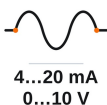


OPTICAL LEVEL SENSOR



Type: **OFST-ID**

- RANGE UP TO 4000 mm
- NON-CONTACT, LASER CLASS 1
- OUTPUT 4 ... 20 mA
- PROTECTION CLASS IP68



ORDER CODE

Code	Field	Meaning
FT	series	Optical Level Sensor
0 ... 3	measuring range	0 ... 4000 · 0 ... 3000 · 0 ... 2000 mm · custom
0	output	4 ... 20 mA, resolution 0.01 mA
0	laser	class 1, approx. 920 nm
0 · 1 · 2	accessory cable	without · 1 m · 3 m
0 · 1	configuration	factory setting · customized, please specify
0 · 1	4 hole adapter	without · with
0	accuracy	3 mm
0	protection class	IP68

The manufacturer notes that missing information when ordering leads to delays. The accuracy position of the code reads 3 mm; the technical data give 30 mm and 2 mm in good conditions.



OVERVIEW

A low-power laser measures the level from above, without touching the surface. That makes aggressive media possible without the wear a contacting probe would suffer, and it makes the reading independent of colour — liquids, fluids, grain and bulk solids alike. The range reaches 4000 mm, the sensor scans once a second and resolves 1 mm, with a blind spot of 30 mm. Standard tank formats are covered as they are; irregular geometries are taken up by up to 20 programmable measuring points, and a filter allows non-static tank situations. The sensor is a disc of Ø 66 × 31 mm in polycarbonate with an NBR gasket, rated IP68, fitted into an SAE 5-hole pattern; a 4-hole adapter is available as an accessory. The output is 4 ... 20 mA over a 150 mm cable tail ending in an M12 4-pole connector. The laser is class 1 at about 920 nm.

MEASUREMENT AND OUTPUT

- Level 0 ... 4000 mm, non-contact
- Laser class 1, approx. 920 nm
- Resolution 1 mm, scanning 1 Hz
- Blind spot 30 mm
- Colour independent, liquids and bulk solids
- Up to 20 programmable measuring points
- Output 4 ... 20 mA, resolution 0.01 mA
- Fixed measuring ranges, set at the factory

DEVICE AND MOUNTING

- Disc Ø 66 × 31 mm, polycarbonate
- NBR gasket, protection class IP68
- SAE 5 hole standard, 4 hole adapter optional
- Max. built-in recess 47.8 mm
- Cable 150 mm, plug M12 4-pole
- Accessory cables of 1 m and 3 m
- Supply 8 ... 33 V DC, reverse polarity protected
- Operation and storage -20 ... +80 °C



TECHNICAL DATA

INPUT AND MEASUREMENT

Level	0 ... 4000 mm
Medium	no surface contact necessary; aggressive media possible
Measurement	colour independent — liquids, fluids, grain, bulk solids
Scanning	1 Hz
Resolution	1 mm
Blind spot	30 mm
Tank formats	standard formats; irregular geometries through up to 20 programmable measuring points
Filter	non-static tank situations possible

MECHANICS

Dimensions	241.7 mm total length over housing, cable and connector · Ø 66 x 31 mm
Housing	polycarbonate, NBR gasket
Protection class	IP68
Mechanical connection	SAE 5 hole (standard) · 4 hole adapter (accessory)
Max. built-in recess	47.8 mm
Cable	150 mm
Plug	M12, 4-pole, female cable available as accessory

OUTPUT AND SUPPLY

Current signal	4 ... 20 mA
Resolution	0.01 mA
Supply voltage	8 ... 33 V DC
Consumption	< 70 mA at 12 V · < 40 mA at 24 V
Reverse polarity	internally protected

ACCURACY

Accuracy	30 mm · 2 mm in good measurement conditions
Note	the characteristics list of the manufacturer document gives ± 3 mm for the same device
Resolution	1 mm

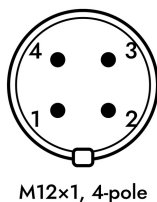
LASER, ENVIRONMENT AND CONFIGURATION

Laser	class 1, approx. 920 nm — the manufacturer states the frequency to be outside any eye damage
Environment	operation -20 ... +80 °C · storage -20 ... +80 °C · measurement situation industrial, static, moving, irregular tank shapes
Configuration	in fixed measuring ranges, set at the factory; the range is chosen with the order code



ELECTRICAL CONNECTION

View onto the connector pins at the device



M12x1, 4-pole

Pin	Signal
1	+ Vcc (9 ... 33 V DC)
2	Analog Out +
3	GND
4	Analog Out -

The device ends in a 150 mm cable with an M12 4-pole pin connector; the accessory cable carries the matching socket, whose view is mirrored. Drawn is the pin side.

ACCESSORIES

Sensor cable 1 m	PVC, 4-pole, with M12 female connector
Sensor cable 3 m	PVC, 4-pole, with M12 female connector
Adapter 5 to 4 hole	for a 4 hole mounting pattern

The wire colours of the accessory cable are shown in the manufacturer document.

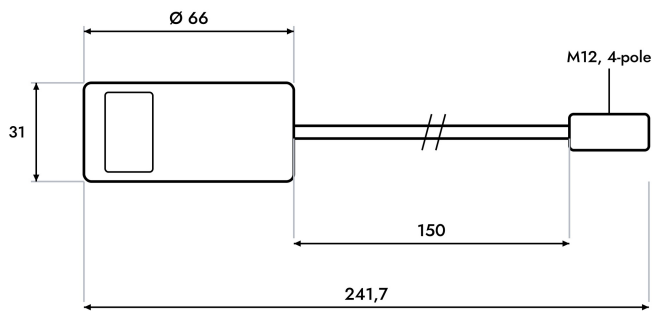
COMPLIANCE

 IP68	Protection class	IP68, polycarbonate housing with NBR gasket
 M12	Electrical connection	M12, 4-pole, over a 150 mm cable tail
 4...20 mA 0...10 V	Output signal	4 ... 20 mA, resolution 0.01 mA

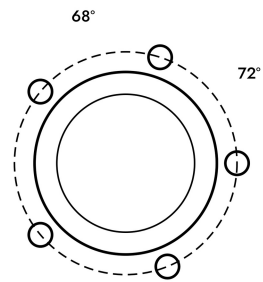
The manufacturer document lists CE, laser class 1 and ISO 16750-2 under certifications.



DIMENSIONS (mm) AND MOUNTING



Mounting pattern SAE 5 hole

circles $\varnothing 66 \cdot \varnothing 54 \cdot \varnothing 36 \dots 42 \cdot 5 \times \varnothing 5.5$ for M5

Drawn by octogon from the manufacturer document; the dimensioned values are taken from it, the outline is schematic and the cable is broken. In the mounting pattern the manufacturer dimensions twice 72° and twice 68° and leaves the fifth division unlabelled; the position of the holes is therefore schematic.

