

Eco/Pro Fuel Level Sensor

Data Sheet v1.1
2016-03-16



Physical properties

Probe length ⁴ , mm	100 - 1500
Housing	Aluminium
Protection	IP68

Product family

- FLS Eco / Pro

- 100 - 1500 mm probe length⁴
- Accuracy < 99%²
- No moving parts
- Wet calibration (PC connection required)
- Dry calibration
- Analog/Frequency/RS232/RS485 interfaces
- Tethering table in FLS head
- FLS head can be disconnected from the probe
- The same probe for ECO & PRO FLS
- Unified data output protocol (no additional integration)

Electrical specification	
Power supply	12/24 V DC (range: 10 - 32 V DC) ³
Input pulse tolerance	50 V @ 0,2 s

	Eco	Pro
Power consumption ¹ @ 12 V	13 mA	25 mA
Galvanic isolation	✗	✓
Temperature measure	✗	✓

Inclinometer	✗	X; Y axis
Angle measurement error	< 1°	
Angle measurement resolution	0,1°	

Interfaces		
	Eco	Pro
Analogue (voltage/frequency)	✓	✓
Output voltage	0,5 - 20 V	
Frequency range	500 - 2000 Hz	
Digital to analogue resolution	12 bit	
Resistance to analogue output	4 kΩ	

Digital	Eco	Pro
Fuel data via RS232	✗	✓
Configuration via RS232	✓	✓
Fuel data via RS485	✗	✓
Configuration via RS485	✗	✓

Mechanical properties		
	Eco	Pro
Storage temperature °C	-40 - +80	-40 - +80
Operating temperature °C	-40 - +80	-40 - +80
Accuracy	< 99 %	< 99 %
Fuel type	Diesel	
⁴ Probe length	100 - 1500 mm	
Wire length	450 mm + 7m extension	
Housing	Aluminium	
⁴ Probe type 1	750; 1000; 1500 mm	

Certification		
	Eco	Pro
CE	✓	✓
E26	✓	✓
Rostest	✓	✓

¹ In testing state

² Wet calibration must be used. Accuracy of <99% is achieved in stable conditions, and calculated according to probe length. Valid for 300- 1500 mm probe lengths only.

³ 8-36V DC in the future

⁴ 1500 - 3000 mm probes will be available later

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Functionalities

	Eco	Pro
FW update OTA	×	✓
CFG update OTA	×	✓
Tethering table in FLS head (level value conversion to Liters)	×	✓
Dry calibration (with or without connecting to PC)	✓	✓
Wet calibration (PC connection required)	✓	✓
FLS head can be disconnected from the probe		
Same probe can be used with ECO & PRO FLS heads		
Data output through all available ports at once		

Cable PIN out:

ECO

4	5	6
3	2	1

- 1 - GND
- 2 - RS-232 RX (FLS)
- 3 - Analog / Frequency output
- 4 - RS-232 TX (FLS)
- 5 - VCC
- 6 - None

PRO

5	6	7	8
4	3	2	1

- 1 - GND
- 2 - RS-232 RX (FLS)
- 3 - Analog / Frequency output
- 4 - RS-232 TX (FLS)
- 5 - VCC
- 6 - RS485 A
- 7 - RS485 B
- 8 - None

Document application

Given parameter values and various characteristics contained within this document applies only to the most recent device hardware version.

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