

ELECTRONIC LEVEL SENSOR



 **DISPLAY**

Type: **LS500**

- MEASURING LENGTH 0.15 ... 2 m
- RESOLUTION 10 mm OR 5 mm
- 4-DIGIT LED, 12 mm HIGH
- IO-LINK · RS485 · 4 ... 20 mA


IP67


Stainless Steel
AISI 304 · 1.4301


Display


IO-Link


M12

ORDER CODE

Code	Field	Meaning
FSKA	series	electronic level sensor
S2 · SA	output signal	two switching outputs and IO-Link · one switching output, IO-Link and analogue
A3 · RS	output signal	two switching outputs and analogue · RS485
G1M · G112M · G2M	process connection	G1 · G1-1/2 · G2 male thread
F25 · F50 · F45	process connection	DN 25 · DN 50 flange · 3 holes on a 45 mm pitch
L150 ... L1000	measuring length	150 · 250 · 350 · 500 · 650 · 750 · 1000 mm
N · S	float	NBR Ø 30 mm, oils · stainless steel 304 Ø 40 mm, water
— · 5	resolution	10 mm · 5 mm

Example: FSKA-A3-G112M-L500-N — two switching outputs and an analogue output, G1-1/2 thread, measuring length 500 mm, NBR float, resolution 10 mm. S2, SA and RS use a 4-pin connector, A3 a 5-pin one.



OVERVIEW

A float carries a ring magnet up and down a closed stainless steel tube, and the Hall elements inside the tube read where it stands: the level appears on a four-digit red LED display 12 mm high, and at the same time on the outputs — two switching outputs, an analogue signal of 4 ... 20 mA, 1 ... 5 V or 0 ... 10 V, IO-Link or RS485, depending on the version. Nothing in the tube is exposed to the medium except the tube itself, and the reading does not care about foam, colour or dielectric constant, only about a density of at least 0.7 g/cm³. Measuring lengths run from 0.15 to 2 m with a resolution of 10 mm, or 5 mm on request; the float is NBR for oils or stainless steel 304 for water. Set points, reset points and the range are entered over three keys.

MEASUREMENT	DEVICE AND MOUNTING
• Float with a ring magnet, Hall elements inside the tube • Measuring length 0.15 ... 2 m, resolution 10 mm or 5 mm • Independent of foam, colour and dielectric constant • Medium density from 0.7 g/cm³ • Two switching outputs, PNP or NPN, normally open or closed • Analogue output 4 ... 20 mA, 1 ... 5 V or 0 ... 10 V, $\leq \pm 0.5$ % of range • IO-Link or RS485 instead of the analogue output • Reverse-polarity, overload and short-circuit protection	• G1, G2 or G1-1/2 male thread, or a DN 25 / DN 50 flange • Tube and wetted parts of stainless steel 304 • Float of NBR, Ø 30 mm for oils, or 304, Ø 40 mm for water • Four-digit red LED display, 12 mm high, range -1999 ... 9999 • Head housing of flame-retardant engineering plastic, UL 94 V-0 • Protection rating IP67, M12 x 1 connector • Set point, reset point and range over three keys • Protective cover available for the display head



TECHNICAL DATA

MEASUREMENT

Principle	float with ring magnet, Hall elements in the tube
Measuring length	0.15 ... 2 m
Resolution	10 mm · 5 mm on request
Analogue accuracy	$\leq \pm 0.5\%$ of the range
Linearity	$\leq 0.5\%$ of the range
Medium density	$\geq 0.7 \text{ g/cm}^3$

PROCESS AND MATERIALS

Process connection	G1 · G1-1/2 · G2 male thread
Flange connection	DN 25 · DN 50
Tube and housing	stainless steel 304
Float	NBR Ø 30 mm · 304 Ø 40 mm
Head housing	engineering plastic, UL 94 V-0
Protection rating	IP67

OUTPUT AND SUPPLY

Switching output	2 x PNP or NPN, NO or NC
Switching load	< 200 mA at 24 V DC
Response time	0.01 ... 2 s
Analogue output	4 ... 20 mA · 1 ... 5 V · 0 ... 10 V, load $\leq 500 \Omega$
Digital output	IO-Link · RS485
Supply voltage	12 ... 30 V DC
No-load current	max. 40 mA at 24 V DC
Protection	reverse polarity · overload · short circuit

DISPLAY AND ENVIRONMENT

Display	4-digit red LED, 12 mm high
Display range	-1999 ... 9999
Signal lamps	SP1 and SP2, one per output
Keys	up · down · enter
Medium temperature	-20 °C ... +85 °C
Ambient temperature	-20 °C ... +80 °C
Storage temperature	-30 °C ... +80 °C
Connection	M12 x 1 connector

MOUNTING AND USE

Effective range	the effective range starts about 30 mm below the process connection; below the lower stop the float no longer moves
Medium	the float must be matched to the medium — NBR for oils, stainless steel 304 for water; the density decides whether the float carries
Flange versions	the float with Ø 40 mm needs a process connection of G1-1/2 or larger, or a flange
Setting	switching points, reset points and the range are entered over the three keys; the display shows the value while it is being set



ACCESSORIES

Connecting cable, 4-pin	M12 x 1, PUR or PVC, 2 · 5 · 10 m — for S2, SA and RS
Connecting cable, 5-pin	M12 x 1, PUR or PVC, 2 · 5 · 10 m — for A3
Protective cover	shields the display head against sun and mechanical damage

Accessories are ordered by description; please state the sensor type with the enquiry.

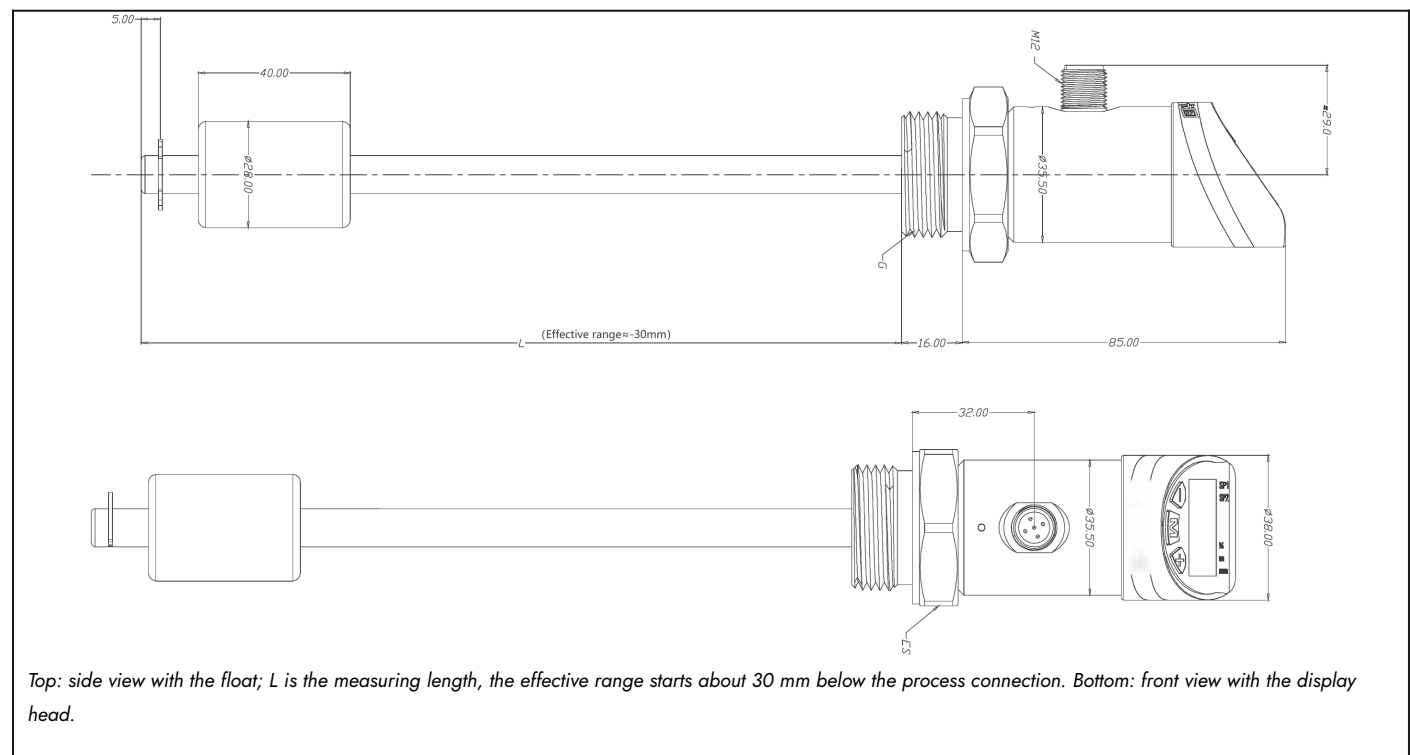
COMPLIANCE

 IP67	Protection rating	IP67 to IEC 60529
 Stainless Steel AISI 304 - 1.4301	Materials	tube, process connection and the 304 float of stainless steel 304; head housing of engineering plastic, flame-retardant to UL 94 V-0
 IO-Link	Digital interface	IO-Link in the versions S2 and SA
 M12	Electrical connection	M12 x 1, 4-pin or 5-pin, to IEC 61076-2-101

No approval beyond the protection rating is documented for this device.



DIMENSIONS (mm)



ELECTRICAL CONNECTIONS

