

27L SERIES



27L series includes Float Reed level transmitters. Inside the float is placed a toroidal magnet which drives, without contact, Reed contacts located inside the guide pipe. Moving along the guide pipe the float changes the reed contact status. These variations are then acquired by the electronic board and converted into a current signal.

This system enable a continuous level measurement (output 4 ÷ 20 mA) with high repeatability and linear level indication independently from tank shape, or allows to realize on-off controls by using two floats (output On - Off 5 ÷ 15 mA).

Reed chain replacement can be done without dismantling the transmitter from the process and doesn't need any recalibration.

As option it is possible a PT100 installation in order to get the local temperature of the fluid.

APPLICATION FIELDS

27L series transmitters are used in marine and industry for level detection of liquids tanks.

The measurement is not affected by parameters such as conductivity, pressure, temperature, viscosity, tank shape, etc.

Our technical office is at your disposal for special application

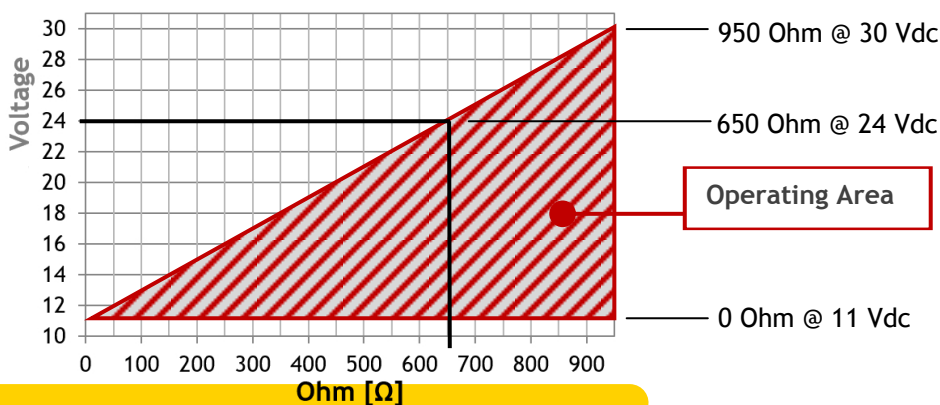


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TECHNICAL FEATURES

Electrical parameters

| | |
|----------------------|---|
| Supply: | 2 wires: 12 ÷ 30 Vdc 3 wires: 16 ÷ 26 Vdc |
| Output signal: | 2 wires: 4 ÷ 20 mA 3 wires: 0 ÷ 10 Vdc (min 30 mVdc) 0 ÷ 5 Vdc (min 30 mVdc) |
| Current consumption: | 2 wires: 4 ÷ 20 mA 3 wires: < 5mA @10 KΩ carico \ load |
| Load resistance: | 2 wires: $R_{\Omega} = (U_{supply} - 12 V) / 0.02 A$ 3 wires: $R_{\Omega} \geq 10 K\Omega$ |
| Max load: | As per chart |



Measurement performance

| | |
|--|-------------------------------------|
| Total accuracy (*): | < ± 5 mm |
| Measuring range: | 0.6 ÷ 10 m |
| Minimum specific gravity of the fluid: | 0.5 kg / dm ³ |
| Maximum pressure: | standard: 16 bar special: 40 bar |
| Long term stability: | < 0.1 % FS for year |

Environmental Conditions

| | |
|----------------------------|---|
| Ambient temperature: | -40 ÷ +85 °C ATEX T6, T85 °C: -40 °C ≤ Tamb ≤ 55 °C ATEX T5, T100 °C: -40 °C ≤ Tamb ≤ 70 °C |
| Process temperature: | -40 ÷ +85 °C Finned body: -40 ÷ 130 °C |
| Storage temperature: | -40 ÷ +90 °C |
| Ingress protection degree: | CuAISI 316 Ø 27 Housing: IP65 AISI 316 Ø55 Housing: IP67 |

Notes

(*) Including hysteresis, non-linearity and non-repeatability (IEC 60770)

APPROVALS

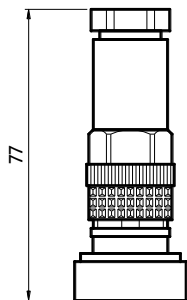
Type approvals

| | | |
|-----------------------------|---|--|
| Directive 2014/34/EU (ATEX) | II 1G Ex ia IIC T6, T5 Ga | |
| Directive 2014/68/EU (PED) | Up to Category II, for fluids in Group 1 | |
| Directive 2014/30/EU (EMC) | Adequate level of electromagnetic compatibility | |
| Functional Safety | SIL2 SFF = 75.00 % | PFH [Hours ⁻¹] = $9.8059 \cdot 10^{-8}$ DC = $\lambda_{DD} / (\lambda_{DD} + \lambda_{DU}) = 82.5 \%$ |
| Marine type approval | In compliance with applicable requirements of RINA type approval system | |

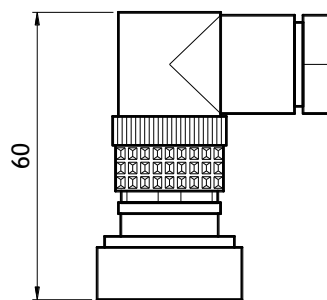
ELECTRICAL WIRING

Transmitters are protected against reverse polarity. The recommended wiring cable is a screened signal cable, with wires of min. section area of 0.2 mm² (AWG24) and shielding > 80 %.

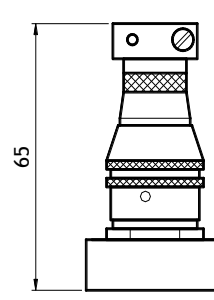
Following electrical connections are to be coupled only with Ø27 housing. Remaining housing have terminal block.



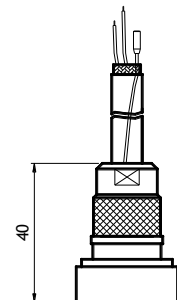
Code 01
Plug connector M12 IP67
straight



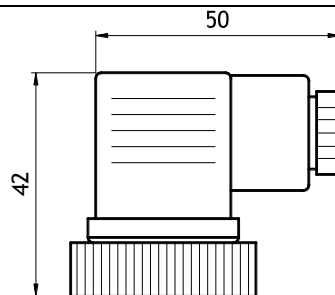
Code 02
Plug connector M12 IP67
90° angle



Code 08
MIL connector



Code 16
AISI 316 Cable gland for output
standard sealing IP67



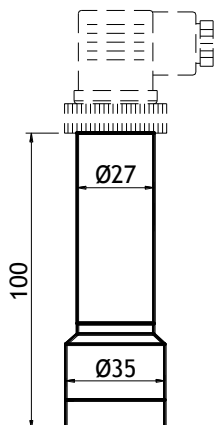
Code 03 DIN 175301
PG9 3 poles IP65

Code 04
DIN 175301 PG9 3+1
poles IP65

Code 05
DIN 175301 PG11 3
poles IP65

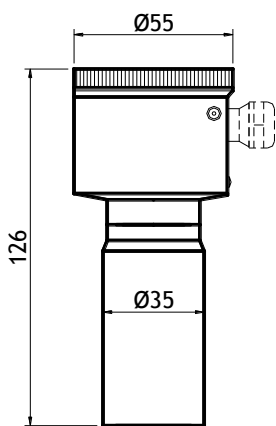
Code 06
DIN 175301 PG11 3+1
poles IP65

HOUSING MATERIAL AND TYPE



Code A04 - AISI 316

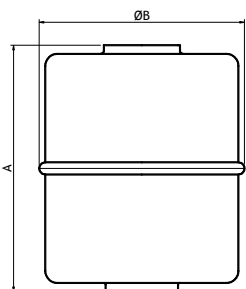
- Material: AISI 316 \ AISI 316 (Ø 27)
- Zone: No Ex
- Protection Degree: IP65



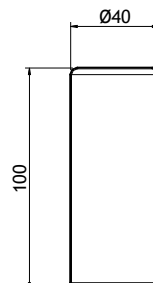
Code A08 - AISI 316

- Material: AISI 316 \ AISI 316 (Ø 55)
- Zone: II 1G
- Protection Degree: IP67 Option
- PT100 inside guide pipe

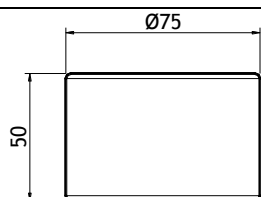
FLOATS



- Code G1 Density A= 36 B=Ø 30
0.67 Kg/dm³
- Code G2 Density A= 51 B=Ø 44,4
0.5 Kg/dm³
- Code G3 Density A= 62.5 B= Ø 55
0.5 Kg/dm³
- Material AISI 316

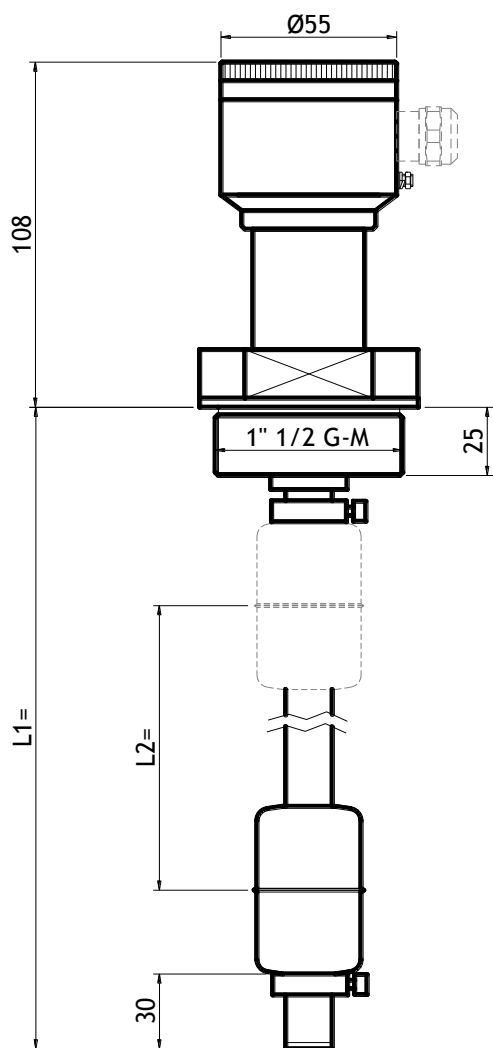


- Code G7
- Material SPANSIL
- Density 0.35 Kg/dm³



- Code G5
- Material NEOPRENE
- Density 0.3 Kg/dm³

DIMENSIONAL DRAWINGS



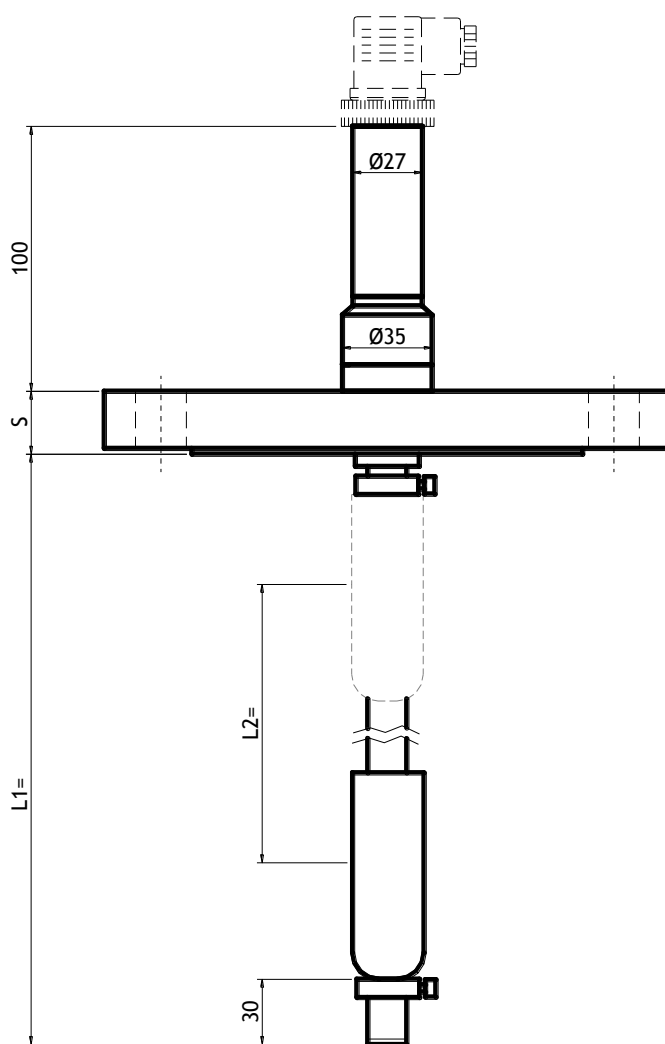
Housing suitable for Atex installations

Screwed process connection

L2 -> Measuring range

Option

PT100 installation inside the guide pipe (Code 16)



Housing not suitable for Atex installations


Screwed process connection

L2 -> Measuring range

ORDERING CODE

| | |
|-------------------------------------|--------------------------------------|
| 01 Type of measure | |
| <input type="checkbox"/> | E Level |
| 02 Sensor type | |
| <input type="checkbox"/> | G1 Float AISI 316 Ø 30 mm OVP 40 |
| <input type="checkbox"/> | G2 Float AISI 316 Ø 42 mm OVP 16 |
| <input type="checkbox"/> | G3 Float AISI 316 Ø 55 mm OVP 16 |
| <input type="checkbox"/> | G5 Float Neoprene Ø 75 mm OVP 20 |
| <input type="checkbox"/> | G7 Float Spansil Ø 40 mm OVP 20 |
| <input type="checkbox"/> | ZZ Special |
| 03 Measuring range | |
| <input type="checkbox"/> | L01 0 ÷ 0.5 m |
| <input type="checkbox"/> | L02 0 ÷ 1 m |
| <input type="checkbox"/> | L03 0 ÷ 1.5 m |
| <input type="checkbox"/> | ZZZ Special |
| 04 Filling oil | |
| <input type="checkbox"/> | N No filing |
| 05 Operating temperature | |
| <input type="checkbox"/> | B -40 ÷ 85°C Standard |
| <input type="checkbox"/> | F -40 ÷ 130°C Finned body |
| 06 Housing material and type | |
| <input type="checkbox"/> | A04 AISI 316 Ø 27 mm |
| <input type="checkbox"/> | A08 AISI 316 Ø 55 mm |
| 07 Process connection | |
| <input type="checkbox"/> | S70 Screwed 1 1/2" G-M |
| <input type="checkbox"/> | S81 Screwed 2" G - M flush diaphragm |
| <input type="checkbox"/> | F49 Flange DN 80 PN 10 / 25 |
| <input type="checkbox"/> | F75 Flanged DN 2" ANSI 150 RF |
| <input type="checkbox"/> | Z99 Special |
| 08 Extension length | |
| <input type="checkbox"/> | T42 Pipe in AISI 316 Ø 16 mm < 1 m |
| <input type="checkbox"/> | T43 Pipe in AISI 316 Ø 16 mm < 1.5 m |
| <input type="checkbox"/> | T44 Pipe in AISI 316 Ø 16 mm < 2 m |
| <input type="checkbox"/> | Z99 Special |
| 09 Sensor material (float) | |
| <input type="checkbox"/> | A AISI 316 |
| <input type="checkbox"/> | T Neoprene |
| <input type="checkbox"/> | V Spansil |
| <input type="checkbox"/> | Z Special |
| 10 Process gasket material | |
| <input type="checkbox"/> | T All welded |
| <input type="checkbox"/> | Z Special |
| 11 Wetted parts material | |
| <input type="checkbox"/> | B AISI 316L |
| <input type="checkbox"/> | G AISI 316 + Spansil / Neoprene |
| <input type="checkbox"/> | Z Special |

ORDERING CODE

| 12 Electrical connection | |
|--------------------------|---|
| 01 | Plug connector M12 IP67 straight |
| 02 | Plug connector M12 IP67 90° angle |
| 03 | Connector DIN 175301 PG9 3 poles IP65 |
| 08 | MIL Connector |
| 09 | RSF Lumberg Connector 4 poles |
| 19 | AISI 316 Cable gland PG9 IP67 for cable \varnothing 5 ÷ 7 mm |
| 20 | AISI 316 Cable gland PG13 IP67 for cable \varnothing 8 ÷ 12 mm |
| 36 | AISI 316 nipple 1/2" G-F |
| 37 | AISI 316 nipple 1/ 2" NPT-F |
| 39 | AISI 316 nipple M20x1.5-F |
| 99 | Special |
| 13 Electrical output | |
| 1 | Current 4 ÷ 20 mA 2 wires |
| 6 | Voltage output 0÷5 V 3 wires (std 0,25% FS) |
| 7 | Voltage output 0÷10 V 3 wires (std 0,25% FS) |
| 14 Ex type approval | |
| A2 |  II 1G Ex ia IIC T6, T5 Ga |
| N0 | No Ex certification |
| 15 Options | |
| 02 | Marine type approval |
| 22 | PED Certificate |
| 21 | SIL Certificate |
| 10 | Calibration report on 5 points |
| 01 | Test and material report according to EN 10204 |
| 16 | PT100 Integral Mounting Ex Version |
| NN | No options |

ACCESSORIES



Cod. D20
 Universal local display

and MORE

- Two floats on-off version for minimum and maximum level alarm or high and overflow
- Floats for specific gravities on customer request
- Flexible immersion probe

OTHER PRODUCTS



Mod. 271
 Submersible electronic level transmitters



Mod. T7B
 Electronic displacer level transmitters



Mod. T7L
 Float level transmitters 4÷20 mA + HART®



Mod. T7V
 Field digital indicator