

RADAR TYPE LEVEL TRANSMITTER

ELW

ELW radar level sensors are designed for non-contact level measurement of liquids and bulk solids. They are suitable for measuring virtually all types of liquids and bulk solid materials. The sensors are designed to operate reliably under high-temperature, high-pressure, and dusty process conditions. They are unaffected by product build-up, adhesive media, or condensation on the antenna. Electromagnetic waves are transmitted from the sensor antenna toward the surface of the liquid or bulk solid. The process medium reflects the electromagnetic waves, which are then received by the sensor antenna. The instrument calculates the round-trip travel time of the reflected signal and determines the level based on the configured vessel height. With its dual-microprocessor architecture and advanced echo-tracking algorithm, the ELW radar level sensor delivers high processing performance, stable measurement, and reliable operation even under demanding process conditions.

Technical Specifications

	ELW 801, 803	ELW 802, 804
Medium	Liquid, Bulk Solids, Aggressive Liquids	
Range	0...50 m	0...60 m
Language	English	
Accuracy	± %0,02 T.S.	
Repeatability	± 1 mm	
Resolution	1 mm	
Frequency	76 - 81 GHz	
Dielektric Constant (ε)	Min. 1,4	
Response Time	< 2 sn	
Sampling Frequency	54 GHz	
Display and Adjustment	LCD Display	
Cable Entry	M20x1,5mm	
Electrical Connecon	Terminal	
Process Connection	G 2" (Std.), DN50, DN80, DN100 Flanged	
Antenna	Flanged Lens	
Antenna Material	PTFE	
Housing Material	Aluminum Die-Cast AlSi2Fe, Black (RAL 9005)(Std.) - Plastic	
Connection Material	316 SS	
Process Temperature	(-) 40°C... 80°C, (-) 20°C... (+) 70°C (for OEM)	
Ambient Temperature	(-) 20°C... 80°C	
Relative Humidity	< % 95	
Process Pressure	(-) 1 bar... (+) 3 bar	
Beam Angle	3°	
Supply Voltage	18...36 VDC 2 Wire	
Power Consumption	< 0,5 W	
Output Signal	4-20 mA, 2-Wire + HART (Resolution: 1.6 µA)	
Integration Time	0... 20 s., Programmable	
Weight	~ 2 ... 4 kg	
Protection Class	IP 66 (EN60529)	



Model

- ELW 801
- ELW 802
- ELW 8001
- ELW 803
- ELW 804
- ELW 8002

Application Areas

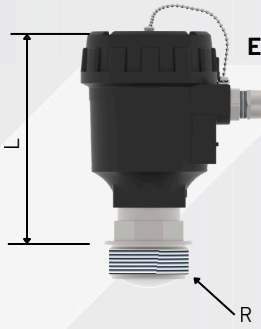
Level measurement in liquids and solids under standard process conditions, particularly in corrosive media.

Suitable for applications in the chemical, pharmaceutical, cooling water tank, food and plastics industries, as well as power plants, oil and cement plants, oil storage tanks, fire water tanks, rivers, waste material, and wastewater applications.

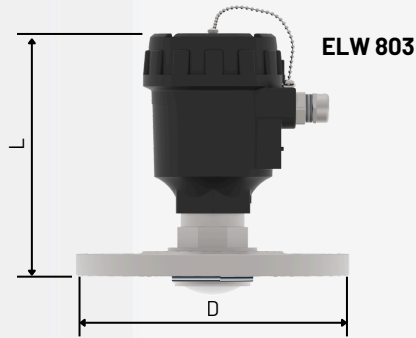
Advantages

- Robust mechanical construction.
- High-temperature model options are available.
- Wide range of applications.
- Unaffected by foam and vapor.
- Model options suitable for use in dusty environments.

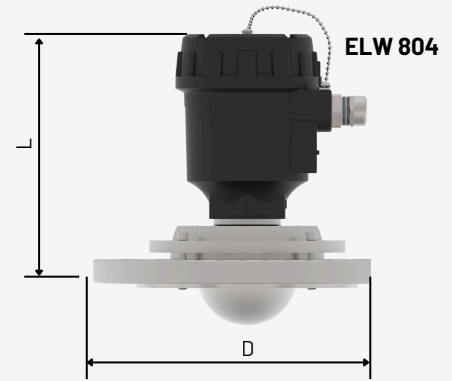
Samples



ELW 801 / 802



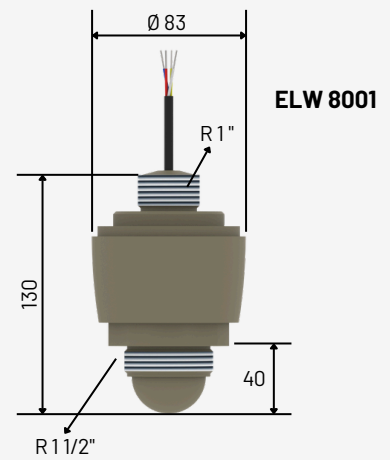
ELW 803



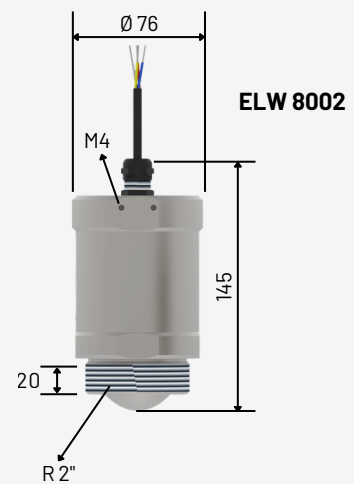
ELW 804

Technical Specifications

	ELW 8001	ELW 8002
Medium	Liquids	Bulk Solids
Range	0...30 mt.	
Language	English	
Accuracy	± 2 mm	
Repeatability	± 1 mm	
Resolution	1 mm	
Frequency	77 - 81 GHz	
Dielectric Constant (e)	Min. 1,4	
Adjustment	RS 485 / HART / Bluetooth	
Cable Entry	M16x1,5mm	M12x1,5mm
Electrical Connection	Cable (Ø 6,5 mm)	
Process Connection	R 1" (From Top) - R 1 1/2"	R 2"
Antenna	Compact	
Antenna Material	PP	
Housing Material	PP	Pas.Çelik
Process Temperature	(-) 20°C... 70°C	
Ambient Temperature	(-) 20°C... 60°C	
Relative Humidity	< % 95	
Process Pressure	(-) 0,8 bar... (+) 3 bar	
Beam Angle	3,5°	
Supply Voltage	15...36 VDC 2 Wire	
Power Consumption	< 0,5 W	
Output Signal	4-20 mA 2 Wire + RS485 Modbus + HART	
Integration Time	0... 20 s., Programmable	
Weight	~ 0,5 kg	~ 1,5 kg
Protection Class	IP 68 (EN60529)	
Options	Can be adjusted via Bluetooth. (My Radar)	



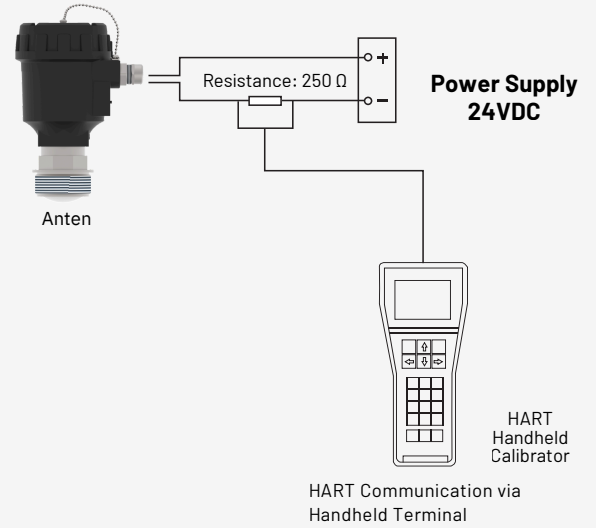
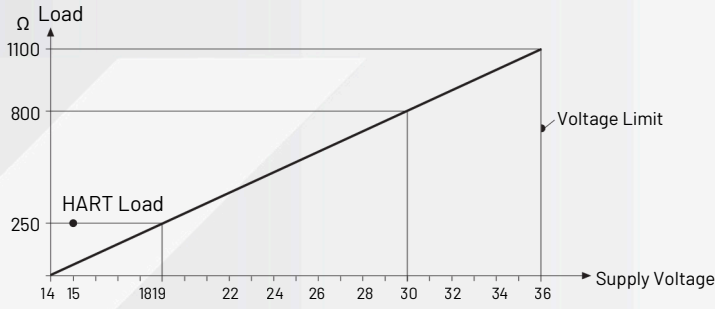
ELW 8001



ELW 8002

Dimensions	Connection R (mm)	D (mm)	Angle (°)	L (mm)
ELW 801	R 2"	Ø 39	3°	192
ELW 803	DN80 DN100	Ø 220	3°	178
ELW 802	R 2"	Ø 70	3°	192
ELW 804	DN100	Ø 220	3°	178
ELW 8001	R 1 1/2"	Ø 83	3,5°	130
ELW 8002	R 2"	Ø 76	3,5°	145

Cable Resistance + HART Resistance + Load Resistance



Label

Product Label

Manufacturer Brand: **ensim sensors**

Product Name: **RADAR LEVEL TRANSMITTER**

Certification Mark: **EAC CE**

Model: Type : ELW 802-30-0010-002-19-1-2-702-0002-00/0

Operating Conditions: Power Supply : 24 VDC ± %10

Output: Output : 4-20 mA Two wires + HART

Operating Temperature: Process Temp. : (-)40 °C...(+)80 °C

Ambient Conditions: T (Ambient) : (-)20 °C...(+)80 °C

Serial Number: S.N. : IE21040002-0005

Warning Symbols:

MADE IN TURKIYE

Website: www.ensim.com.tr

Grounding Label



Housing

DO NOT OPEN THE COVER WHILE ENERGIZED
KEEP CLOSED DURING OPERATION

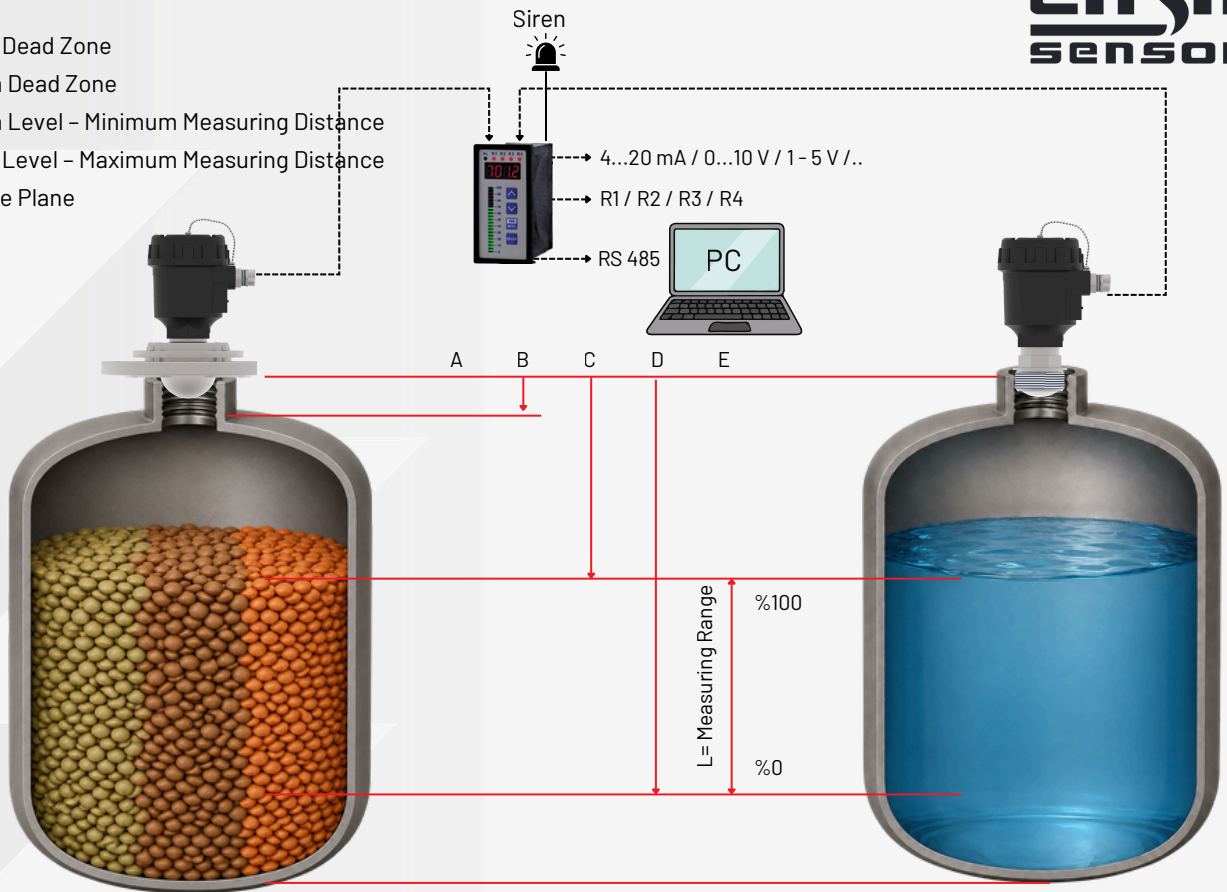


Top View

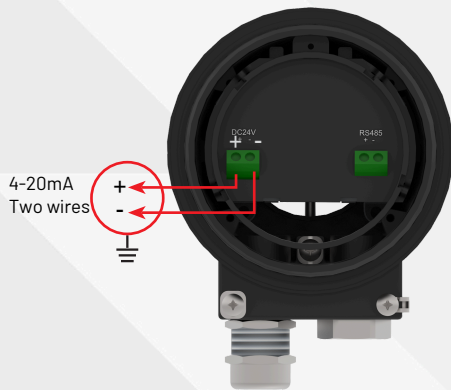


ORDERING CODE	TYPE	MATERIAL	PROTECTION CLASS	TEMPERATURE (°C)	DIMENSIONS
702	B21x	Aluminium	IP 66	(-) 40...(+) 200	140 x 104
103	B20p	Plastic (PP)	IP 66	(-) 40...(+) 150	132 x 104

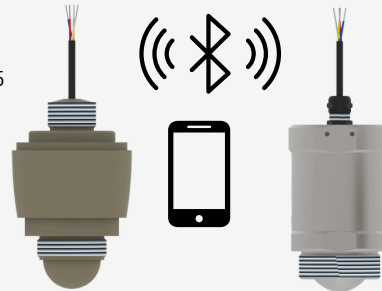
- A** : Minimum Dead Zone
B : Maximum Dead Zone
C : Maximum Level – Minimum Measuring Distance
D : Minimum Level – Maximum Measuring Distance
E : Reference Plane



Electrical Connection

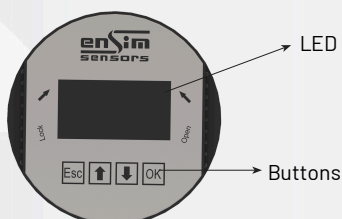


Red: 24 V (+)
 Black: 24 V (-)
 White: RS485
 Yellow: RS485



Red: 24 V (+)
 Black: 24 V (-)
 White: RS485
 Yellow: RS485

Display

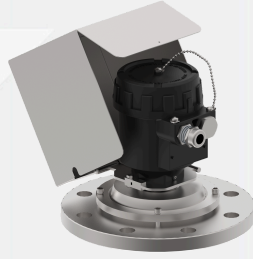


- Esc** : Back / Enter echo wave interface
↑ : Up shift/ Increase key
↓ : Down shift / Decrease key
OK : OK key / Enter setting parameter interface



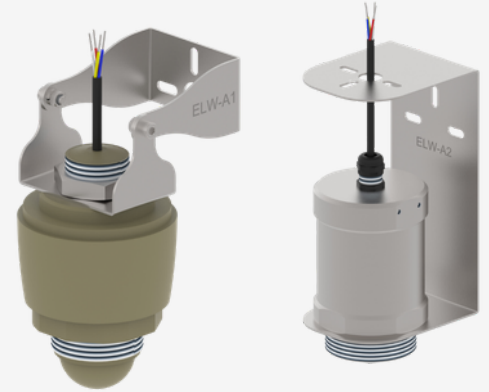
Protective Sleeve

Material: 304 SS
Construction: Welded
Design: Hinged cover, openable/closable
Purpose: Protects the switch against outdoor environmental conditions.

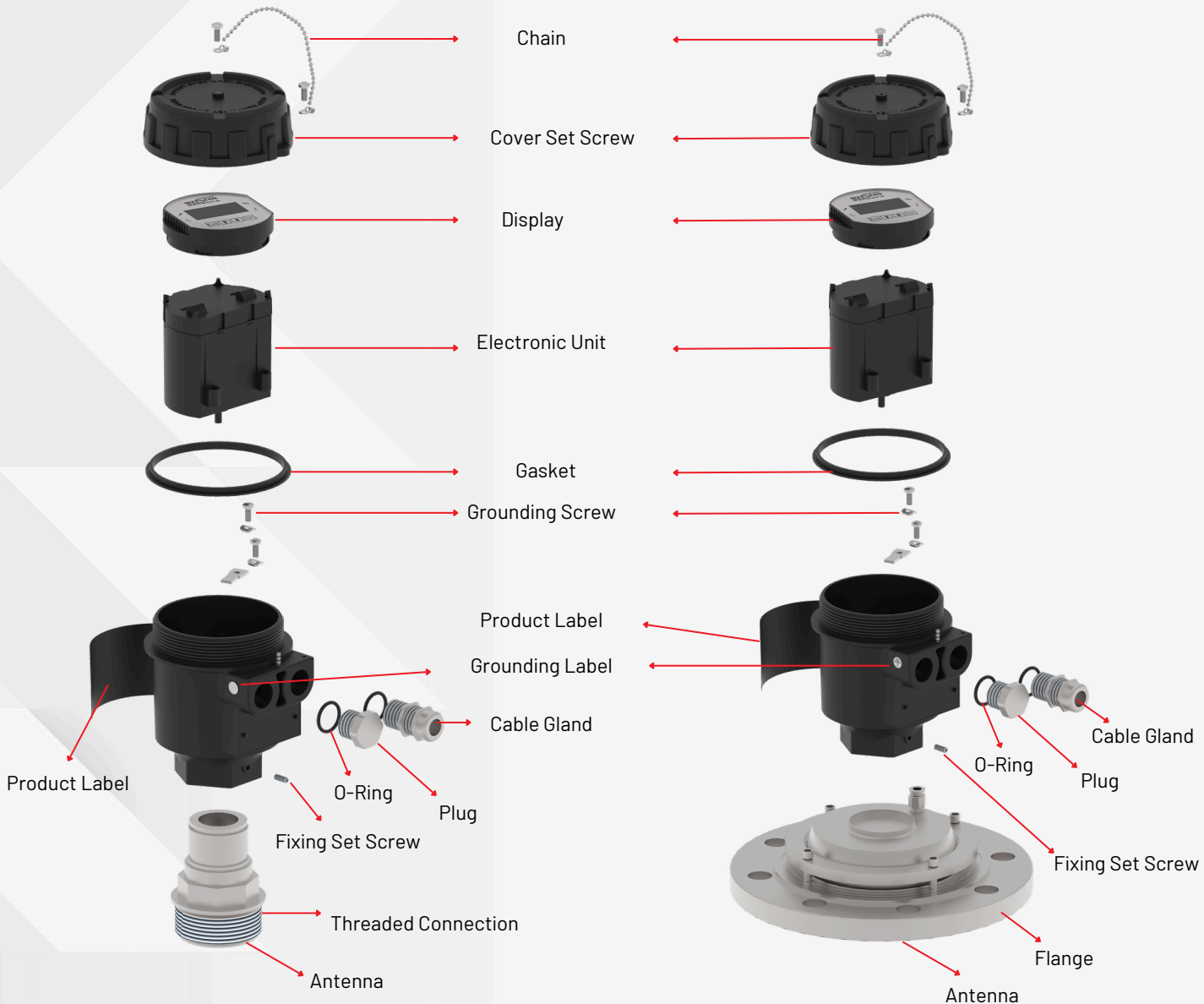


Connection Apparatus

Material: 304 Stainless Steel
Openable / Closeable
Hinged Type



Components



Ordering Method: You can consider sample models in the coding!

LEVEL

1	MODEL ELW	Standart Type - 8	
2	CERTIFICATE	None - 0 (EN10204-3-1) Material Certification - 1	
3	CONNECTION TYPE	PTFE Antenna (Liq.) - 1 Flanşlı Antenna (Liq.) - 3	Metal Antenna (Solid) - 2 Oynar Flanşlı (Katı) - 4 PP Antenna - (Liq) - 01 PP Antenna - (Solid) - 02
4	MEASURING RANGE	10 MT - 10 20 MT - 20	30 MT - 30 50 MT - 50 Special / x
5	PROCESS TEMPERATURE	(-)40 °C ... (+)80 °C - 1 (-)20 °C ... (+)70 °C OEM - 2	Special / x
6	MECHANICAL CONNECTION	R 2" (Std.) (Liq) - 0010 R 1 1/2" (Std.) OEM (Solid) - 0012	DN 50 - PN 16 (Std.) - 0505 DN 80 - PN 16 - 0507 DN 100 - PN 16 - 0508 Special / x
7	OUTPUT	4-20 mA two wires (Std.) - 19 4-20 mA + RS485 + HART (OEM) - 46	Special / x
8	HOUSING	None - 000 Aluminium Housing , B21x IP 66 - 702	Plastic Housing , B20p - 103 Special / x
9	BODY MATERIAL	None - 000 316 SS - 0002	PP (for OEM) - 0062 Special / x
10	CONNECTION AND ANTENNA MATERIAL	316 SS - 0002 PP (for OEM) - 0062	PTFE - 066 Special / x
11	ELECTRICAL CONNECTION	Terminal - 00 PVC Cable (for OEM Max. 60 °C) - 80	Special / x
12	OPTIONAL	None / 0 Protective Sleeve / K6	Suspension Bracket (for PP Model) / A1 Suspension Bracket (for SS Model) / A2 Special / x

SAMPLE

Radar Level Transmitter, Model ELW 801, 30 m, 4-20 mA Two-Wire with HART Communication, R 1 1/2"

*1 The "Cooling Element" code is used together with the "H" code.

