4.2.1	Crackmeter probe 1	9
4.2.1.1	PFPN-FISSU-001	9
4.2.1.2	PFPN-STI58-002	10
4.2.2	Crackmeter probe 2	11
4.2.2.1	PFPN-FISSU-002	11
4.2.2.2	PFPN-STI58-003	11
4.2.3	Crackmeter probe 3	12
4.2.3.1	PFPN-FISSU-003	12
4.2.3.2	PFPN-STI58-004	12
4.2.4	PFPN-FISSU-005 - Crackmeter probe 4	13
5	How to order?	14

Table of figures

Figure 1: Functioning	4
Figure 2: LGS casing	7
Figure 3: PFPN-SES58-001 (cables and quick connectors)	8
Figure 5: FISSU-001	9
Figure 6: PFPN-STI58-002	10
Figure 7: PFPN-FISSU-002	11
Figure 8: PFPN-STY58-003	11
Figure 9: PFPN-FISSU-003	12
Figure 10: PFPN-STI58-004	12
Figure 9: PFPN-FISSU-005	13

1 Introduction

Object:

Define the products specifications in term of technical characteristics, physical dimensions, aperture, accessories and casing.

Products: potentiometric interface Loggers

	References	Interface
	PFPN-LGS31-001	Logger with potentiometric interface 1 input
	PFPN-LGP33-001	Logger with potentiometric interface 3 inputs

2 Summary of the product functioning

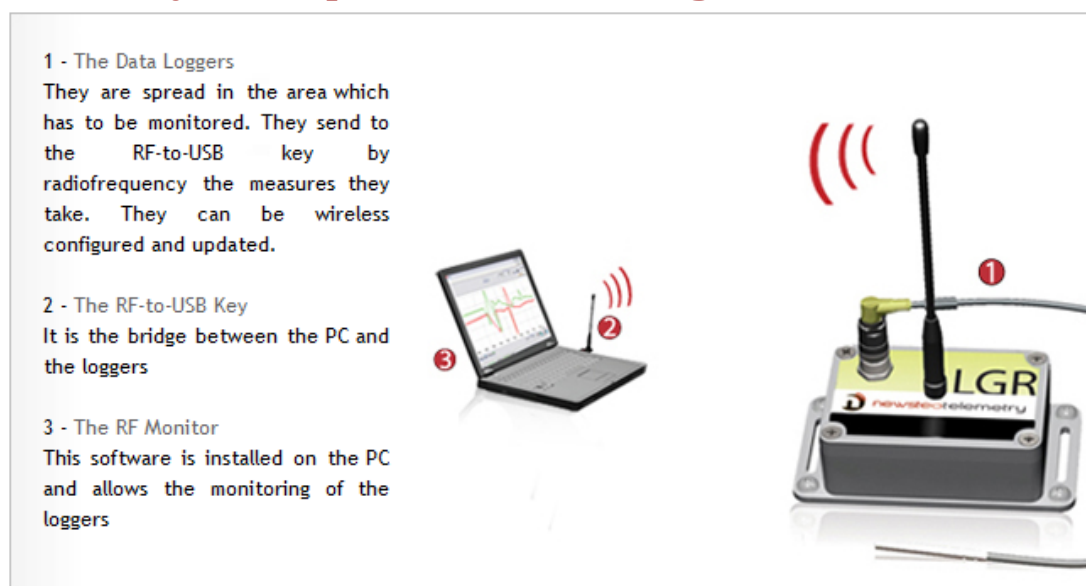


Figure 1: Functioning

The loggers can be used in two different modes:

- **Monitoring** (real time monitoring applications): the logger sends in real time its measurements to the PC. If a measurement is not received by the PC, it stores it inside its internal memory and sends it to the PC on the next communication channel
- **Record / Restitution** (a posteriori monitoring): the logger records in its embedded memory the measurements it takes. The user can download on the PC all the stored measurements when he wants.

3 Newsteo Potentiometric logger

3.1 Technical characteristics

Preliminary specification – Subjected to change without prior notification.

TBC : To be confirmed

TBD : To be defined

NA: Not applicable

3.1.1 Measurement accuracy / interface

The connexion to the external probe is done through an external connector available on the top of the casing.

Caution: for each input, performance data in the table below will be reached only if you follow the calibration procedure given by Newsteo.

The following characteristics are valid for each of the 3 channels for LGP33 reference.

Characteristics	LGS31	LGP33
Type	Potentiometric For $R_p=1k\Omega$ to $10k\Omega$: linear transfer function Pour $R_p=10k\Omega$ to $65k\Omega$: complex transfer function The transfer functions are integrated into RF Monitor and can be brought in another tool of data reception	
Channel	1	3 inputs multiplexed (inter-channel delay: 150ms) cannot be deactivated, common supply.
Measurement range	From $1k\Omega$ to $65k\Omega$ (for each channel)	
Accuracy	Total sum of the errors : 1LSB max meaning $\pm 3 \times 10^{-3}\%$ (using Newsteo transfer functions)	
Resolution	1LSB (corresponds to the full scale of the sensor divided by 32768)	
Response time	0,15s per sensor Maximum measurement speed : 1s	
Temperature compensation	Onboard integrated temperature sensor can be used for temperature compensation	

3.1.2 Casing

Characteristics	
Temperature range of use of the Logger	-40 °C to + 85°C
IP Level of the Logger and the connector	IP65 The level of tightness of the product is valid only if the probe and antenna are properly tightened (seals crushed).

3.1.3 Power supply / Autonomy

Characteristics	LGS31	LGP33
Battery	AA Lithium Thionyl (included) with plug-in connector	
Autonomy @ 25°C	Up to 3 years At 25°C with a frequency measures of 10 minutes. Average value which can slightly vary depending on the use. It is given with the product working in non alert mode.	> 2 years At 25°C with a frequency measures of 30 minutes. Average value which can slightly vary depending on the use. It is given with the product working in non alert mode.

3.1.4 Other characteristics

Characteristics	Newsteo LGS31	LGP33
Measurement frequency	Can be set from 1 s to 4 hours	
Antenna RF Connector	SMA connector	
Antenna	1/2 wave antenna (included)	
RF range in free land	100m to 1Km, depending on the antenna used on the reception side	
Memory Capacity	32 256 measurements with date and time	10700 measurements with date and time Either with a measurement every 10 minutes : memory autonomy of 74 days
Time resolution	1s	
Time deviation	+/- 2 min/month @ 25°C	
Data memory retention	100 years	
ILS	ILS integrated for several functions: - wakeup of the product in hibernate mode - take of a measure outside of the frequency measure set	

3.2 Casing specification



Figure 2: LGS casing

Characteristics	
Features	Aluminium casing (4mm)
Fixation	Fixation support provided screwed in the casing for screwing in 4 points or strapping through 2 holes
Colour	Grey (aluminium)
Dimensions (w/o antenna)	Length : 98 mm Depth : 64 mm Height: 34 mm
Weight	About 280 g
Stickers	2 stickers on the product : - 1 sticker on the top face, giving the product range - 1 sticker on the side, giving the complete product reference and its serial number

3.3 Starting of the logger

The product is delivered with a battery inserted, in hibernate mode.
The user has to pass a magnet on the product to wake up it and to set it.
The time is set in production.

3.4 Certification

Products certified for radio use in Europe, on the frequency of 868 MHz (ISM band). For use in another area, check with local authorities.

4 Newsteo probes and connection cables

Assembly:

When installation is required, the customer is responsible for the proper assembly of the sensors and good connection of the probe on the Logger.

4.1 Cables

Cables and connectors can be ordered to connect customer's sensor on Newsteo LGS.

4.1.1 PFPN-SES58-001



Figure 3: PFPN-SES58-001 (cables and quick connectors)

Characteristics	
Type	Cable - M12 connector for direct connection to the LGR - Wires to connect the sensor (The connection instructions are provided).
Length of cable	5 meters (can be shortened by the customer if necessary)
IP level	IP68 (male connector, cable and quick connectors)
Ambient temperature (operation)	Cable : -40 °C ... 80 °C (cable, fixed installation) -5 °C ... 80 °C (cable, flexible installation) Connector (plugged on the logger): -25 °C ... 90 °C

4.2 Crackmeter probes

Newsteo can provide crackmeter probes and associated cables to connect directly on the LGS31.

4.2.1 Crackmeter probe 1

4.2.1.1 PFPN-FISSU-001



Figure 4: FISSU-001

Gefran crackmeter that can be used with the LGS31 Logger. To plug the crackmeter, use the cable PFPN-STI58-002.

Detailed specification of the crackmeter: http://www.gefran.com/en/products/product_529.aspx

Installation guide and specifications are available on the manufacturer's website.

Main characteristics:

Characteristics	
Type	Rectilinear displacement transducer
Operating temperature	-30°C to +100°C
IP	IP 40
Measurement range	0 to 10 mm (other range available on request)
Resolution	Infinite resolution
Linearity	Independent linearity up to $\pm 0.1\%$
Displacement speed	up to 10 m/s

4.2.1.2 PFPN-STI58-002



Figure 5: PFPN-STI58-002

Characteristics	
Type	Cable for direct connection of the PFPN-FISSU-001 - Male connector to connect to the LGS - Other connector to connect to the PFPN-FISSU-001
Length	5 meters
Operating temperature	-25 °C ... 80 °C (cable, fixed installation) -5 °C ... 80 °C (cable, flexible installation)

4.2.2 Crackmeter probe 2

4.2.2.1 PFPN-FISSU-002



Figure 6: PFPN-FISSU-002

Gefran crackmeter that can be used with the LGS31 Logger. To plug the crackmeter, use the cable PFPN-STI58-003.

Detailed specification of the crackmeter: http://www.gefran.com/en/products/product_738.aspx

Installation guide and specifications are available on the manufacturer's website.

Main characteristics:

Characteristics	
Type	Rectilinear displacement transducer with IP67 protection level
Operating temperature	-30°C to +100°C
IP	IP 67
Measurement range	0 to 25 mm (other range available on request)
Resolution	Infinite resolution
Displacement speed	Standard ≤ 3 m/s max ≤ 5 m/s

4.2.2.2 PFPN-STI58-003



Figure 7: PFPN-STI58-003

Characteristics	
Type	Cable for direct connection of the PFPN-FISSU-002 - Male connector to connect to the LGS - Other connector to connect to the PFPN-FISSU-002
Length	5 meters
Operating temperature	-25 °C ... 80 °C (cable, fixed installation) -5 °C ... 80 °C (cable, flexible installation)

4.2.3 Crackmeter probe 3

4.2.3.1 PFPN-FISSU-003



Figure 8: PFPN-FISSU-003

Gefran crackmeter that can be used with the LGS31 Logger. To plug the crackmeter, use the cable PFPN-STI58-004.

Detailed specification of the crackmeter: http://www.gefran.com/en/products/product_525.aspx

Installation guide and specifications are available on the manufacturer's website.

Main characteristics:

Characteristics	
Type	Selfloading rectilinear displacement transducer with cylindrical case
Operating temperature	-30°C to +100°C
IP	IP 65
Measurement range	0 to 50 mm (other range available on request)
Resolution	Infinite resolution
Displacement speed	≤ 5 m/s

4.2.3.2 PFPN-STI58-004



Figure 9: PFPN-STI58-004

Characteristics	
Type	Cable for direct connection of the PFPN-FISSU-003 - Male connector to connect to the LGS - Other connector to connect to the PFPN-FISSU-003
Length	5 meters
Operating temperature	-25 °C ... 80 °C (cable, fixed installation) -5 °C ... 80 °C (cable, flexible installation)

4.2.4 PFPN-FISSU-005 - Crackmeter probe 4



Figure 10: PFPN-FISSU-005

This crackmeter / extensometer is directly connected to a cable to be connected on the Newsteo Logger. There is no need of an additional connection cable.

Characteristics	
Type	Linear displacement sensors
Operating temperature	Sensor : - 30 to +100°C Cable : -25 °C ... 80 °C (cable, fixed installation) -5 °C ... 80 °C (cable, flexible installation)
IP	IP 66
Measurement range	0 to 25 mm (other range available on request)
Resolution	Virtually Infinite resolution
Cable length	5 meters

5 How to order?

You need to order a data logger with a crackmeter. You order for example:

- 1 PFPN-LGS31-001 (battery and antenna included)
- 1 PFPN-STY58-003 (cable)
- 1 PFPN-FISSU-002 (crackmeter)