

GUIDED WAVE RADAR (TDR) LEVEL TRANSMITTER

EGW

Guided Wave Radar Level Transmitter is used for continuous level measurement of liquids and solids. Models suitable for demanding operating conditions are available. It provides reliable and accurate measurement in dusty and noisy environments, without being affected by buildup or condensation. It is not affected by the specific gravity of the medium, condensation, turbulence, or changes in the dielectric constant within the adjustment range. It offers easy and simple operation and can be configured via the LCD electronics using four buttons.

Applications:

Suitable for volatile liquids, foaming liquids, viscous liquids, boiling and agitated liquids, and crude oil tanks.

**Volatile
Liquids**



**Foaming
Liquids**



**Viscous
Liquids**



**Boiling and foaming
Liquids**



**Crude
Oil**



Model

- EGW 204
- EGW 202
- EGW 201
- EGW 205
- EGW 203
- EGW 207

Technical Specifications

Medium	Liquid, Solid Particulate Material, Aggressive Liquids
Measuring Range	32 m Cable Probe 6 m Rod Probe 4 m Coaxial Probe
Language	English
Accuracy	± 3 mm
Repeatability	± 1,5 mm
Resolution	1 mm
Working Pressure	(-)1...(+40bar , Ops. Max. 100bar
Working Temperature	(-)40...(+200°C , Opt. 230 °C (PEEK)
Ambient Temperature	(-)20...(+60°C
Frequency	106 MHz - 1,8 GHz
Dielektric Constant(ε)	Min. 1.4 – selectable in 5 different ranges
Response Time	<2 sn
Sampling Frequency	16 Hz
Power Consumption	<0,5 W
Power Supply	15-36 VDC, two-wire version (resolution: 1.6 µA)
Output	4-20mA two wires + HART
Error Signal	20,5 mA , 22mA , 3,9 mA (Adjustable)
Max. Load Resistance	500 Ω
Damping Time	0...90 sn.
Housing Material	Die-Cast Aluminum AlSi2Fe, Black (RAL 9005)
Connection / Probe Mat.	304 SS standard, 316 SS optional
Isolation Material	PTFE (Std.) , Ops. PEEK
Display	LCD
Cable Gland	M20 x 1,5 mm
Electrical Connection	Terminal
Protection Class	IP66 (EN60529)
Weight	EGW 205, (for L=1000mm) ... kg

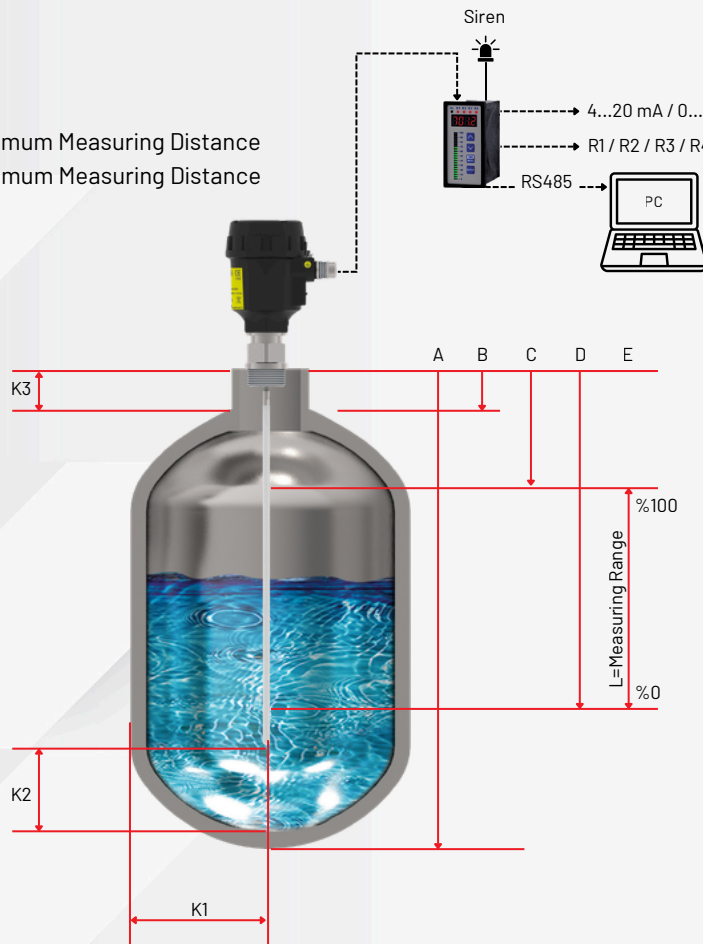
Operating Principle

High-frequency microwave pulses are guided along a steel cable or rod. When they reach the product surface, the reflected waves are detected by the electronics. The signal time of flight – the time between transmission and detection – is directly proportional to the level.

Advantages

- Compact design
- Easy to commission
- Robust mechanical construction
- High temperature models are available.

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



For K1 (mm):

Flat metal wall > 60 mm
Plastic wall > 320 mm
Flat concrete wall > 530 mm

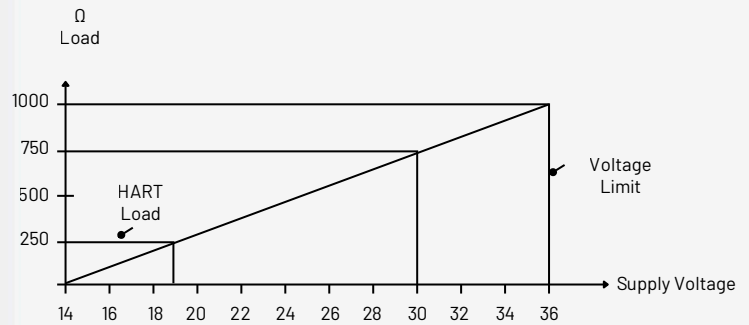
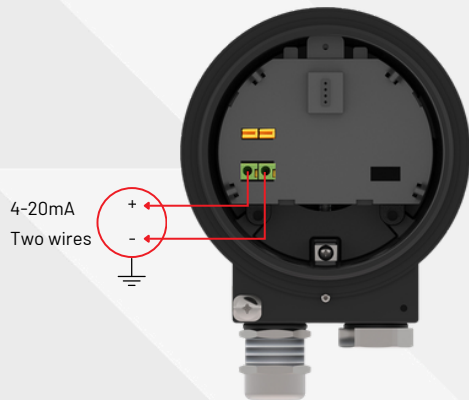
For K2 (mm):

Cable probe > 175 mm
Rod probe > 15 mm
Coaxial probe > 15 mm

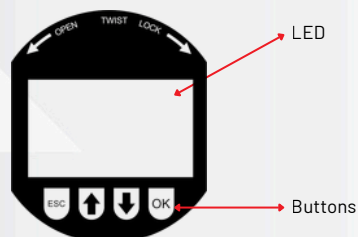
For K3 (mm):

For threaded socket/nozzle connection: min. 100 mm
If L > 3 m, additional support may be required.

Electrical Connection



Display



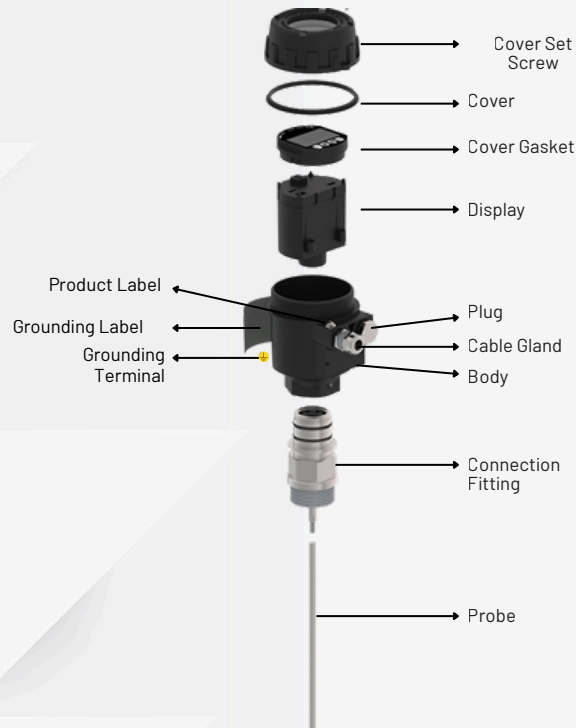
ESC : Back Button

▲ : Next Button

▼ : Previous Button

OK : OK Button

Components



Label

Product Label

Manufacturer Brand: **ensim sensors**

Product Name: **TDR RADAR LEVEL TRANSMITTER**

Certification Mark: **EAC CE**

Model: Type : EGW 205-500-0-0010-19-702-066-001-00/0

Operating Conditions: Power Supply : 24 VDC $\pm$ %10

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

Operating Temperature: Process Temp. : (-)40 °C...(+)200 °C

Ambient Conditions: T (Ambient) : (-)20 °C...(+)60 °C

Mechanical Conn. / Length: Mech. Conn. / Length (mm) : 1 1/2" BSP / 500

Serial Number: S.N. : IE18040002-0001

MADE IN TURKIYE www.ensim.com.tr

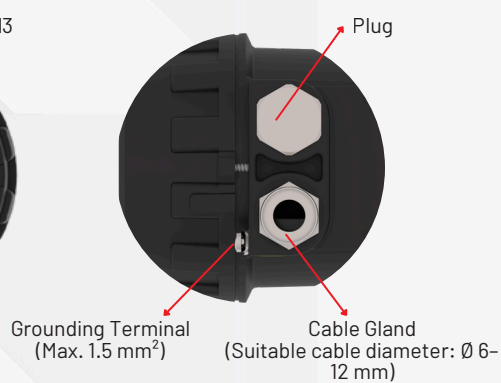
Website

Grounding Label

Warning Symbols

Housing

DO NOT OPEN THE COVER WHILE ENERGIZED
KEEP CLOSED DURING OPERATION

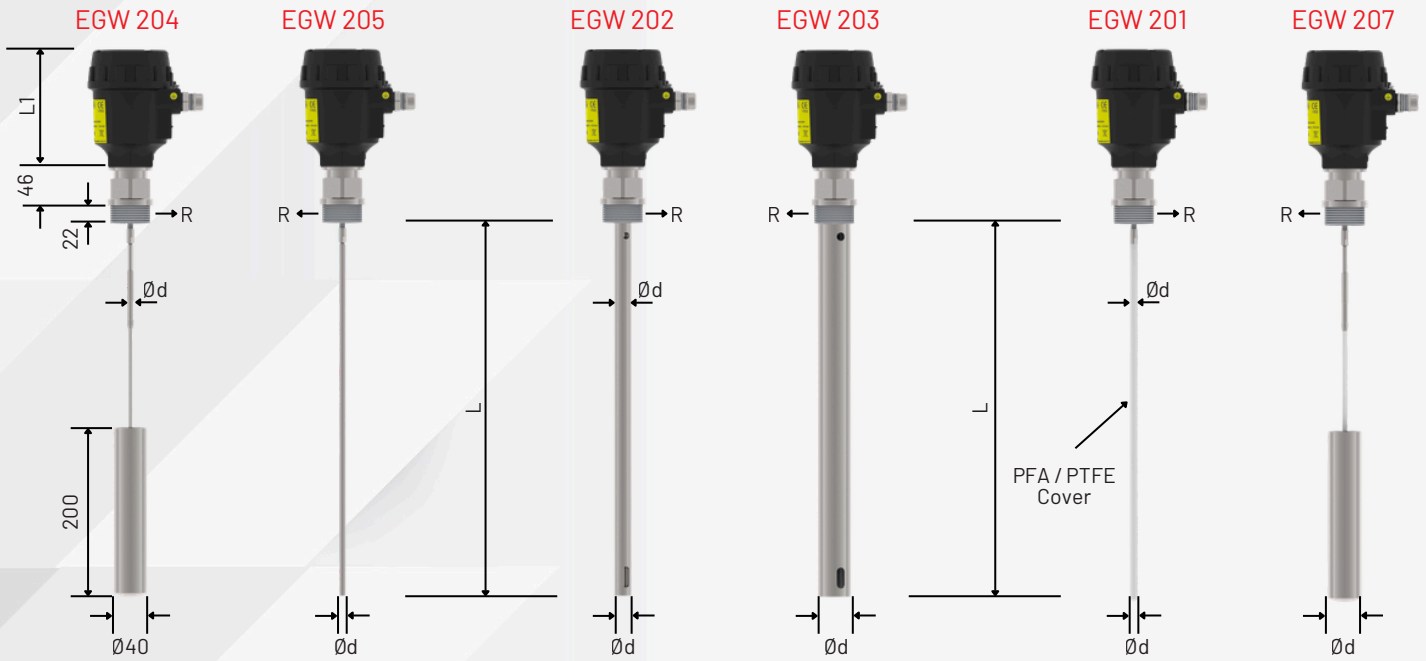


Top View



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

For Aggressive Environments



MODEL	CONNECTION R (mm)	Ød (mm)	L (mm)	L1 (mm)
EGW 204	1 1/2" BSP	Ø4 , Ø8	Max. 32 m	155
EGW 205	1 1/2" BSP	Ø8	Max. 6 m	155
EGW 202	1 1/2" BSP	Ø21	Max. 2 m	155
EGW 203	1 1/2" BSP	Ø38	Max. 4 m	155
EGW 201	1 1/2" BSP	Ø10	Maks. 6 m	155
EGW 207	1 1/2" BSP	Ø6 , Ø10	Maks. 32 m	155

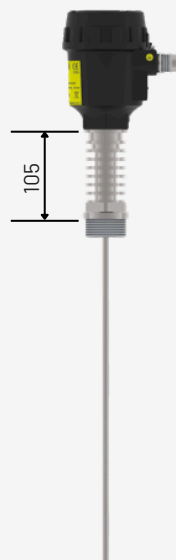
Protective Sleeve

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



Cooler

Material: 304 stainless steel
Construction: Welded
Process Temperature: Max. 230 °C

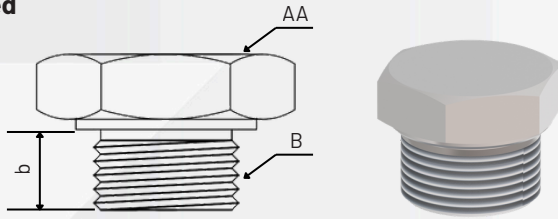


By-Pass Tube

Material: 304 or 316 SS
Construction: Welded fabrication



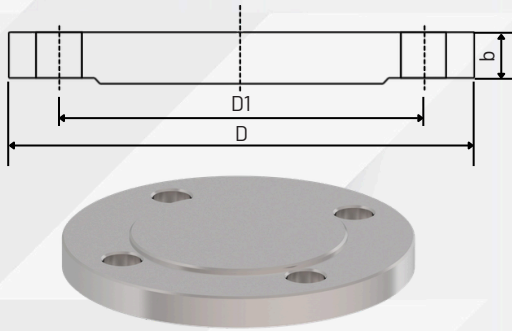
Threaded



(ISO228-1)

ORDERING CODE	Dimension B	AA (mm)	Thread Length b (mm)
0009	1 1/2" BSP	60	23
0012	2" BSP	70	23

Flanged



(ISO1092-1)

ORDERING CODE	PN 16	D (mm)	D1 (mm)	b (mm)
0505	DN 50	165	125	18
0507	DN 80	200	160	20
0508	DN100	220	180	20

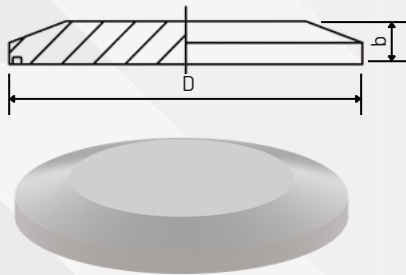
(ISO1092-1)

ORDERING CODE	PN 40	D (mm)	D1 (mm)	b (mm)
0705	DN 50	165	125	20
0707	DN 80	200	160	20
0708	DN100	235	190	24

(ANSI B16.5)

ORDERING CODE	150 LBS	D (mm)	D1 (mm)	b (mm)
1005	DN 50	152,4	121	19
1006	DN 65	177,8	139,7	22,2
1007	DN 80	190,5	152,4	23,8
1008	DN100	228,6	157,2	23,8

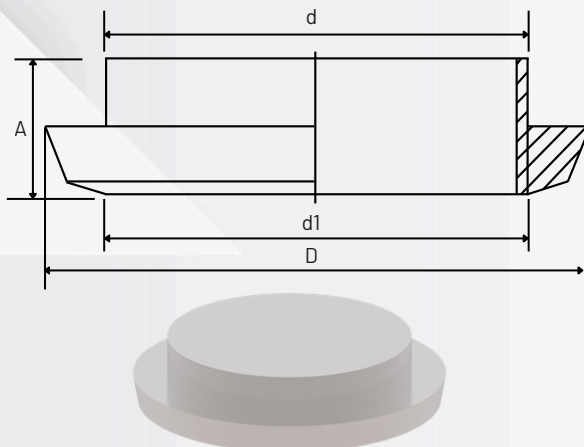
Clamp



(ISO2852)

ORDERING CODE	Dimension	D (mm)	b (mm)
1502	DN 50	64	17
1503	DN 65	91	17

Dairy



ORDERING CODE	Dimension	D (mm)	d1 (mm)	A (mm)
1600	DN 40	56	48	13
1601	DN 50	68	61	14
1602	DN 100	121	114	20

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

1	MODEL EGW			
	Standard Type - 2			
2	CERTIFICATE			
	None - 0		(EN10204-3-1) Material Certification - 1	
3	PROBE TYPE (MAX. LENGHT)			
	Single Probe - Coaxial (Max. 4 m) Ø38 - 2		Single Probe - High Temperature Type (max. 4 m) - 6	
	Single Probe - Thin Coaxial Type (max. 1 m), Ø 21- 3		Cable Probe - Insulated (0-32 m) - 7	
	Cable Probe - Uninsulated (max. 32 m) - 4		Special - x	
	Single Probe - Uninsulated (max. 6 m) - 5			
4	INSERTION LENGHT (MM) L			
	- mm			
5	PROCESS TEMPERATURE			
	(with PTFE Isolation) 200 °C - 0		(with Peek Isolation) 230 °C - 1	
	Delrin (Maks. 60 °C) - 063			
6	MECHANICAL CONNECTION			
	<u>Threaded (ISO 228-1)</u>	<u>Clamp (ISO 2852)</u>	<u>ISO Flanged (1092-1)</u>	<u>ISO Flanged (1092-1)</u>
	R 1 1/2" (Std.) - 0010	DN 50 - PN 16 - 0504	DN 50 - PN 16 - 0505	DN 50 - PN 40 - 0705
	R 2" (Std.) - 0012	DN 65 - PN 16 - 0505	DN 80 - PN 16 - 0507	DN 80 - PN 40 - 0707
		DAIRY	DN 100 - PN 16 - 0508	DN 100 - PN 40 - 0708
				DN 100 - 150lb - 1008
7	OUTPUT			
	4-20 mA two wires (Std.) + HART - 19		Special - x	
8	HOUSING			
	Plastic Housing, B20p - 103		Aluminium Housing , B21x(Std.) - 702	
			Special - x	
9	INSULATION MATERIAL			
	PTFE - 066		Ceramic - 070	
	PEEK - 068		Special - x	
10	ELECTRODE INSULATION MATERIAL			
	None (Std.) - 0		PTFE - 066	
			PFA - 087	

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

11 CONNECTION MATERIAL

304 SS - 001	Special - x
304 SS - 002	

12 ELECTRICAL CONNECTION

Terminal - 00	Special - x
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11 OPTIONAL

None / 0	Cooling Apparatus / H
By - Pass Tube / T	Special / x
Protective Sleeve / K6	

SAMPLE

Guided Wave Radar , L=500 mm , R 1 1/2" , 4-20 mA + HART , PTFE INSULATION

