



**beyond measurement** level | flow | analytical | pressure | temperature



#### OUR HISTORY

### **SGM-Lektra, over 40 years in the sector of industrial and process instrumentation**

Established in 1977, SGM LEKTRA produces instruments for measurement and control in industrial processes, in the integrated water cycle, and in the monitoring of temperatures for the agrifood and milling sectors.

Each instrument is designed in accordance with the normative reference principles and produced in a quality control regime. Particular attention is dedicated to the applications for the remote control and programming of our instruments.

#### OUR COMMITMENT

### **The ongoing development and research of new technologies intended to improve and expand our line of products is an integral part of our activity**

The internal R&D laboratory, already listed among the laboratories recognised by the MIUR (Italian Ministry of Instruction, Universities and Research), works constantly, so that we can apply the most innovative technologies to our products. Our technicians, supported by adequate resources and collaborations with the specialised University Departments, are committed to adapting the products to the increased needs of integration and communication with the field and with the operators in the framework of industry 4.0.

#### GLOBAL PRESENCE

### **An established domestic sales network with a growing international orientation**

In addition to the reinforcement of the production facility, SGM LEKTRA has reorganised the commercial network and improved, with an accurate selection, the network of critical subcontracting. The commercial sales strategies, as well as those of production and subcontracting, have been reviewed according to an increasingly greater international presence, in markets with a different kind of development, obtaining reassuring results and, particularly, a significant growth in exports. To develop this strategy, we have constituted, with a local partner, a unit located in Shanghai under the name SGM-SHA and in addition, commercial collaboration relationships have been activated in important markets in developing countries.



The future of SGM LEKTRA, of its technologies and of its products, is delineated and summarised in three words: integration, innovation and interaction.

## ULTRASONIC



- Suitable for the measuring and control of level • system without contact with the material to be measured
- measuring range from 1.5 m to 12 m • applicable for the measuring of liquids and solids in pieces • Regardless of the electrical characteristics of the materials to be measured • up to 70°C (product) and for pressures up to 1 bar relative

## RADAR



- suitable for level measuring • applicable for the measuring liquids, solids and powders
- measuring range up to 70 m (radial)
- max. measuring range up to 30 m (cable), 3 m (rod) • applicable for the measuring of products with  $\epsilon_r > 1.2$  • up to 250°C (product) and for pressures up to 40 bar relative

## CAPACITIVE



- suitable for level measuring and control • system in contact with the material to be measured • applicable to liquids, solids and powders • up to 150°C (product) and for pressures up to 25 bar
- measuring electrodes with rod or cable

## HYDROSTATIC HEAD



- suitable for the level measuring of “clean” liquids and waste water • system in contact, immersed in the fluid to be measured
- max. measuring range 200 m H<sub>2</sub>O

## RESISTIVE



- suitable for on-off control • system in contact with the material to be measured • single and multi-electrode (max. 5 rods/cables) • applicable to electrically conductive liquids • applicable to level alarms and pump control • up to 180°C (product) and for pressures up to 25 bar

## DIAPASON



- suitable for on-off control • system in contact with the material to be measured • compact version, rigid and semi-rigid extension • versions for powders / granules and versions for liquids • up to 150°C (product) and for pressures up to 25 bar



## ELETTROMAGNETICS



- suitable for the measuring of conductive liquids in pressure piping
- internal coating of the sensor tube in neoprene rubber or PTFE
- excellent level of precision and repeatability
- versions for use in the food and pharmaceutical sectors
- datalogger via USB pen drive
- MID certification
- setting and visualization of the principal data via Android app

## ULTRASONIC | TRANSIT TIME



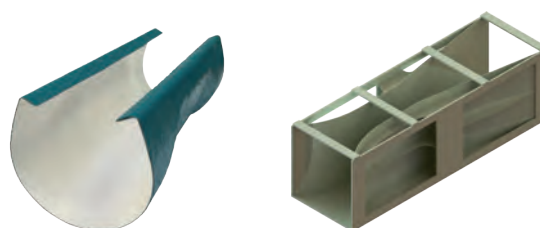
- specific for conducting capacity measuring in piping with clean liquids
- non-intrusive installation by means of clamp-on sensors
- datalogger
- calorie count function
- available in battery and external power supply versions

## ULTRASONIC | OPEN CHANNEL



- suitable for the measuring of capacities either in open channels or in piping without pressure
- programmable for any kind of hydraulic jump
- system without contact with the fluid
- an advantage in terms of maintenance

## HYDRAULIC MODELLERS



- suitable for applications in open channels (BS) and installation in partially full pipes (PB)
- widely used for capacity monitoring in “dirty waters” thanks to its intrinsic self-cleaning effect

## MCA800



unit adapted for analyses in waste water plants. MCA800 can be connected to sensors for the measuring of pH, Redox, turbidity, solids in suspension, conductivity, dissolved oxygen. Directly connection up to 2 sensors

## 104C - pH



The 104C sensor is suitable for measuring pH in many applications. The porous septum in Teflon® resists to incrustations and chemical attacks.

## 114C - conductivity



Used for measuring conductivity in pure and process waters. Conductive measuring method with two electrodes, reliable thanks to the use of graphite electrodes with temperature compensation

## 114CH - high conductivity



used for measuring high conductivity in pure and process waters. Reliable two-electrode conductive measurement method thanks to the use of temperature-compensated graphite electrodes.

## 164CH - high turbidity



suitable for the measuring of turbidity in pure and drinking water, primary water, industrial and recirculation water. The measurement is performed using 90° light scattering, according to the ISO 7027 / EN 27027 standard.

## 164CL - low turbidity



designed for the measuring of turbidity in pure and drinking water, primary water, industrial and recirculation water. The measurement is performed using 90° light scattering, according to the ISO 7027 / EN 27027 standard

## 164CU - solids in suspension



The 164CU sensor, connected to the MCA800 unit, is used for the optical measuring of solids in suspension in industrial and process waters up to 30 g/l. The probe uses the method of light absorption measuring.

## 324C - dissolved oxygen



The 324C sensor is used for the optical measuring of oxygen in pure and process water. The measuring principle is based on the dynamic abatement of luminescence by the molecular oxygen

## 604C - redox



suitable for measuring ORP in several applications. The porous septum in Teflon® is resistant to incrustations and chemical attack.

# Pressure Measurement



## KPT



- miniature pressure transmitter, suitable for the continuous level measuring of liquids.
- measuring accuracy  $\pm 0.25\%$ .
- threaded and sanitary DIN / clamp fittings.

## CPT



- pressure transmitter 4÷20mA with 2 wires
- capacitive sensor with ceramic membrane
- accuracy: 0,2% FS
- LCD display
- compact transmitter, can be installed in any position

## SPT



- level transmitters 4÷20mA with 2 wires
- pressures measured: Negative, Absolute
- max. accuracy  $\pm 0.075\%$  FS
- for applications under severe conditions
- for overload up to 500 bar (50MPa)
- HART protocol
- ATEX

## SDT



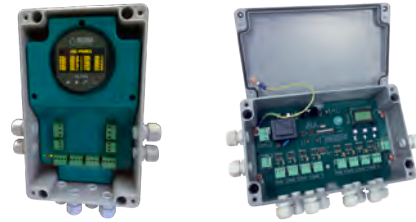
- differential pressure transmitter 4÷20mA with 2 wires
- measuring range from 0÷1mbar (0÷100Pa) to 0÷20bar (0÷2MPa)
- max. accuracy  $\pm 0.075\%$  FS
- HART protocol
- P. overload up to 400bar (40MPa)
- ATEX

## DIGITAL MULTIPOINT TEMPERATURE PROBES



- multipoint probes with sheath in AISI304 • suitable for the detection of temperature inside silos or warehouses for the storage of raw materials (cereals and derived products) • system in contact with the material to be measured • ATEX certification

## CONCENTRATORS FOR TT|TM PROBES



- Multiplexer concentrators suitable for the management and control of 1 to 32 digital thermometric probes, single or multipoint • on board setting and visualization via display and keyboard or by means of the Agritherm50 software or AgrithermT60 unit

## HUMIDITY PROBES



- Suitable for use in the presence of dust • IP66 housing protection • 2 4÷20mA outputs • ATEX certification

## RADAR LEVEL PROBES



- Measurement range 70 m • Radar pulses at 26 GHz (K-band) • Visualization on the alphanumeric display of the level measurement and the echo signal curve • ATEX certification

## DISPLAY



- temperature visualization unit specific for small size plants • 4.5" touch screen display panel • temperature visualization in automatic or manual sequence

## SOFTWARE AND MONITORING UNITS



- software specifically designed for the complete monitoring of environmental parameters in storage plants • continuous detection of all reading points • specific for connection with MUXM / TM - MUX / TT

sgm  lektra



## Level Measurement

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# Ultrasonic

Ultrasonic level probes are instruments used for measuring levels of liquids or solid materials by sending high-frequency (ultrasonic) pulses and analysing the time taken for the echo to return. This method is highly versatile and can be used to measure levels of liquids and bulk solids, e.g. in industrial tanks, silos or transport tanks or vats. Ultrasonic probes are suitable for long-range measurements and for applications where non-invasive readings are required. They are not recommended in pressurised environments, in processes that are dusty or where thick foam is present on liquids.

Overall, ultrasonic probes have multiple advantages and are a common option for level measurement in industrial applications. It is, however, important to consider the specific requirements of the application and to carefully evaluate the technical specifications before selecting this type of measurement technology.



	METER	KTU5
<b>Application</b>	liquids / solids	liquids / solids
<b>Technology</b>	4/2 wire	4 wire
<b>Blocking distance</b>	25 / 40 cm	25 / 40 cm
<b>Working temperature</b>	-20 ÷ +60° C	-20 ÷ +60° C
<b>Max pressure</b>	+ 1 bar	+ 1 bar
<b>Measurement range</b>	6/10 m (liquids)	6/10 m (liquids)
<b>Sensor material</b>	PP / PVDF	PP
<b>Process connection</b>	G2" / flange DN80	G2" / flange DN80
<b>Accuracy</b>	0,2% (the measured distance)	0,2% (the measured distance)
<b>Protection</b>	IP67	IP67/68
<b>Power supply</b>	20÷30Vdc   11÷14Vdc	20 ÷ 30 Vdc   24/115/230 Vac
<b>Comm. port</b>	MODBUS / HART / BLUETOOTH	MODBUS
<b>Atex</b>	yes	no

In relation to the type of application and the product to be measured, SGM-Lektra offers the following transmitters:

- IP67|68 transmitters, series PTU up to 12 m
- IP67 compact units with removable display series METER up to 10 m
- IP67|68 compact units KTU series up to 10 m with remote display
- Associated units VLW90M - VLW60T - VLW602 (only for PTU series)

Depending on the technology (2 or 4 wire) it is possible to use HART, Modbus RTU communication system or Bluetooth. Softwares or Android App for units communication and calibration are available on request.



	PTU50 / 51 / 56		
<b>Application</b>	liquids	liquids / solids	liquids / solids
<b>Technology</b>	4 wire		
<b>Blocking distance</b>	5 cm	30 cm	50 cm
<b>Working temperature</b>	-20 ÷ +60° C		
<b>Max pressure</b>	+ 0,5 bar		
<b>Measurement range</b>	1 m (liquids)	6 m (liquids)	12 m (liquids)
<b>Sensor material</b>	PP		
<b>Process connection</b>	G1" / flange DN100;125		
<b>Accuracy</b>	0,2% (the measured distance)		
<b>Protection</b>	IP67 68		
<b>Power supply</b>	20 ÷ 30 Vdc		
<b>Comm. port</b>	MODBUS	MODBUS / BLUETOOTH	
<b>Atex</b>	no		



## METER

### Ultrasonic level transmitter

Range 0,25 ÷ 6 m / 0,4 ÷ 10 m

IP67

Suitable for liquids and solids

MODBUS

Power supply 20÷30Vdc; 12 Vdc

Output 4 ÷ 20 mA (2 wire version);  
4 ÷ 20 mA + 2 relays set (4 wire version)

ATEX

Remote control via Smartphone

The METER ultrasonic level transmitters have 3 modes for configuration and calibration:

- 1) by means of the configuration module VL601 which can be switched on and off on the METER (VL601 module is equipped with large LCD matrix display).
- 2) via MODBUS RTU by PC interface with USB/RS485 and communication software 010F105A
- 3) via smartphone Android App (only 4 wires version).

The non-contact technology makes it ideal for installations where it is necessary to minimize the maintenance costs. The removable display module allows its use as a fixed display or calibration module. Are available versions with 2-wire or 4-wire, 2-wire with communication HART and ATEX certification, 4-wire with communication MODBUS and 2 relays.

## Technical Features

### Housing/sensor material

PC or Al / PP wetted part (only PVDF for ATEX certified vers.)

### Mechanical installation

2" GAS M (PP flange DN80 opt.)

### Protection degree

IP67/IP68 (Sensor)

### Electrical connection

Internal push connectors

### Working temperature

-20 ÷ +60°C

### Pressure

from 0,5 to 1,5 bar (absolute)

### Power supply

12Vdc / 20÷30Vdc

### Power consumption

0,6W (2-wires) - 1,5W (4-wires)

### Analog output

4...20mA, max 750ohm

### Relays output

(4-wire only) n°2 3A 230Vac (n.o.)

### Digital communication

MODBUS RTU for 4-wire vers. ; (opt.)

HART for 2-wire vers.

### Max measure range

max 0.25 ÷ 6m

max 0.40 ÷ 10m

In case of non perfectly reflecting surfaces, the maximum distance value will be reduced

### Blind distance

0,25m (6m versions) / 0,40m (10m versions)

### Temperature compensation

digital from -30 to 80°C

### Accuracy

±0,2% (of the measured distance)  
not better than ±3mm.

### Resolution

1mm.

### Calibration

4 buttons or via HART / MODBUS RTU / BLUETOOTH

### Warm-up

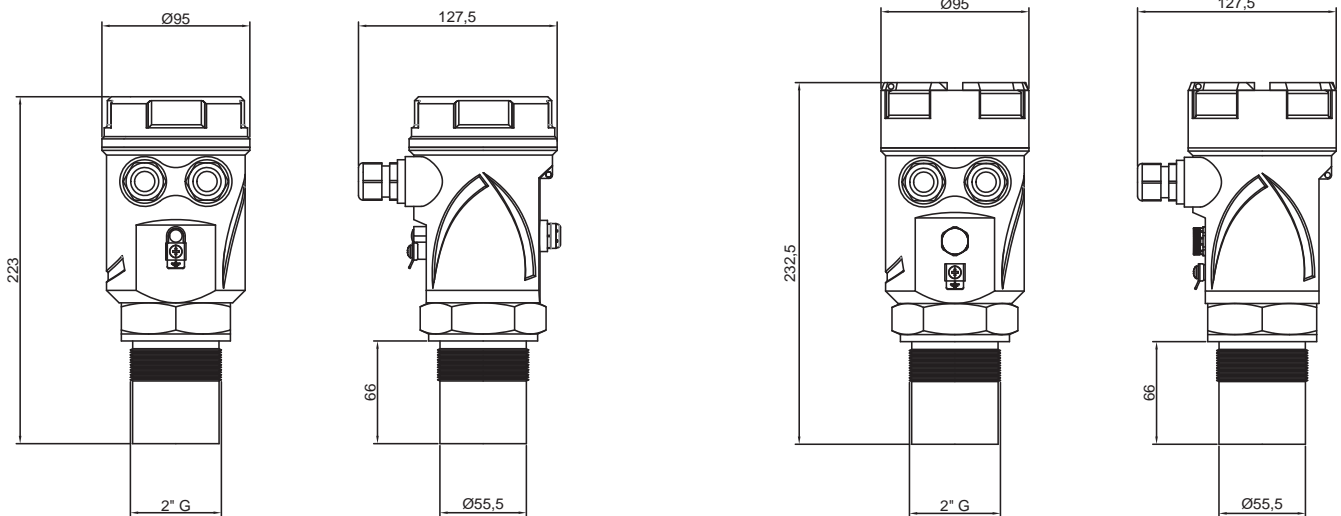
5 minutes typical

### LCD Display

Plug-in display/keyboard 4 buttons matrix LCD

### Ex-proof

ATEX II 1/2G Ex ia/db IIC T4 Ga/Gb ;  
II 1D Ex ta IIIC T135°C Da Tamb: -20 +60°C



Standard Version

ATEX Version

**METER**

Ultrasonic level transmitter

4±20mA output. Housing with osmotic filter  
 G 2" threaded connection + nr. 1 2" BSP/PP fixing bolt (only for PP versions)  
 Setting by keyboard/display removable module (opt.)  
 or via BLUETOOTH with Android APP (opt.)  
 Working temperature: -20° ÷ +60°C

Version	
-	2-wire, range 6m, HART, ATEX II 1/2G Ex ia/db IIC T4 Ga/Gb ; II 1D Ex ta IIIC T135°C Da Tamb: -20 +60°C
0	2-wire, range 10m, HART, ATEX II 1/2G Ex ia/db IIC T4 Ga/Gb ; II 1D Ex ta IIIC T135°C Da Tamb: -20 +60°C
1	2-wire, range 6m
2	2-wire, range 6m, HART
3	2-wire, range 6m, ATEX II 1/2G Ex ia/db IIC T4 Ga/Gb ; II 1D Ex ta IIIC T135°C Da Tamb: -20 +60°C
4	4-wire, range 6m, 2 relays, MODBUS
5	2-wire, range 10m
6	2-wire, range 10m, ATEX II 1/2G Ex ia/db IIC T4 Ga/Gb ; II 1D Ex ta IIIC T135°C Da Tamb: -20 +60°C
7	2-wire, range 10m, HART
8	4-wire, range 10m, 2 relays, MODBUS
9	Special
Housing / Sensor materials	
F	PC with transparent cap IP67 / PP
L	PC with blind cap IP67 / PP
P	PC with transparent cap IP67 / PVDF
R	PC with blind cap IP67 / PVDF
S	Aluminum with transparent cap IP67 / PP
U	Aluminum with transparent cap IP67 / PVDF (for ATEX versions)
V	Aluminum with transparent cap IP67 / PVDF
Z	Special
Power supply	
4	24Vdc (20÷30Vdc 4-wire versions)
5	11÷14Vdc - only for version 1 and 4 (max range 3m), 5 and 8 (max range 5m)
9	Special
Accessories	
A	None
B	BLUETOOTH - only for 4-wire versions (vers. 4 and 8)
C	DN80 PN6 UNI 1092-1/PP flange (600J001T)
D	VL601 keyboard/display removable module (VL601SGM)
P	PP sensor extension for a total insertion of 250 mm (not available for PVDF sensors)
S	MODBUS communication software (010F105A)
Z	Special



## KTU5 Ultrasonic level transmitter

Range 0,25-6 / 0,4-10m

IP67|68 protection

Suitable for liquids and granules

MODBUS RTU comm. protocol

Power supply 12Vdc; 20÷30Vdc; 24,115,230Vac

Output: 4 ÷ 20 mA + 2 adjustable relays

Compact ultrasonic instrument for general applications in liquids and bulk solids. Range from 0,25 to 5 m or 0,4 to 8 m.

KTU5 has 3 modes of calibration:

by means of on-board buttons;

by means of VL620|621 module, "REMOTE DISPLAY";

by means of PC with s/w 010F105A MODBUS RTU.

This instrument is ideal for applications which require a compact transmitter without local display. There is a wide choice of supply voltage, 24 Vdc, 24 Vac, 115 Vac or 230 Vac. Two configurable relays allow alarm thresholds and pumps control. A complete self-diagnosis makes it suitable for remote unattended measurements. Another important feature is the body, because it's full manufactured in PP which makes suitable for applications with acids.

### Technical Features

#### Housing/sensor material

PP

#### Mechanical installation

2" GAS M (PP flange DN80 opt.)

#### Protection degree

IP67|68

#### Electrical connection

Internal push connectors

#### Working temperature

-20 ÷ +60°C

#### Pressure

from 0,5 to 1,5 bar (absolute)

#### Power supply

12Vdc; 20÷30Vdc; 24,115,230Vac

#### Power consumption

2W

#### Analog output

4...20mA, max 750ohm

#### Relays output

n°2 3A 230Vac (n.o.)

#### Digital communication

MODBUS RTU

#### Max measure range

max 0.25 ÷ 6m

max 0.40 ÷ 10m

In case of non perfectly reflecting surfaces, the maximum distance value will be reduced

#### Blind distance

0,25m (6m versions) / 0,40m (10m versions)

#### Temperature compensation

digital from -30 to 70°C

#### Accuracy

±0,5% (of the measured distance)  
not better than ±3mm.

#### Resolution

1mm.

#### Calibration

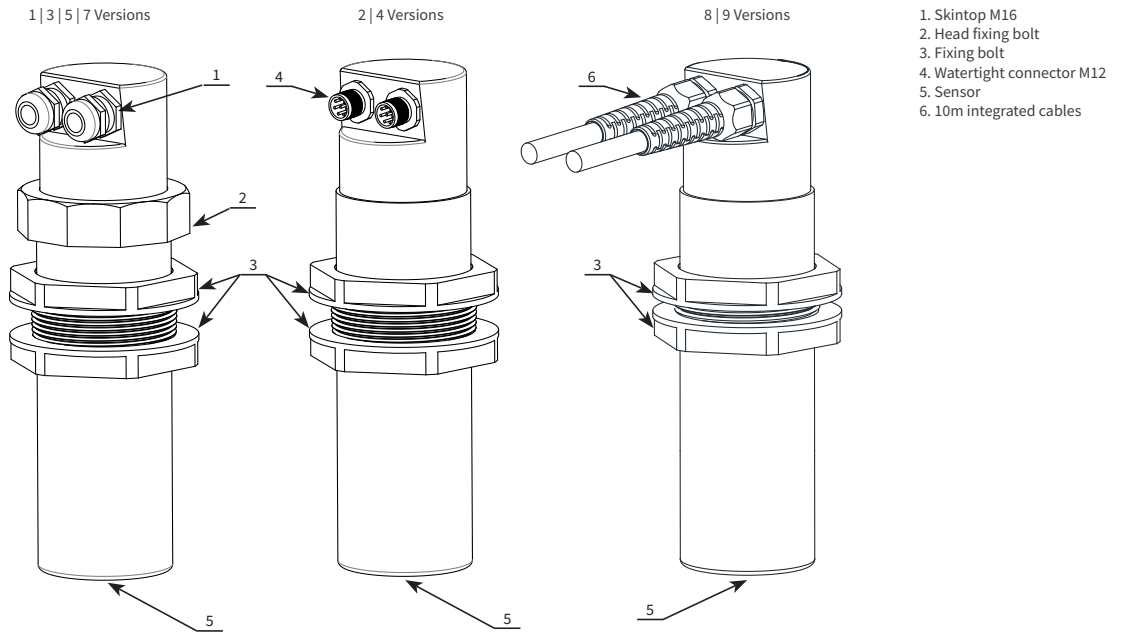
2 buttons or via MODBUS RTU

#### Warm-up

5 minutes typical

#### Display

VL620|621 programming module (opt.) with 4 keys and matrix LCD



**KTU5**

**Level control and measure unit**

Ultrasonic - G 2"/PP threaded connection + n.2 2" BSP/ PP fixing bolts  
 4÷20mA output with 2 relays for alarms or pumps control  
 Calibration by 2 push-buttons, VL620/VL621 programming display  
 or via MODBUS RTU  
 Working temperature: -20 ÷ +60°C

Version	
1	IP67, range 0,25÷6m, with electrical connection by 2 internal screw terminal blocks
2	IP67, range 0,25÷6m, with IP67 male connector
3	IP67, range 0,40÷10m, with electrical connection by 2 internal screw terminal blocks
4	IP67, range 0,40÷10m, with IP67 male connector
5	IP67, range 0,25÷6m, with electrical connection by 2 internal screw terminal blocks with BIS/USC measurement units
7	IP67, range 0,40÷10m, with electrical connection by 2 internal screw terminal blocks with BIS/USC measurement units
8	IP68 with 10m integrated cables - range 0,25÷6m - calibration ONLY via MODBUS RTU
9	IP68 with 10m integrated cables - range 0,4÷10m - calibration ONLY via MODBUS RTU
Housing material	
B	PP polypropylene
Z	Special
Power supply	
0	24Vac 50÷60Hz
1	115Vac 50÷60Hz
2	230Vac 50÷60Hz
4	20÷30Vdc
5	12Vdc Attention! Max distance 3 m (only for version 1, 2, 5 and 8)
9	Special
Accessories	
A	None
C	DN80 PN6 UNI 1092-1 / PP flange (600J001T)
D	VL620 keyboard/display programming module with 1 m cable and USB connection (for versions 1,3,5,7)
E	Mounting bracket in PP (835B026Z)
F	VL621 keyboard/display programming module with 1 m cable (for versions 2,4)
J	Nr. 2 Junction box in PC 6 way IP65 (490B074C) - for IP68 versions
S	S/W for communication MODBUS (010F105A)
T	Couple of 5m cables with IP67 female connector (for versions 2 and 4)
U	Couple of 10m cables with IP67 female connector (for versions 2 and 4)
V	Couple of 15m cables with IP67 female connector (for versions 2 and 4)
W	Couple of 20m cables with IP67 female connector (for versions 2 and 4)
Z	Special





## PTU50 Ultrasonic level transmitter

Range 0.05 ÷ 1 m

Blind zone 5 cm

IP67|68

Suitable for measuring of liquids

MODBUS RTU/BLUETOOTH comm. protocol

Power supply 24 Vdc

Output: 4 ÷ 20 mA analogue output

Non-intrusive level measurement systems are the preferred technology for many applications and for this reason SGM-LEKTRA developed the level/distance transmitters PTU50. These units are compact with a unique simplicity of commissioning. Calibration and transmitter configuration is possible, even remotely, thanks to a MODBUS RTU connection together with the related software for the PC, or via VLW90M / VLW60T / VLW602 display unit. The IP68 transmitter protection allows installation in underground wells.

### Technical Features

#### Housing material

PP

#### Mechanical installation

1" GAS M - PP flange DN100 opt.

#### Protection degree

IP67|68

#### Electrical connection

IP67 male connector with  
5/10/15/20m linking cable

#### Working temperature

-20 ÷ +60°C

#### Pressure

From 0,5 to 1,5 bar (absolute)

#### Power supply

20÷30Vdc

#### Power consumption

1.5W

#### Analog output

4÷20mA max 750ohm

#### Digital communication

MODBUS RTU

#### Range

0.05÷1m

In case of non perfectly reflecting surfaces, the maximum distance value will be reduced

#### Temperature compensation

digital in the working temperature

#### Accuracy

±0,2% (of the measured distance) not better than ±3mm

#### Resolution

1mm

#### Calibration

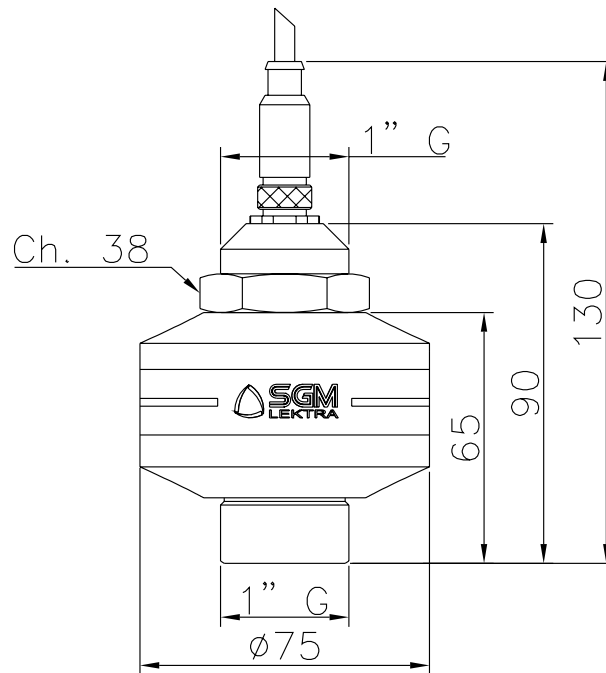
VLW90M; VLW60T; VLW602 prog. module or by MODBUS

#### Warm-up

30 minutes

#### Display

LCD display on VLW90M; VLW60T; VLW602 (opt.)



**PTU50**

**Level transmitter**

Ultrasonic for measurement in liquids and muds  
 Range: 0,05 ÷ 1m; IP67 / IP68 proof  
 Housing in polypropylene (PP)  
 Calibration by VLW60T/ VLW602/VLW90M units or via MODBUS  
 Power supply 20÷30Vdc - Output 4÷20mA + MODBUS  
 Temperature range -20 ÷ +60°C

Version	
<b>E</b>	With SS316 male connector / IP67
<b>L</b>	With 10m integrated cable / IP68
<b>P</b>	With plastic (PA) male connector (with M accessory) / IP67
<b>Z</b>	Special
Process connection / Sensor material	
<b>0</b>	G 1" / PP + n. 1 1" BSP / PP fixing bolt
<b>1</b>	DN100 PN6 UNI 1092-1 flange / PP
<b>9</b>	Special
Accessories	
<b>A</b>	None
<b>F</b>	MODBUS PC communication S/W (010F105A)
<b>H</b>	Extension for PTU5x L=250mm in PP + DN100 flange
<b>J</b>	Junction box in PC 6 way IP65 (490B074C)
<b>L</b>	Adjustable extension for PTU5x in PP + DN100 flange (Lmin= 85mm Lmax=690mm)
<b>M</b>	IP67 female connector in plastic (PA) with 5m cable - for P version
<b>N</b>	Junction box / IP68
<b>R</b>	100mm extension
<b>T</b>	IP67 female connector in SS316 with 5m cable
<b>U</b>	IP67 female connector in SS316 with 10m cable
<b>V</b>	IP67 female connector in SS316 with 15m cable
<b>W</b>	IP67 female connector in SS316 with 20m cable
<b>Y</b>	Cable for Junction box - price per meter
<b>Z</b>	Special



## PTU51 Ultrasonic level transmitter

- Range 0.3 ÷ 6 meters
- Blind zone 30 cm
- IP67|68
- Suitable for measuring of liquids
- MODBUS RTU/BLUETOOTH comm. protocol
- Power supply 24 Vdc
- Output: 4 ÷ 20 mA analogue output
- Remote control via Smartphone

Non-intrusive level measurement systems are the preferred technology for many applications and for this reason SGM-LEKTRA developed the level/distance transmitters PTU51. These units are compact with a unique simplicity of commissioning. Calibration and transmitter configuration is possible, even remotely, thanks to a MODBUS RTU connection together with the related software for the PC, or via VLW90M / VLW60T; Bluetooth display unit. The IP67|68 transmitter protection allows installation in underground wells.

The application for configuration and programming via bluetooth, available on Google Play, is compatible with the most common devices with operating system ANDROID 4.2 and subsequent. It is possible to read the measurements detected by the transmitter and set the configuration parameters of the sensor. The smartphone terminal must be equipped with the BLUETOOTH device of class 1 and version 2.1. The maximum reception / transmission distance is 15m in open air.

### Technical Feature

#### Housing material

PP

#### Mechanical installation

1" GAS M - PP flange DN100 opt.

#### Protection degree

IP67|68

#### Electrical connection

IP67 male connector with 5/10/15/20m linking cable

#### Working temperature

-20 ÷ +60°C

#### Pressure

From 0,5 to 1,5 bar (absolute)

#### Power supply

20÷30Vdc

#### Power consumption

1.5W

#### Analog output

4÷20mA max 750ohm

#### Digital communication

MODBUS RTU

#### Range

0.3÷6m

In case of non perfectly reflecting surfaces, the maximum distance value will be reduced

#### Temperature compensation

digital in the working temperature

#### Accuracy

±0,2% (of the measured distance) not better than ±3mm

#### Resolution

1mm

#### Calibration

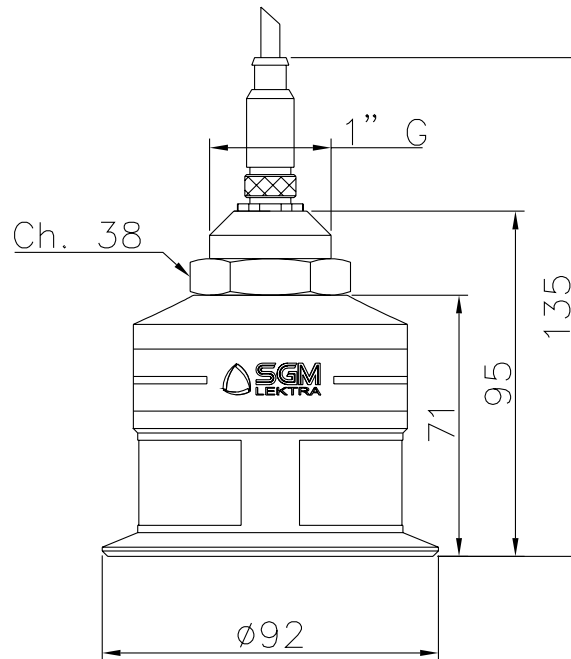
VLW90M; VLW60T; VLW602 prog. module; MODBUS; or via smartphone

#### Warm-up

30 minutes

#### Display

LCD display on VLW90M; VLW60T; VLW602; Android App (opt.)



**PTU51**

**Level transmitter**

Ultrasonic - for measurement in liquids, muds, acids and granulates.  
 Range: 0,3 ÷ 6m; IP67 / IP68 proof  
 Housing in polypropylene (PP)  
 Calibration by VLW60T/VLW602/VLW90M units, via MODBUS or via BLUETOOTH (opt.) with Android APP  
 Power supply 20÷30Vdc - Output 4÷20mA + MODBUS  
 Temperature range -20 ÷ +60°C

Version	
<b>B</b>	With SS316 male connector + BLUETOOTH / IP67
<b>E</b>	With SS316 male connector / IP67
<b>G</b>	With plastic (PA) male connector + BLUETOOTH - with M accessory / IP67
<b>L</b>	With 10m integrated cable / IP68
<b>M</b>	With 10m integrated cable + BLUETOOTH / IP68
<b>P</b>	With plastic (PA) male connector - with M accessory / IP67
<b>Z</b>	Special
Process connection / Sensor material	
<b>0</b>	G 1" / PP + n.1 1" BSP/ PP fixing bolt
<b>1</b>	DN100 PN6 UNI 1092-1 / PP flange
<b>9</b>	Special
Accessories	
<b>A</b>	None
<b>F</b>	MODBUS PC communication S/W (010F105A)
<b>H</b>	Extension L=250mm in PP + DN100 flange
<b>J</b>	Junction box in PC 6 way IP65 (490B074C)
<b>L</b>	Adjustable extension in PP + DN100 flange (Lmin= 85mm Lmax=690mm)
<b>M</b>	IP67 female connector in plastic (PA) with 5m cable - for G and P versions
<b>N</b>	Junction box / IP68
<b>T</b>	IP67 female connector in SS316 with 5m cable
<b>U</b>	IP67 female connector in SS316 with 10m cable
<b>V</b>	IP67 female connector in SS316 with 15m cable
<b>W</b>	IP67 female connector in SS316 with 20m cable
<b>Y</b>	Cable for Junction box - price per meter
<b>Z</b>	Special



## PTU56 Ultrasonic level transmitter

Range 0.5 ÷ 12 meters

Blind zone 50 cm

IP67|68

Suitable for measuring of liquids

MODBUS RTU/BLUETOOTH comm. protocol

Power supply 24 Vdc

Output: 4 ÷ 20 mA analogue output

Remote control via Smartphone

Non-intrusive level measurement systems are the preferred technology for many applications and for this reason SGM-LEKTRA developed the level/distance transmitters PTU51. These units are compact with a unique simplicity of commissioning. Calibration and transmitter configuration is possible, even remotely, thanks to a MODBUS RTU connection together with the related software for the PC, or via VLW90M / VLW60T / VLW602; Bluetooth display unit. The IP67|68 transmitter protection allows installation in underground wells.

The application for configuration and programming via bluetooth, available on Google Play, is compatible with the most common devices with operating system ANDROID 4.2 and subsequent. It is possible to read the measurements detected by the transmitter and set the configuration parameters of the sensor. The smartphone terminal must be equipped with the BLUETOOTH device of class 1 and version 2.1. The maximum reception / transmission distance is 15m in open air.

### Technical Feature

**Housing material**

PP

**Mechanical installation**

1" GAS M - PP flange DN100 opt.

**Protection degree**

IP67|68

**Electrical connection**

IP67 male connector with 5/10/15/20m linking cable

**Working temperature**

-20 ÷ +60°C

**Pressure**

From 0,5 to 1,5 bar (absolute)

**Power supply**

20÷30Vdc

**Power consumption**

1.5W

**Analog output**

4÷20mA max 750ohm

**Digital communication**

MODBUS RTU

**Range**

0.5÷12m

In case of non perfectly reflecting surfaces, the maximum distance value will be reduced

**Temperature compensation**

digital in the working temperature

**Accuracy**

±0,2% (of the measured distance) not better than ±3mm

**Resolution**

1mm

**Calibration**

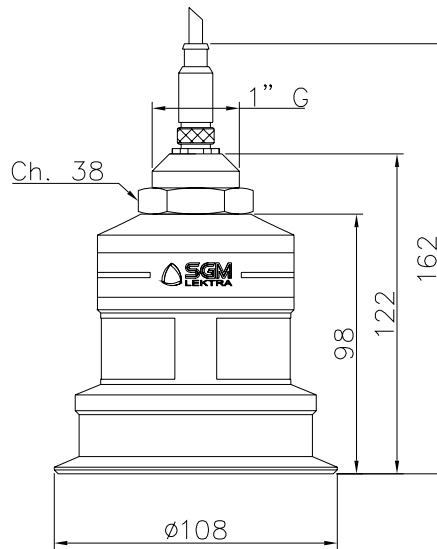
VLW90M; VLW60T; VLW602 prog. module; MODBUS; or via smartphone

**Warm-up**

30 minuts

**Display**

LCD display on VLW90M; VLW60T; VLW602; Android App (opt.)



**PTU56**

**Level transmitter**

Ultrasonic - for measurement in liquids, muds, acids and granulates.  
 Range: 0,5 ÷ 12m; IP67 / IP8 proof  
 Housing in polypropylene (PP)  
 Calibration by VLW60T/VLW602/VLW90M units, via MODBUS or via BLUETOOTH (opt.) with Android APP  
 Power supply 20÷30Vdc - Output 4÷20mA + MODBUS  
 Temperature range -20 ÷ +60°C

Version	
<b>B</b>	With SS316 male connector + BLUETOOTH / IP67
<b>E</b>	With SS316 male connector / IP67
<b>G</b>	With plastic (PA) male connector + BLUETOOTH - with M accessory / IP67
<b>L</b>	With 10m integrated cable / IP68
<b>M</b>	With 10m integrated cable + BLUETOOTH / IP68
<b>P</b>	With plastic (PA) male connector - with M accessory / IP67
<b>Z</b>	Special
Process connection / Sensor material	
<b>0</b>	G 1" / PP + n.1 1" BSP fixing bolt/ PP
<b>1</b>	DN125 PN6 UNI 1092-1 flange / PP
<b>9</b>	Special
Accessories	
<b>A</b>	None
<b>F</b>	MODBUS PC communication S/W (010F105A)
<b>H</b>	Extension for PTU5x L=250mm in PP + DN125 flange
<b>J</b>	Junction box in PC 6 way IP65 (490B074C)
<b>L</b>	Adjustable extension for PTU5x in PP + DN125 flange (Lmin= 85mm Lmax=690mm)
<b>M</b>	IP67 female connector in plastic (PA) with 5m cable - for G and P versions
<b>N</b>	Junction box / IP68
<b>T</b>	IP67 female connector in SS316 with 5m cable
<b>U</b>	IP67 female connector in SS316 with 10m cable
<b>V</b>	IP67 female connector in SS316 with 15m cable
<b>W</b>	IP67 female connector in SS316 with 20m cable
<b>Y</b>	Cable for Junction box - price per meter
<b>Z</b>	Special

# Radar

Radar level probes are instruments suited for level measurement of liquids, powders and solids inside tanks, silos and vats. These level transmitters use high-frequency radar waves to determine the distance between the probe and the surface of the material to be measured, thus enabling accurate measurements with no need for direct contact with the material.

They are particularly noted for their accuracy, even under harsh environmental conditions, such as high temperatures, pressure, powders, liquids with thick foams or corrosive chemicals. They can be used across a wide range of industries, such as the chemical, food, pharmaceutical, water treatment, agricultural and mining industries.

Radar level measurement instruments are a reliable, accurate option for monitoring levels of materials in a variety of industrial settings and their use contributes to improving operational efficiency by ensuring accurate control of production processes.



	RPL55	RPL56	RPL58	RPL59
<b>Application</b>	liquids	liquids	solids / powders	
<b>Working frequency</b>	26 GHz Band K	26 GHz Band K	26 GHz Band K	
<b>Working temperature</b>	-40 ÷ 130°C	-60 ÷ 250°C	-60 ÷ 250°C	
<b>Process pressure</b>	-1 ÷ 3 bar	-1 ÷ 40 bar	-1 ÷ 40 bar	
<b>Range of measurement</b>	10 m	30 m	70 m	15m solids, powders 30m liquids
<b>Antenna material</b>	PVDF	PTFE / AISI 316 L	PTFE / SS 316 L	
<b>Process connection</b>	G 1½"	G 1½" / flange DN 50 ÷ 100	G 1½" / flange DN 50 ÷ 250	
<b>Process connection material</b>	PVDF	AISI 316 / PP / PTFE	SS 316 / PP / PTFE	
<b>Accuracy</b>	± 5 mm	± 3 mm	± 15 mm	± 10 mm
<b>Power supply</b>	24 Vdc / 230 Vac	24 Vdc / 230 Vac	24 Vdc / 230 Vac	
<b>Protection</b>	IP67	IP67	IP67	
<b>Output signal</b>	2/4 wires 4 ÷ 20 mA Hart	2/4 wires 4 ÷ 20 mA Hart	2/4 wires 4 ÷ 20 mA Hart	
<b>Atex</b>	yes	yes	yes	



	RPL75	RPL81
<b>Application</b>	liquids	liquids
<b>Working frequency</b>	80 GHz	80 GHz
<b>Working temperature</b>	-20 ÷ +60°C	-20 ÷ +60°C
<b>Process pressure</b>	0,5 ÷ 1,5 bar	0,5 ÷ 1,5 bar
<b>Range of measurement</b>	20m	20m
<b>Antenna material</b>	PP	PP
<b>Process connection</b>	2" G; flanged	2" G
<b>Process connection material</b>	PP	PP
<b>Accuracy</b>	± 5 mm	± 5 mm
<b>Power supply</b>	20÷30Vdc   11÷14Vdc	20÷30Vdc   11÷14Vdc
<b>Protection</b>	IP67	IP67 IP68 (Sensor) - IP68 opz.
<b>Output signal</b>	2 relè; 4 ÷ 20 mA; Modbus; Bluetooth	2 relè; 4 ÷ 20 mA; Modbus; Bluetooth
<b>Atex</b>	no	no





**RPL55**  
Radar level transmitter

Continuous level measurement without contact for liquids, pastes and slurries

Range 10 m

Process pressure 3 bar

2 /4 wires technology

Pulse Radar at 26 GHz (K-band)

ATEX

RPL55 is a radar sensor for continuous measurement on liquids, even chemically aggressive, in the presence of not particularly heavy process conditions. Suitable for level measurement in tanks with 1½ “G threaded connections. The small antenna allows the installation in calm pipes or in small tanks, moreover the availability of different measures of the antenna extension allow installation in the presence of insulation or other thicknesses to overcome.

**Technical Feature**

**Frequency**

K group (26GHz)

**Housing / Antenna material**

aluminum; PVDF

**Mechanical installation**

threaded G 1½

**IP rating**

IP67/IP68 (Sensor)

**Electrical connection**

Terminals

**Working temperature**

Antenna PVDF -40 ÷ +130°C

**Pressure**

-1 ÷ 3 bar

**Power supply**

24Vdc; 230Vac

**Certification**

ATEX

**Analog output**

4÷20mA

**Digital communication**

HART / MODBUS

**Measure range**

10 mt

**Accuracy**

±10mm

**Resolution**

1mm.

**Calibraton**

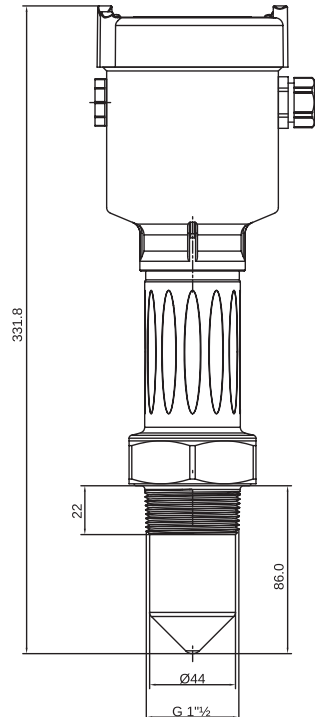
4 buttons or via HART / MODBUS

**Warm up**

5 minutes

**Display**

Plug-in display/keyboard 4 buttons matrix LCD



**RPL55**                      Radar level transmitter

Micro-waves pulse 26GHz group K  
 For liquids measurement also with strong erosive products  
 Max distance: 10m  
 Accuracy: ±5mm  
 Process pressure: -1÷3bar

Version	
<b>I</b>	ATEX II 1 G/D Ex ia IIC T6...3 Ga / Ex ia IIIC T76°C...T146°C Da - only with G housing and B electronic
<b>P</b>	Standard
Antenna shape / Material / Process temperature	
<b>B</b>	Mono-pole / PVDF / -40° ÷ +130°C
Process connection / Material	
<b>GP</b>	Thread G 1"½ / PVDF
<b>ZZ</b>	Special
Non sensitive part (for nozzle mounting)	
<b>A</b>	100 mm
<b>B</b>	200 mm
Electronic preamplifier	
<b>A</b>	None
<b>B</b>	4÷20mA HART (2-wire); 24Vdc - mandatory for ATEX version
<b>C</b>	4÷20mA HART (4-wire); 24Vdc
<b>D</b>	4÷20mA HART (4-wire); 230Vac
<b>R</b>	10÷30Vdc MODBUS RTU
Housing / Housing protection / Antenna protection	
<b>D</b>	Aluminum 2 chambers (for 4-wire versions) / IP67 / IP68
<b>G</b>	SS316L / IP67 / IP68 - mandatory for ATEX version
<b>U</b>	Aluminum with transparent cap / IP67 / IP68
<b>Z</b>	Special
Cable entry	
<b>M</b>	M20x1,5
Keyboard/display programming module VL602	
<b>A</b>	Yes
<b>X</b>	No



**RPL56**  
Radar level transmitter

Continuous level measurement without contact for solids, liquids, pastes and slurries

Range 30 m

Process pressure 40 bar

2 /4 wires technology

Pulse Radar at 26 GHz (K-band)

ATEX

RPL56 is a radar sensor for liquids continuous measurement. Suitable for application in storage and process tanks, also in hard working conditions. Suitable for level measurement in tanks with 1 1/2 "G threaded or flanged connection. The different antenna models and the wide temperature and pressure ranges make the RPL56 radar sensor the optimal solution for nearly all kind of application.

**Technical Feature**

**Frequency**

K group (26GHz)

**Housing / Antenna material**

aluminum; SS316L

**Mechanical installation**

threaded G 1 1/2; 1" 1/2 NPT

**IP rating**

IP67/IP68 (Sensor)

**Electrical connection**

Terminals

**Working temperature**

-40° ÷ +130°C / -60° ÷ +250°C / -60° ÷ +400°C +400°C

**Pressure**

-1 a 40 bar; 1 a 400 bar

**Power supply**

24Vdc; 230Vac

**Certification**

ATEX

**Analog output**

4÷20mA

**Digital communication**

HART

**Measure range**

30 mt

**Accuracy**

±3mm

**Resolution**

1mm.

**Calibraton**

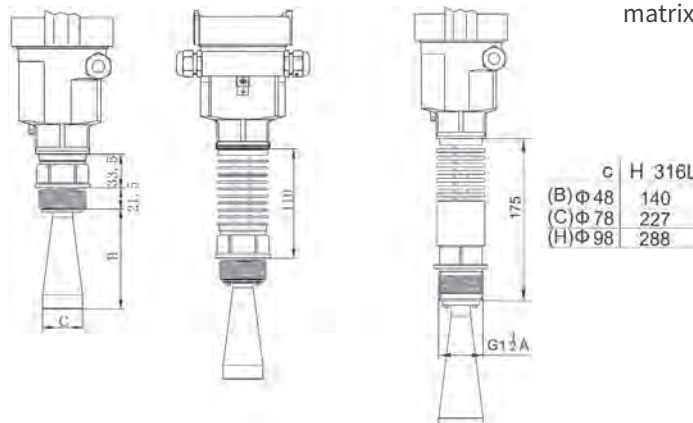
4 buttons or via HART

**Warm up**

5 minuts

**Display**

Plug-in display/keyboard 4 buttons matrix LCD





**RPL56**                      Radar level transmitter

Micro-waves pulse 26GHz group K  
 For liquid storage or process applications  
 Max distance: 30m  
 Accuracy: ±3mm  
 Process pressure: -1÷40bar

Version	
<b>I</b>	ATEX II 1 G/D Ex ia IIC T6...3 Ga / Ex ia IIIC T76°C...T146°C Da - only with G housing and B electronic
<b>P</b>	Standard
Antenna shape / Material	
<b>B</b>	Horn antenna Ø48mm / SS316L (only applicable for installation with standpipe)
<b>C</b>	Horn antenna Ø78mm / SS316L (only applicable for installation with standpipe)
<b>H</b>	Horn antenna Ø98mm / SS316L
<b>J</b>	Horn antenna Ø123mm / SS316L
<b>Z</b>	Special
Process connection / Material	
<b>GA</b>	Thread 1" ½ NPT / SS316L (-40° ÷ +130°C)
<b>GC</b>	Thread G 1" ½ with cooling fin / SS316L (-60 ÷ +250°C)
<b>GD</b>	Thread G 1" ½ with cooling fin and flange / SS316L (-60 ÷ +400°C); pressure 40MPa
<b>GE</b>	Thread G 1" ½ / SS316L with blowing in connection (-40° ÷ +130°C - inlet pressure 0÷5bar)
<b>GP</b>	Thread G 1" ½ / SS316L (-40° ÷ +130°C)
<b>ZZ</b>	Special
Additional flange (DN / Material)	
<b>FA</b>	DN50 / PP
<b>FB</b>	DN50 / PTFE
<b>FC</b>	DN50 / SS316
<b>GA</b>	DN80 / PP
<b>GB</b>	DN80 / PTFE
<b>GC</b>	DN80 / SS316
<b>HA</b>	DN100 / PP
<b>HB</b>	DN100 / PTFE
<b>HC</b>	DN100 / SS316
<b>JC</b>	DN150 / SS316
<b>KE</b>	DN200 / SS316 + aiming device
<b>OO</b>	None
<b>ZZ</b>	Special
Seal / Process temperature	
<b>2</b>	Viton / -40÷130°C
<b>3</b>	Kalrez / -60÷250°C
<b>4</b>	Graphite / -60÷400°C
Electronic preamplifier	
<b>A</b>	None
<b>B</b>	4÷20mA HART (2-wire); 24Vdc - mandatory for ATEX version
<b>C</b>	4÷20mA HART (4-wire); 24Vdc
<b>D</b>	4÷20mA HART (4-wire); 230Vac
<b>R</b>	10÷30 Vdc MODBUS RTU
Housing / Housing protection / Antenna protection	
<b>D</b>	Aluminum 2 chambers (for 4-wire versions) / IP67 / IP68
<b>G</b>	SS316L / IP67 / IP68 - mandatory for ATEX version
<b>U</b>	Aluminum with transparent cap / IP67 / IP68
<b>Z</b>	Special
Cable entry	
<b>M</b>	M20x1,5
Keyboard/display programming module VL602	
<b>A</b>	Yes
<b>X</b>	No



**RPL58**  
Radar level transmitter

Continuous non-contact level measurement for bulk solids and powders

Measurement range 70 m

Radar pulses at 26 GHz (K-band)

Visualization on the display of the level measurement and the curve of the echo signal

ATEX certification

RPL58 is a radar sensor for bulk solids continuous measurement. Suitable for application in silos and storage in large sheds, also in hard working conditions. Suitable for level measurement in tanks with 1 1/2 "G threaded or flanged connection. The different antenna models and the wide temperature and pressure range make the RPL58 radar sensor the optimal solution for nearly all kinds of application..

**Technical Feature**

**Frequency**

K group (26GHz)

**Housing / Antenna material**

aluminum / SS316L; PTFE

**Mechanical installation**

threaded G1"1/2 ; flange DN 50; 80; 100; 150; 200; 250

**IP rating**

IP67/IP68 (Sensor)

**Electrical connection**

Terminals

**Working temperature**

-40° ÷ +130°C / -60° ÷ +250°C

**Pressure**

-1 a 40 bar

**Power supply**

24Vdc; 230Vac

**Certification**

ATEX

**Analog output**

4÷20mA

**Digital communication**

HART / MODBUS

**Measure range**

70 mt

**Accuracy**

±15mm

**Resolution**

1mm.

**Calibraton**

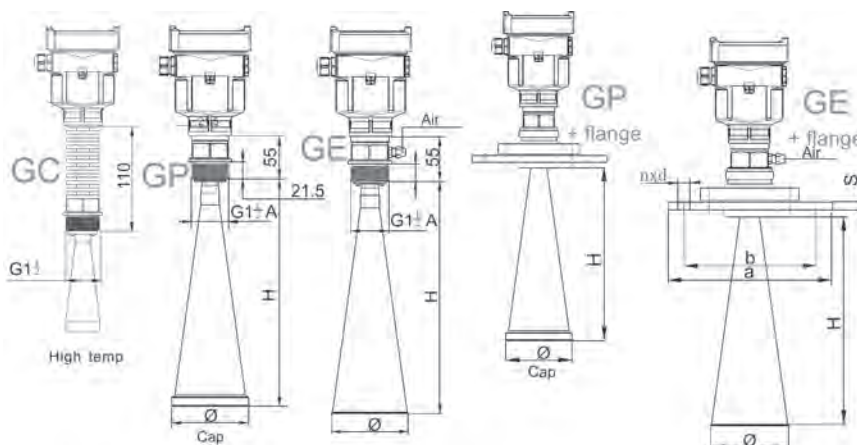
4 buttons or via HART / MODBUS

**Warm up**

5 minutes

**Display**

Plug-in display/keyboard 4 buttons matrix LCD



(Cod.)	ØAnL	H	Ant.Mat.
(B)	Ø48	140	SST316
(C)	Ø78	227	SST316
(H)	Ø98	288	SST316
(J)	Ø123	620	SST316
(M)	Ø98 + Cap	300	SST316
(P)	Ø123 + Cap	625	SST316



**RPL58** Radar level transmitter  
 Micro-waves pulse 26GHz group K  
 For bulk solids and powders storage or process applications  
 Max distance: 70m  
 Accuracy: ±15mm  
 Process pressure: -1÷40bar

Version	
<b>I</b>	ATEX II 1 G/D Ex ia IIC T6...3 Ga / Ex ia IIIC T76°C...T146°C Da - only with G housing and B electronic
<b>P</b>	Standard
Antenna shape / Material	
<b>B</b>	Horn antenna Ø48mm / SS316L
<b>C</b>	Horn antenna Ø78mm / SS316L
<b>H</b>	Horn antenna Ø98mm / SS316L
<b>J</b>	Horn antenna Ø123mm / SS316L
<b>M</b>	Horn antenna Ø98mm / SS316L with PTFE cap
<b>P</b>	Horn antenna Ø123mm / SS316L with PTFE cap
<b>Q</b>	Parabolic horn Ø198mm / SS316L
<b>R</b>	Parabolic horn Ø246mm / SS316L
Process connection / Material	
<b>GC</b>	Thread G 1" ½ with cooling fin / SS316L (-60°÷ +250°C)
<b>GE</b>	Thread G 1" ½ / SS316L with blowing in connection (-40°÷ +130°C - 0÷5bar)
<b>GP</b>	Thread G 1" ½ / SS316L (-40°÷ +130°C)
<b>ZZ</b>	Special
Additional flange (DN / Material)	
<b>FA</b>	DN50 / PP
<b>FB</b>	DN50 / PTFE
<b>FC</b>	DN50 / SS316
<b>GA</b>	DN80 / PP
<b>GB</b>	DN80 / PTFE
<b>GC</b>	DN80 / SS316
<b>HA</b>	DN100 / PP
<b>HB</b>	DN100 / PTFE
<b>HC</b>	DN100 / SS316
<b>HE</b>	DN100 / SS316 + aiming device
<b>JA</b>	DN150 / PP
<b>JB</b>	DN150 / PTFE
<b>JC</b>	DN150 / SS316
<b>JE</b>	DN150 / SS316 + aiming device
<b>KA</b>	DN200 / PP
<b>KB</b>	DN200 / PTFE
<b>KC</b>	DN200 / SS316
<b>KE</b>	DN200 / SS316 + aiming device
<b>LA</b>	DN250 / PP
<b>LB</b>	DN250 / PTFE
<b>LC</b>	DN250 / SS316
<b>LE</b>	DN250 / SS316 + aiming device
<b>OO</b>	None
<b>ZZ</b>	Special
Seal / Process temperature	
<b>2</b>	Viton / -40÷130°C
<b>3</b>	Kalrez / -60÷250°C
Electronic preamplifier	
<b>A</b>	None
<b>B</b>	4÷20mA HART (2-wire); 24Vdc - mandatory for ATEX version
<b>C</b>	4÷20mA HART (4-wire); 24Vdc
<b>D</b>	4÷20mA HART (4-wire); 230Vac
<b>R</b>	10÷30 Vdc MODBUS RTU
Housing / Housing protection / Antenna protection	
<b>D</b>	Aluminum 2 chambers (for 4-wire versions) / IP67 / IP68
<b>G</b>	SS316L / IP67 / IP68 - mandatory for ATEX version
<b>U</b>	Aluminum with transparent cap / IP67 / IP68
<b>Z</b>	Special
Cable entry	
<b>M</b>	M20x1,5
Keyboard/display programming module VL602	
<b>A</b>	Yes
<b>X</b>	No



**RPL59**  
Radar level transmitter

Continuous level measurement without contact for liquids, solids and powder  
 Range 15 m on solids; 30 m on liquids  
 Process pressure 40 bar  
 2 / 4 wires technology  
 Pulse Radar at 26 GHz (K-band)  
 ATEX

RPL59 is a radar sensor for bulk solids materials continuous measurement. Suitable for application in silos, also in hard working conditions. Suitable for level measurement in tanks with 1 1/2 "G threaded or flanged connection. The different antenna models and the wide temperature and pressure range make the RPL59 radar sensor the optimal solution for nearly all kinds of application.

**Technical Feature**

**Frequency**

K group (26GHz)

**Housing / Antenna material**

aluminum / SS316L; PTFE

**Mechanical installation**

threaded G1"1/2 ; flange DN 50; 80; 100; 150; 200; 250

**IP rating**

IP67/IP68 (Sensor)

**Electrical connection**

Terminals

**Working temperature**

-40° ÷ +130°C / -60° ÷ +250°C

**Pressure**

-1 a 40 bar

**Power supply**

24Vdc; 230Vac

**Certification**

ATEX

**Analog output**

4÷20mA

**Digital communication**

HART / MODBUS

**Measure range**

15 m on solids; 30 m on liquids

**Accuracy**

±10mm

**Resolution**

1mm.

**Calibraton**

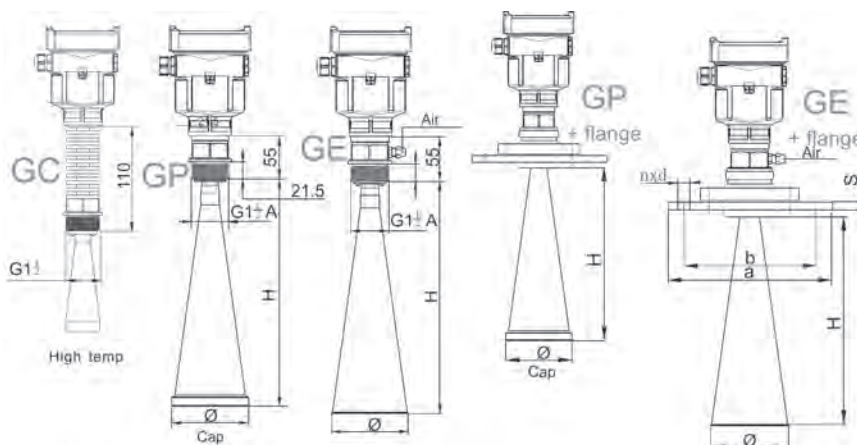
4 buttons or via HART / MODBUS

**Warm up**

5 minutes

**Display**

Plug-in display/keyboard 4 buttons matrix LCD



(Cod.)	ØAnL	H	Ant.Mat.
(B)	Ø48	140	SST316
(C)	Ø78	227	SST316
(H)	Ø98	288	SST316
(J)	Ø123	620	SST316
(M)	Ø98 + Cap	300	SST316
(P)	Ø123 + Cap	625	SST316



**RPL59** Radar level transmitter

Micro-waves pulse 26GHz group K  
 For liquids, bulk solids and powders applications  
 Max distance: 30m (liquids) 15m (solids/powders)  
 Accuracy: ±10mm  
 Process pressure: -1÷40bar

Version	
<b>I</b>	ATEX II 1 G/D Ex ia IIC T6...3 Ga / Ex ia IIIC T76°C...T146°C Da - only with G housing and B electronic
<b>P</b>	Standard
Antenna shape / Material	
<b>B</b>	Horn antenna Ø48mm / SS316L
<b>C</b>	Horn antenna Ø78mm / SS316L
<b>H</b>	Horn antenna Ø98mm / SS316L
<b>J</b>	Horn antenna Ø123mm / SS316L
<b>M</b>	Horn antenna Ø98mm / SS316L with PTFE cap
<b>P</b>	Horn antenna Ø123mm / SS316L with PTFE cap
<b>Q</b>	Parabolic horn Ø198mm / SS316L
<b>R</b>	Parabolic horn Ø246mm / SS316L
<b>Z</b>	Special
Process connection / Material	
<b>GC</b>	Thread G 1" ½ with cooling fin / SS316L (-60° ÷ +250°C)
<b>GE</b>	Thread G 1" ½ / SS316L with blowing in connection (-40° ÷ +130°C - 0÷5bar)
<b>GP</b>	Thread G 1" ½ / SS316L (-40° ÷ +130°C)
<b>ZZ</b>	Special
Additional flange (DN / Material)	
<b>FA</b>	DN50 / PP
<b>FB</b>	DN50 / PTFE
<b>FC</b>	DN50 / SS316
<b>GA</b>	DN80 / PP
<b>GB</b>	DN80 / PTFE
<b>GC</b>	DN80 / SS316
<b>HA</b>	DN100 / PP
<b>HB</b>	DN100 / PTFE
<b>HC</b>	DN100 / SS316
<b>HE</b>	DN100 / SS316 + aiming device
<b>JA</b>	DN150 / PP
<b>JB</b>	DN150 / PTFE
<b>JC</b>	DN150 / SS316
<b>JE</b>	DN150 / SS316 + aiming device
<b>KA</b>	DN200 / PP
<b>KB</b>	DN200 / PTFE
<b>KC</b>	DN200 / SS316
<b>KE</b>	DN200 / SS316 + aiming device
<b>LA</b>	DN250 / PP
<b>LB</b>	DN250 / PTFE
<b>LC</b>	DN250 / SS316
<b>LE</b>	DN250 / SS316 + aiming device
<b>OO</b>	None
<b>ZZ</b>	Special
Seal / Process temperature	
<b>2</b>	Viton / -40÷130°C
<b>3</b>	Kalrez / -60÷250°C
Electronic preamplifier	
<b>A</b>	None
<b>B</b>	4÷20mA HART (2-wire); 24Vdc - mandatory for ATEX version
<b>C</b>	4÷20mA HART (4wire); 24Vdc
<b>D</b>	4÷20mA HART (4-wire); 230Vac
<b>R</b>	10÷30 Vdc MODBUS RTU
Housing / Housing protection / Antenna protection	
<b>D</b>	Aluminum 2 chambers (for 4-wire versions) / IP67 / IP68
<b>G</b>	SS316L / IP67 / IP68 - mandatory for ATEX version
<b>U</b>	Aluminum with transparent cap / IP67 / IP68
<b>Z</b>	Special
Cable entry	
<b>M</b>	M20x1,5
Keyboard/display programming module VL602	
<b>A</b>	Yes
<b>X</b>	No





**RPL75**  
Radar level transmitter

Level measurement without contact for liquids

Range 20m

80Ghz

Visualization and configuration on a removable display module

Output 4 ÷ 20mA; 2 configurable relays

Remote control via Smartphone

Compact unit with removable programming display, a module for level measurement of liquids. Available in 4-wire version, with 2 programmable relays on different intervention thresholds and Modbus RTU serial communication. Connection to the 2 "G threaded process made of PP (moplen) for compatibility with chemically aggressive environments. The measuring range is between 0.5 and 20 meters and is guaranteed only in the case of conductive liquids. The polycarbonate housing is equipped with a transparent cover for an immediate reading of the values.

**Technical Feature**

**Frequency range**

80Ghz

**Housing / sensor material**

PC / PP

**Mechanical installation**

Threaded 2 "G; flange in PP optional

**IP rating**

IP67

**Electrical connection**

Terminals

**Working temperature**

-20° ÷ +60°C

**Process pressure**

max 3 bar

**Supply**

20÷30Vdc | 11÷14Vdc

**Consumption**

4 wires: 5 W max, 2.5 W average

2 wires: 0,6 W

**Outputs**

4 to 20mA

2 relays 3A 230Vac n.a. resistive

**Digital communication**

MODBUS RTU

**Maximum measuring range on conductives liquids**

4 wires: 20 m

2 wires: 12 m

**Blind distance**

min 0,05m (suggested 0,1m)

**Accuracy**

measurement deviation ± 5mm  
(if distance <250mm ± 10mm)

**Resolution of digital measurement**

2mm.

**Calibration**

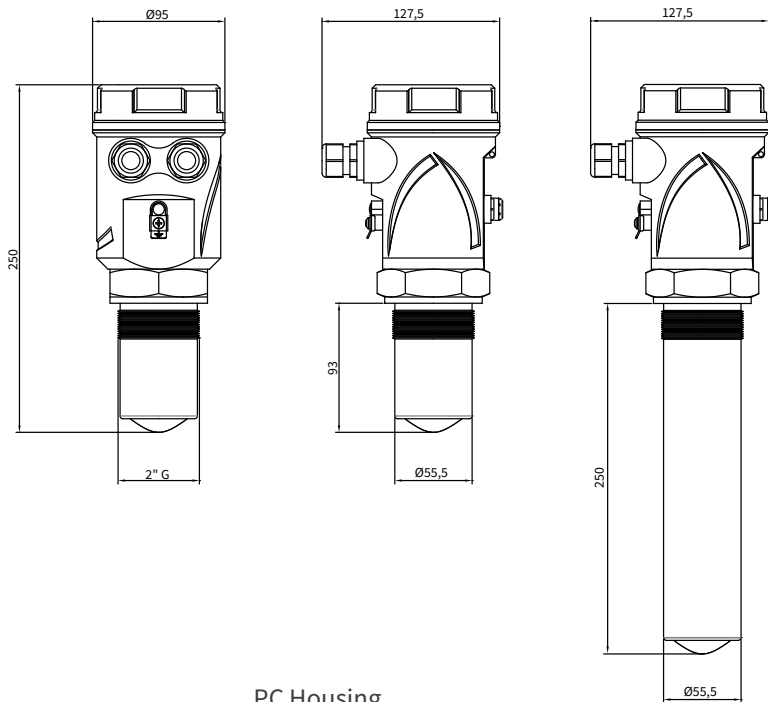
through VL601 module; Modbus

**Thermal stabilization**

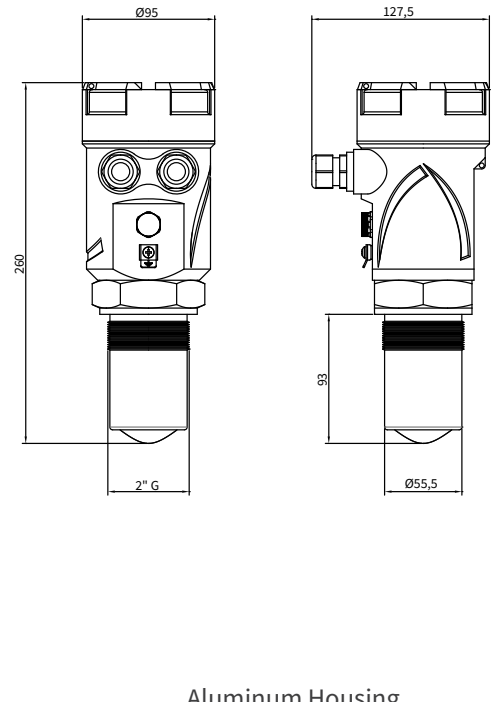
1 minute typical

**Visualization**

VL601 extractable programming module (opt.) With 4 keys and matrix LCD



PC Housing



Aluminum Housing

**RPL75**

**Radar level transmitter**

Micro-waves FMCW - For liquids  
 Max. distance 12m (2-wire version) 20m (4-wire version)  
 4÷20mA output  
 G 2" / PP threaded connection + fixing bolt  
 Setting by keyboard/display removable module (opt.)  
 via MODBUS (4-wire) or via BLUETOOTH (opt. 4-wire) with Android APP  
 IP67 housing with osmotic filter  
 Working temperature: -20° ÷ +60°C

Version	
5	2-wire, range 12m
8	4-wire, range 20m, 2 relays, MODBUS
9	Special
Housing / Sensor materials	
F	PC with transparent cap / PP
L	PC with blind cap / PP
S	Aluminum with transparent cap / PP
Z	Special
Power supply	
4	20÷30Vdc
5	11÷14Vdc (only 4-wire version)
9	Special
Accessories	
A	None
B	BLUETOOTH (only 4-wire version>)
C	DN80 PN6 UNI 1092-1/ PP flange (600J001T)
D	Display/programming module VL601 (VL601SGM)
P	PP sensor extension for a total insertion of 250 mm
S	MODBUS communication software (010F105A)
Z	Special



**RPL81**  
**Radar level transmitter**

**Level measurement without contact for liquids**

**Range 20m**

**Radar 80GHz**

**IP67/IP68 (Sensor) - IP68 opt.**

**4÷20mA output**

**2 configurable relays**

**Remote control via Smartphone**

Compact unit for level measurement of liquids and RPL81 is unaffected by temperature fluctuations, high pressure and condensation.

Thanks to his precise signal focusing it provides a reliable and accurate measurement. RPL81 can be easily configured by: on-board push buttons (IP67 version only); VL620/621, “display/programming module”; MODBUS RTU s/w; BLUETOOTH + SGM Level APP.

4-20mA and MODBUS outputs enable the continuous transmission of the measurement to analogical and digital acquisition systems. Two configurable relays can be used as local alarm threshold and pumps drive/control. One relay can be programmed as operating alarm, making RPL81 suitable for unattended applications. Constructed entirely in PP, RPL81 is particularly indicated in presence of corrosive media (acid vapors) and therefore in storage tanks. Typical applications include water lifting and treatment plants as well as sea and rivers level monitoring.

**Technical Feature**

**Housing / sensor material**

PP

**Mechanical installation**

Threaded 2 “G; flange in PP optional

**IP rating**

IP67 - IP68 opt.

**Electrical connection**

Terminal blocks or waterproof connector IP68 (opt.)

**Working temperature**

-20° ÷ +60°C

**Pressure**

max 3bar

**Power supply**

20÷30Vdc | 11÷14Vdc

**Power consumption**

5W max; 2,5W average

**Analog output**

4...20mA, max 750ohm

**Relays output**

n°2 3A 230Vac (n.a.) resistive

**Digital communication**

MODBUS RTU

**Max measure range**

0.05 ÷ 20mt

In case of non perfectly reflecting surfaces, the maximum distance value will be reduced

**Blind distance**

min 0,05m (suggested 0,1m)

**Accuracy**

measurement deviation ± 5mm (if distance <250mm ± 10mm)

**Resolution of digital measurement**

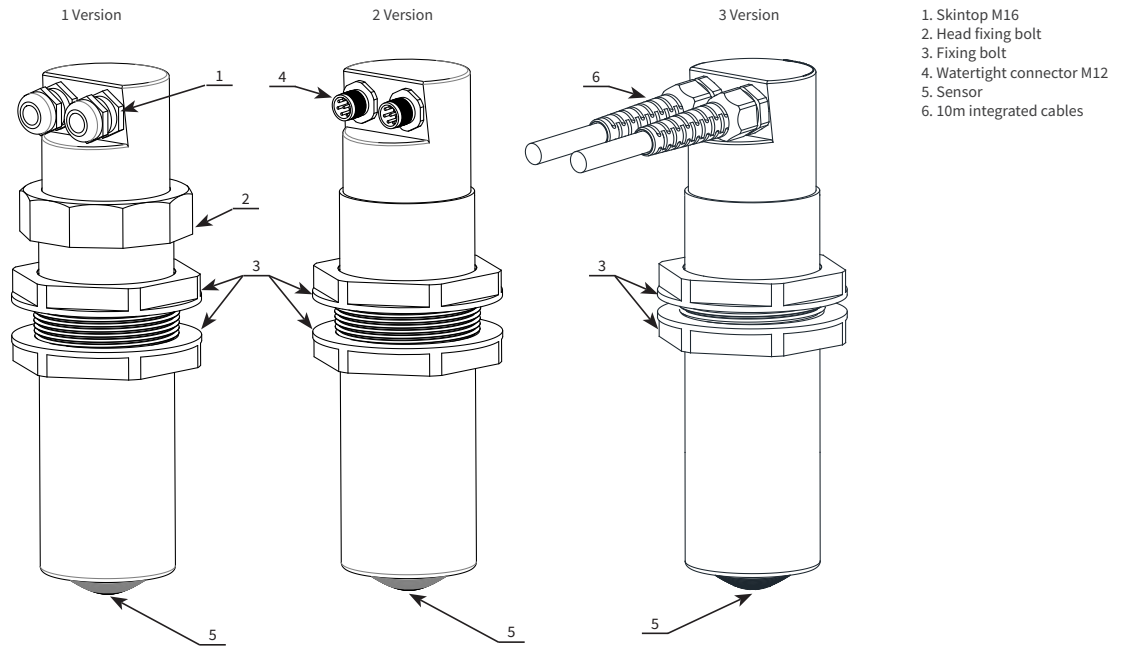
2mm.

**Calibration**

vers. IP67 display opt. - 2 buttons - modbus/bluetooth  
vers. IP68 modbus/bluetooth

**Display**

VL620/1 module (opt.) with 4 keys and LCD



- 1. Skintop M16
- 2. Head fixing bolt
- 3. Fixing bolt
- 4. Watertight connector M12
- 5. Sensor
- 6. 10m integrated cables

**RPL81**                      Radar level transmitter

Micro-waves FMCW  
 For liquids max 20m  
 Output: 4÷20mA + RS485 MODBUS  
 2 relays for alarms or pump control  
 G 2"/PP threaded connection + nr 2 2" BSP/PP fixing bolts  
 Working temperature: -20° ÷ +60°C

Version	
1	IP67 - calibration by 2 push-buttons, via MODBUS RTU, by VL620 (opt.), or via BLUETOOTH (opt.)
2	IP67 with male connectors - calibration via MODBUS RTU, by VL621 (opt.), or via BLUETOOTH (opt.)
3	IP68 with 10m integrated cables - calibration ONLY via MODBUS RTU or BLUETOOTH (opt.)
9	Special
Housing material	
B	Polypropylene (PP)
Z	Special
Power supply	
4	20÷30Vdc
5	11÷14Vdc
Accessories	
A	None
B	BLUETOOTH
C	DN80 PN6 UNI 1092-1 flange in PP (600J001T)
D	VL620 keyboard/display programming module with 1 m cable - for version 1
E	Mounting bracket in PP (835B026Z)
F	VL621 keyboard/display programming module with 1 m cable - for versions 2
J	Nr. 2 Junction box in PC 6 way IP65 (490B074C) - for version 3
S	S/W for MODBUS communication (010F105A)
T	Couple of 5m cables with IP67 female connector (for versions 2)
U	Couple of 10m cables with IP67 female connector (for versions 2)
V	Couple of 15m cables with IP67 female connector (for versions 2)
W	Couple of 20m cables with IP67 female connector (for versions 2)
Z	Special

# Guided Wave Radar

A short electromagnetic pulse is sent along a rope and is reflected back once it reaches its end. If the rope is immersed into the product to be measured, in the point of contact air/product an echo is generated by this discontinuity.

The echo comes back to the same rope and is detected as a surface of the product. A method of time elongation, allows the assessment of the time of flight which, by its nature, is particularly short, to be able to calculate with accuracy the distance and hence the level of the product to be measured. These are particularly suitable for use with powders, granules, bulk solids such as plastic chips in high and narrow silos, as well as in the food industry because these instruments do not require new calibrations when changing the type of product.

They are also suitable for materials for construction, sand, gravel, etc... The calibrations are possible even in the absence of product. The instrument generates the high frequency pulses through a probe. The pulses are reflected by the product surface, detected by the internal receiver and converted by microprocessor into level data. The measurement technique, coupled with the EchoDiscovery management system, and the versatility of the RWL series allows the units to be used in severe process conditions with a variety high temperature, high pressure and low dielectric constant. They can be used with materials such as cement, sands and similar products.



<b>RWL51</b>	
<b>Application</b>	liquids / solids
<b>Type of probe</b>	rope / rod / semi-flexible rope
<b>Process temperature</b>	-40 ÷ 150°C
<b>Process pressure</b>	-1 ÷ 40 bar
<b>Probe length</b>	3 m (rod) / 30 m (rope / semi-flexible rope)
<b>Probe material</b>	SS 316 L / AISI 304
<b>Process connection</b>	G 1½" / G 2"
<b>Connection material</b>	SS 316 L
<b>Accuracy</b>	± 10 mm
<b>Power supply</b>	24 Vdc / 230 Vac
<b>Protection</b>	IP67
<b>Output signal</b>	2/4 fili 4 ÷ 20 mA Hart; MODBUS



## RWL51 Radar level transmitter

Contact level measurements for liquids and solids  
 Max rod length 3 m  
 rope / semi-flexible pipe 30 m  
 Process pressure 40 bar  
 2/4 wires technology  
 Pulse microwave TDR  
 Display of alphanumeric level measurement and of the echo signal curve

RWL51 is a guided micro-wave sensor for liquids and bulk solids materials continuous measurement. Insensitive to environmental influences like dust and steam, RWL51 provides accurate and repetitive measurement values. RWL51 constitutes the solution for multiple level measurements. Suitable for application in silos or tanks, also in hard working conditions. Suitable for level measurement in tanks with 1 ½ “G or 2”g threaded. RWL51 is available with rope or rigid rod antenna..

### Technical Feature

**Housing / Antenna material**

aluminum / SS316L / SS304

**Mechanical installation**

threaded G 1½”; G 2”

**IP rating**

IP67

**Electrical connection**

Terminals

**Working temperature**

-30° ÷ +130°C / -40° ÷ +150°C

**Pressure**

-1÷40 bar

**Power supply**

24Vdc; 230Vac

**Analog output**

4÷20mA

**Digital communication**

HART; MODBUS

**Measure range**

rod 3 m; rope 30 m; semi-flexible pipe 30 m

**Accuracy**

±10mm

**Resolution**

1mm.

**Calibraton**

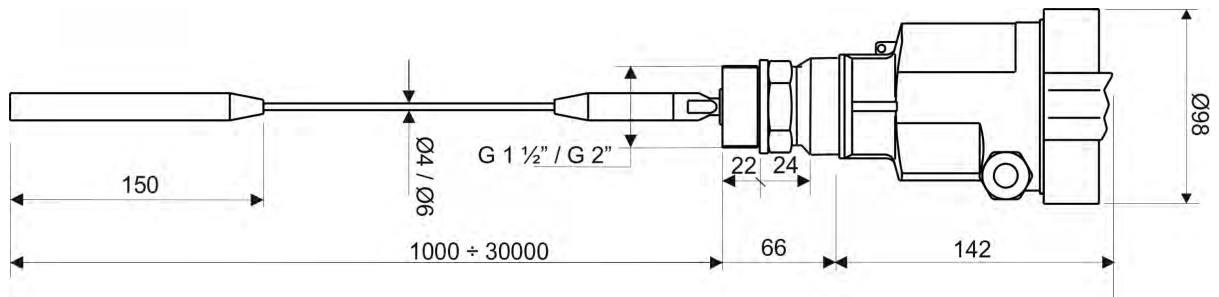
4 buttons or via HART

**Warm up**

5 minutes

**Display**

Plug-in display/keyboard 4 buttons matrix LCD



**RWL51** Guided microwave radar level transmitter  
 Microwaves pulse TDR  
 For liquids and bulk solids measurement  
 Max. length: rod 3m, rope and semi-flexible pipe 30m  
 Accuracy: ±10mm  
 Process pressure: -1÷40 bar

Version	
<b>P</b>	Standard
Antenna shape / Material / Sealing	
<b>A</b>	Rope Ø 6mm / SS316L / PTFE
<b>B</b>	Rod Ø10mm / SS316L / PTFE
<b>C</b>	Semi-flexible pipe Ø8mm / SS304 / PTFE
Process connection / Material	
<b>GP</b>	Thread G1 1/2" / SS316L
<b>KP</b>	Thread G2" A / SS316L
<b>NP</b>	Thread 1 1/2" NPT / SS316L
<b>ZZ</b>	Special
Seal / Process temperature	
<b>A</b>	Viton / -30÷130°C
<b>B</b>	Kalrez / -40÷150°C
Electronic preamplifier	
<b>B</b>	4÷20mA HART (2-wire); 24Vdc
<b>C</b>	4÷20mA HART (4wire); 24Vdc
<b>D</b>	4÷20mA HART (4wire); 230Vac
<b>R</b>	10÷30 Vdc MODBUS RTU
Housing / Protection	
<b>D</b>	Aluminum 2 chambers (for 4-wire versions) / IP67
<b>G</b>	SS316L / IP67
<b>U</b>	Aluminum with transparent cap / IP67
<b>Z</b>	Special
Cable entry	
<b>M</b>	M20x1,5
Keyboard/display programming module VL602	
<b>A</b>	Yes
<b>X</b>	No
L= length, price each 100mm	
<b>A</b>	Rope Ø6mm / SS316L (max 30m)
<b>B</b>	Rod Ø10mm / SS316L (max 3m)
<b>C</b>	Semi-flexible pipe Ø8mm / SS304 (max 30m)



# Capacitive | Measure

Capacitive probes work by measuring the change in electrical capacitance between two electrodes submerged in a liquid or solid product. The level of the product alters the capacitance between the two electrodes. This technique is particularly suited to conductive liquids such as water and salt solutions. This is a reliable and accurate measurement method for a variety of applications provided that proper calibration and configuration is carried out.

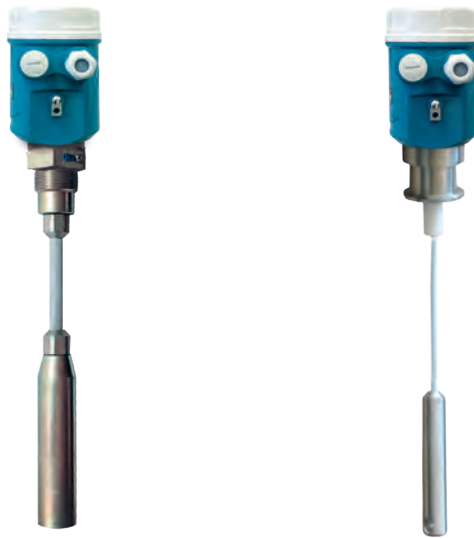


CLT4	
<b>Applications</b>	liquids / solids
<b>Material in contact</b>	SS 316 / PVC / PTFE
<b>Product max temperature</b>	150°C
<b>Max pressure</b>	25 bar
<b>Max probe length</b>	3 m   2m PTFE 8/12 insulated
<b>Process connection</b>	G ½" ÷ G 1½" / 1" NPT DIN DN 25 ÷ 50 / clamp 1" ÷ 2" flange DN 40 ÷ 100 flange ANSI 2" ÷ 4"
<b>Connection material</b>	carbon steel / SS 316 / SS304L / PVC / PTFE
<b>Power supply</b>	24 Vdc / ac 115 Vac / 230 Vac
<b>Protection</b>	IP66 ÷ 67

An electronic capacitive insert mounted into a protective housing defines the type of operation of the unit and that is:

- Level Transmitter, 4 ÷ 20 mA (TC22 ÷ 25)
- Level Transmitter, 4 ÷ 20 mA + threshold relay (TC26 ÷ 29)
- Level Transmitter, 4 ÷ 20 mA 2 wires (TC30)

The operation, fully digital, allows the calibration via two buttons or s/w installed on a PC



	CLT7	CLT8
<b>Applications</b>	solids / granules	liquids
<b>Material in contact</b>	carbon steel / SS 316 / PE	SS 316 / PVC / PTFE
<b>Product max temperature</b>	85°C	150°C
<b>Max pressure</b>	6 bar	25 bar
<b>Max probe length</b>	30 m	30 m
<b>Process connection</b>	G 1½" flange DN 40 ÷ 100 flange ANSI 2" ÷ 4"	G 1" / G 1½" / 1" NPT DIN DN 25 ÷ 50 / clamp 1" ÷ 2" flange DN 40 ÷ 100 flange ANSI 2" ÷ 4"
<b>Connection material</b>	carbon steel / SS 304 SS 316	carbon steel / SS 316 PVC / PTFE / SS 304 L
<b>Power supply</b>	24 Vdc / ac 115 Vac / 230 Vac	24 Vdc / ac 115 Vac / 230 Vac
<b>Protection</b>	IP66 ÷ 67	IP66 ÷ 67



## CLT4 Capacitive level transmitter

Contact level measurement  
Threaded, flanged and sanitary connections  
Suitable for measuring of liquids and powders  
IP66 ÷ 67 protection  
PTFE or PVC insulation

Capacitive instrument, rod probe suitable for general or chemical-pharmaceutical applications for level measurement of conductive, non-conductive liquids or granules. Installation on the top of metal tanks..

### Technical Feature

**Housing material**

aluminum / polycarbonate

**Versions**

compact; remote; high temperature

**IP rating**

IP67

**Electrical connection**

terminals

**Working temperature**

-30° ÷ +150°C PTFE ; -20° ÷ +70°C PVC

**Electrodes**

rigid insulated PTFE rod; rigid PVC insulated rod

**Power supply**

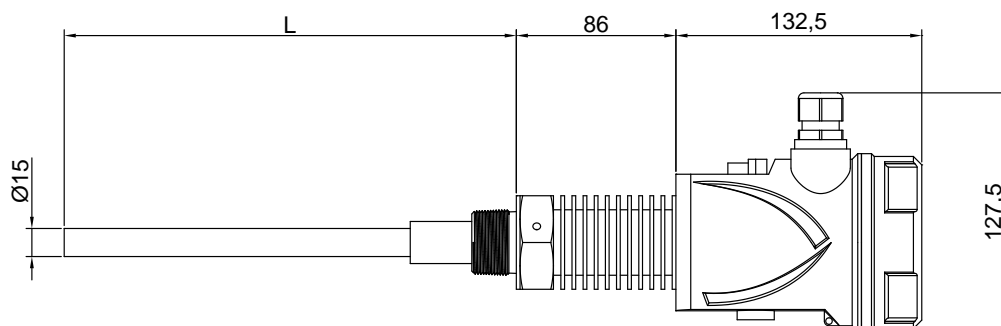
24Vdc; 24/115/230Vac

**Analog output**

4÷20mA

**Measure range**

max 3 mt rod





**CLT4** Capacitive rod probe for liquids and dust  
 Suitable for level measurement  
 Installation in the top of metallic tanks; 3m max.

Version	
<b>A</b>	Without insert-preamplifier
<b>B</b>	Compact
<b>D</b>	Spacer-cooling-fins compact in carbon-steel
<b>F</b>	Spacer-cooling-fins compact in stainless-steel
<b>H</b>	Separate with M8 female connection, 2m coax cable with double shielding max. 120°C (cod 525A003E). Electrode with DIN B aluminum housing - IP66 (only with ½" connection)
<b>L</b>	Separate with M8 female connection, 2m coax cable with double shielding max. 120°C (cod 525A003E). Electrode with DIN A aluminum housing - IP66
<b>R</b>	Separate with AI fixing base +2m coax cable with double shielding max. 120°C (cod 525A003E). Electrode with DIN B aluminum housing - IP66 (only with ½" connection)
<b>S</b>	Separate with AI fixing base + 2m coax cable with double shielding max. 120°C (cod 525A003E). Electrode with DIN A aluminum housing - IP66
<b>Z</b>	Special
Electronic preamplifier	
<b>00</b>	None
<b>22</b>	TC22, 4÷20mA, calibration by 2 push-buttons or via RS485, 24Vdc
<b>23</b>	TC23, 4÷20mA, calibration by 2 push-buttons or via RS485, 24Vac
<b>24</b>	TC24, 4÷20mA, calibration by 2 push-buttons or via RS485, 115Vac
<b>25</b>	TC25, 4÷20mA, calibration by 2 push-buttons or via RS485, 230Vac
<b>26</b>	TC26, 4÷20mA, calibration by 2 push-buttons or via RS485,1 relay, 24Vdc
<b>27</b>	TC27, 4÷20mA, calibration by 2 push-buttons or via RS485,1 relay, 24Vac
<b>28</b>	TC28, 4÷20mA, calibration by 2 push-buttons or via RS485,1 relay, 115Vac
<b>29</b>	TC29, 4÷20mA, calibration by 2 push-buttons or via RS485,1 relay, 230Vac
<b>30</b>	TC30, 4÷20mA 2-wire, 2 push-buttons calibration, 10÷30Vdc
<b>99</b>	Special
Housing for electronic preamplifier	
<b>E</b>	IP 66 DIN B aluminum housing (for electrode only)
<b>F</b>	PC with transparent cap and osmotic filter - IP67
<b>G</b>	IP67 aluminum varnished with osmotic filter
<b>L</b>	PC with blind cap and osmotic filter - IP67
<b>Z</b>	Special
Process connection	
<b>01</b>	G1" / Carbon-steel - not for DIN B housing
<b>02</b>	G1" / Stainless-steel SS316 - not for DIN B housing
<b>03</b>	1" NPT / Carbon-steel - not for DIN B housing
<b>04</b>	1" NPT / SS316 - not for DIN B housing
<b>11</b>	G1½" / Carbon-steel - not for DIN B housing
<b>12</b>	G1½" / SS316 - not for DIN B housing
<b>19</b>	G1½" / PTFE - not for DIN B housing
<b>20</b>	Sanitary DN25 DIN 11851 / SS304L - not for DIN B housing
<b>21</b>	Sanitary DN40 DIN 11851 / SS304L - not for DIN B housing
<b>22</b>	Sanitary DN50 DIN 11851 / SS304L - not for DIN B housing
<b>40</b>	Threaded flange DN40 PN 6 UNI 1092-1 / PVC
<b>41</b>	Threaded flange DN40 PN 6 UNI 1092-1 / PTFE
<b>42</b>	Threaded flange DN40 PN16 / carbon steel
<b>45</b>	Threaded flange DN50 PN6 UNI 1092-1 / PVC
<b>46</b>	Threaded flange DN80 PN6 UNI 1092-1 / PVC
<b>47</b>	Threaded flange DN100 PN6 UNI 1092-1 / PVC
<b>50</b>	Threaded flange DN40 PN16 / SS304
<b>51</b>	Threaded flange DN40 PN16 / SS316
<b>52</b>	Threaded flange DN50 PN16 DIN 2527 form B (without gasket) / SS316
<b>53</b>	Threaded flange DN80 PN16 DIN 2527 form B (without gasket) / SS316
<b>54</b>	Threaded flange DN100 PN16 DIN 2527 form B (without gasket) / SS316
<b>60</b>	Threaded flange 2" ANSI RF # 150 / SS316
<b>61</b>	Threaded flange 3" ANSI RF # 150 / SS316
<b>62</b>	Threaded flange 4" ANSI RF # 150 / SS316
<b>71</b>	CLAMP 1" / SS316 - not for DIN B housing
<b>73</b>	CLAMP 1½" / SS316 - not for DIN B housing
<b>75</b>	CLAMP 2" / SS316 - not for DIN B housing
<b>83</b>	G½" / Carbon-steel - not for electrodes type Q/R/S
<b>84</b>	G½" / SS316 - not for electrodes type Q/R/S
<b>99</b>	Special
Electrode type and insulation	
<b>B</b>	PTFE partially insulated SS316 rod
<b>D</b>	PVC totally insulated SS316 rod
<b>H</b>	PTFE totally insulated SS316 rod (only for dust/granules)
<b>L</b>	PTFE 8/12 totally insulated SS316 rod (for liquids - max length 2000mm)
<b>Q</b>	PTFE partially insulated SS316 rod + SS316 grounding reference (for liquids)
<b>R</b>	PVC insulated rod + SS316 grounding reference (for liquids) just with non sensitive part cod A
<b>S</b>	PTFE 8/12 insulated rod + SS316 grounding reference (for liquids - max length 2000mm) just with non sensitive part cod A
<b>Z</b>	Special
L= Electrode length, price each 100mm	
<b>40</b>	PTFE partially insulated SS316 rod
<b>42</b>	PVC totally insulated SS316 rod
<b>46</b>	PTFE totally insulated SS316 rod (only for dust/granules)
<b>48</b>	PTFE 8/12 totally insulated SS316 rod (for liquids - max length 2000mm)
<b>53</b>	PTFE partially insulated SS316 rod + SS316 grounding reference (for liquids)
<b>54</b>	PVC insulated rod + SS316 grounding reference (for liquids)
<b>55</b>	PTFE 8/12 insulated rod + SS316 grounding reference (for liquids - max length 2000mm)
<b>99</b>	Special
L1 = non sensitive part (rod), material and price each 10cm	
<b>A</b>	None
<b>C</b>	SS316 - max 100mm
<b>Z</b>	Special



## CLT7 Capacitive level transmitter

PE coated rope  
For measurements of powders and granules  
IP67 protection  
Maximum probe length 30m

Capacitive instrument, rope probe for continuous level measuring. Suitable for general use or level measurement of granules and powders. Installation on the top of silos.

### Technical Feature

**Housing material**

polycarbonate

**Versions**

compact; remote

**IP rating**

IP67

**Electrical connection**

terminals

**Electrodes**

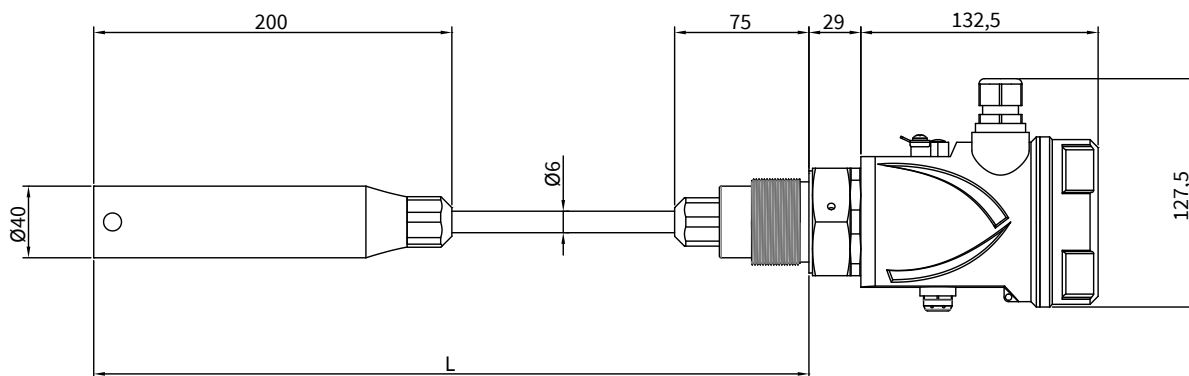
insulated PE rope

**Power supply**

24Vdc; 24/115/230Vac

**Analog output**

4÷20mA





**CLT7** Capacitive rope probe for granulates and powders  
 Continuous capacitive level measurement  
 Installation on the top of metallic tanks

Version	
<b>A</b>	Without insert-preamplifier
<b>B</b>	Compact version
<b>Z</b>	Special
Electronic preamplifier	
<b>00</b>	None
<b>22</b>	TC22, 4÷20mA, calibration by 2 push-buttons or via RS485, 24Vdc
<b>23</b>	TC23, 4÷20mA, calibration by 2 push-buttons or via RS485, 24Vac
<b>24</b>	TC24, 4÷20mA, calibration by 2 push-buttons or via RS485, 115Vac
<b>25</b>	TC25, 4÷20mA, calibration by 2 push-buttons or via RS485, 230Vac
<b>26</b>	TC26, 4÷20mA, calibration by 2 push-buttons or via RS485, 1relay, 24Vdc
<b>27</b>	TC27, 4÷20mA, calibration by 2 push-buttons or via RS485, 1relay, 24Vac
<b>28</b>	TC28, 4÷20mA, calibration by 2 push-buttons or via RS485, 1relay, 115Vac
<b>29</b>	TC29, 4÷20mA, calibration by 2 push-buttons or via RS485, 1relay, 230Vac
<b>30</b>	TC30, 4÷20mA, 2wires, 2 push buttons for calibration, 10÷30Vdc
<b>99</b>	Special
Housing for electronic preamplifier	
<b>F</b>	PC with transparent cap and osmotic filter, IP67
<b>G</b>	IP67 aluminum varnished with osmotic filter
<b>L</b>	PC with blind cap and osmotic filter, IP67
<b>Z</b>	Special
Process connection	
<b>11</b>	G1"½ / Carbon-steel
<b>12</b>	G1"½ / SS316
<b>42</b>	Threaded flange DN40 PN16 / Carbon-steel
<b>50</b>	Threaded flange DN40 PN16 / SS304
<b>51</b>	Threaded flange DN40 PN16 / SS316
<b>52</b>	Threaded flange DN50 PN16 DIN 2527 form B (without gasket) / SS316
<b>53</b>	Threaded flange DN80 PN16 DIN 2527 form B (without gasket) / SS316
<b>54</b>	Threaded flange DN100 PN16 DIN 2527 form B (without gasket) / SS316
<b>60</b>	Threaded flange 2" ANSI RF # 150 / SS316
<b>61</b>	Threaded flange 3" ANSI RF # 150 / SS316
<b>62</b>	Threaded flange 4" ANSI RF # 150 / SS316
<b>99</b>	Special
Electrode type and insulation	
<b>L</b>	Ø8mm carbon steel, counterweight in carbon steel
<b>M</b>	Ø8mm carbon steel, counterweight in SS316
<b>N</b>	Ø8mm carbon steel PE coated, counterweight in carbon steel
<b>P</b>	Ø8mm carbon steel PE coated, counterweight in SS316
<b>Z</b>	Special
L= Electrode length, price each meter	
<b>73</b>	Ø8mm carbon steel
<b>74</b>	Ø8mm carbon steel PE coated
<b>99</b>	Special
L1 = non sensitive part (rod), material and price each 10cm	
<b>A</b>	Standard (75mm)
<b>B</b>	Carbon-steel
<b>Z</b>	Special



## CLT8 Capacitive level transmitter

Threaded, flanged and sanitary connections  
Suitable for liquid level measurement  
IP66 ÷ 67 protection  
PTFE or PVC insulation

Capacitive instruments, rope probe for measuring of liquid levels, installation on top of metal tanks.

### Technical Feature

**Housing material**

polycarbonate

**Versions**

compact; remote

**IP rating**

IP66;67

**Electrical connection**

terminals

**Electrodes**

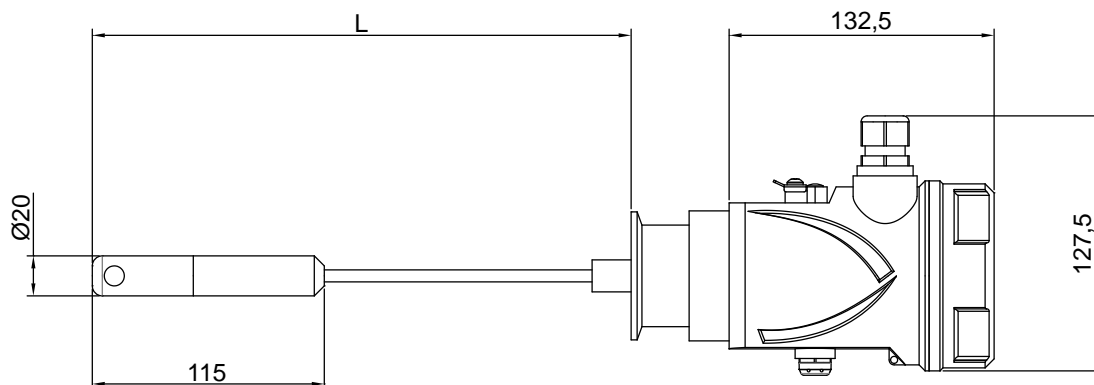
insulated PTFE rope

**Power supply**

24Vdc; 24/115/230Vac

**Analog output**

4÷20mA





**CLT8** Capacitive rope probe for liquids  
 Continuous capacitive level measurement  
 Suitable for conductive and not conductive liquids, paste  
 Installation on the top of metallic tanks

Version	
<b>A</b>	Without insert-preamplifier
<b>B</b>	Compact
<b>D</b>	Spacer-cooling-fins compact in carbon-steel
<b>F</b>	Spacer-cooling-fins compact in stainless-steel
<b>L</b>	Separate with M8 female connection + 2m coax cable with double shielding max. 120°C (cod 525A003E). Electrode with DIN A aluminum housing - IP66
<b>P</b>	Separate with Al fixing base + 2m coax cable with double shielding max. 120°C (cod 525A003E). Electrode with DIN A aluminum housing - IP66
<b>Z</b>	Special
Electronic preamplifier	
<b>00</b>	None
<b>22</b>	TC22, 4÷20mA, calibration by 2 push-buttons or via RS485, 24Vdc
<b>23</b>	TC23, 4÷20mA, calibration by 2 push-buttons or via RS485, 24Vac.
<b>24</b>	TC24, 4÷20mA, calibration by 2 push-buttons or via RS485, 115Vac.
<b>25</b>	TC25, 4÷20mA, calibration by 2 push-buttons or via RS485, 230Vac.
<b>26</b>	TC26, 4÷20mA, calibration by 2 push-buttons or via RS485, 1 relay, 24Vdc
<b>27</b>	TC27, 4÷20mA, calibration by 2 push-buttons or via RS485, 1 relay, 24Vac
<b>28</b>	TC28, 4÷20mA, calibration by 2 push-buttons or via RS485, 1 relay, 115Vac
<b>29</b>	TC29, 4÷20mA, calibration by 2 push-buttons or via RS485, 1 relay, 230Vac
<b>30</b>	TC30, 4÷20mA, 2wires, 2 push buttons for calibration, 10÷30Vdc
<b>99</b>	Special
Housing for electronic preamplifier	
<b>F</b>	PC with transparent cap and osmotic filter, IP67
<b>G</b>	IP67 aluminum varnished with osmotic filter
<b>L</b>	PC with blind cap and osmotic filter, IP67
<b>Z</b>	Special
Process connection	
<b>01</b>	G1" / Carbon steel
<b>02</b>	G1" / SS316
<b>04</b>	1" NPT / SS316
<b>11</b>	G1½" / Carbon-steel
<b>12</b>	G1½" / SS316
<b>19</b>	G1½" / PTFE
<b>20</b>	Sanitary DN25 DIN 11851 / SS304L
<b>21</b>	Sanitary DN40 DIN 11851 / SS304L
<b>22</b>	Sanitary DN50 DIN 11851 / SS304L
<b>71</b>	CLAMP 1" / SS316
<b>73</b>	CLAMP 1" ½ / SS316
<b>75</b>	CLAMP 2" / SS316
<b>99</b>	Special
Electrode type and insulation	
<b>B</b>	Ø2,5mm PVC insulated, counterweight in SS316
<b>C</b>	Ø2,5mm PTFE insulated, counterweight in SS316
<b>L</b>	Ø2,5mm PVC insulated, counterweight in PVC
<b>M</b>	Ø2,5mm PTFE insulated, counterweight in PTFE (only with connections code 11/12/19/22/75)
<b>Z</b>	Special
L= Electrode length, price each meter	
<b>81</b>	Ø2,5mm PVC insulated
<b>82</b>	Ø2,5mm PTFE insulated
<b>99</b>	Special
L1 = non sensitive part (rod), material and price each 10cm	
<b>A</b>	None
<b>C</b>	SS316
<b>Z</b>	Special



# Hydrostatic Head

Hydrostatic head level measurement is based on the fluid pressure at the base of a tank. The pressure exerted by the fluid increases as the level increases. The pressure is then converted into a measurement of liquid height. This technique is commonly employed in tanks or wells where the pressure is directly proportional to the level of the fluid. This is a relatively simple, robust technology, suited for non-aggressive, non-viscous liquids.

This system is used in applications in the measurement of the level of:

- cisterns
- tanks and wells
- wells for water lifting
- level measurement in ground water

The installation is always from above. The suspension of the sensor, depending on the model, can be with a tube (rigid extension) or rope (flexible extension).



	KPLC	KPLD
<b>Application</b>	liquids	liquids
<b>Contact material</b>	PU / SS 316 L	PU / SS 316 L
<b>Operating temp.</b>	-20 ÷ 70°C	-20 ÷ 70°C
<b>Output</b>	4 ÷ 20 mA	4 ÷ 20 mA
<b>Construction</b>	rope PU	rope PU
<b>Measuring range</b>	1 ÷ 200 m H <sub>2</sub> O	1 ÷ 200 m H <sub>2</sub> O
<b>Process connect.</b>	G 1"; G1"1/2	suspension
<b>Connection material</b>	SS 304	-
<b>Box protection</b>	IP66	-
<b>Probe protection</b>	IP68	IP68
<b>Power supply</b>	10 ÷ 36 Vdc	10 ÷ 36 Vdc



	KWLA	KWLC
<b>Application</b>	specific for waste water	specific for waste water
<b>Contact material</b>	PVC / CERAMIC	PVC / CERAMIC
<b>Operating temp.</b>	-10 ÷ 50°C	-10 ÷ 50°C
<b>Output</b>	4 ÷ 20 mA	4 ÷ 20 mA
<b>Construction</b>	rope PU	rope PU
<b>Measuring range</b>	1 ÷ 200 m H <sub>2</sub> O	1 ÷ 200 m H <sub>2</sub> O
<b>Process connect.</b>	suspension	G2"
<b>Connection material</b>	-	PP
<b>Box protection</b>	-	IP66
<b>Probe protection</b>	IP68	IP68
<b>Power supply</b>	12 ÷ 30 Vdc	12 ÷ 30 Vdc



## **KPL** Hydrostatic head level transmitter

Suitable for use in clear water  
 Accuracy  $\pm 0.5\%$   
 Range 1 ÷ 200 m H<sub>2</sub>O  
 IP rating (wetted part): IP68  
 Power supply 12 ÷ 30Vdc (2-wires)  
 Optional IP67 aluminum housing

Suitable for continuous liquids level measurement. Typical application are waste water and deep wells. The KPL level transmitter configuration options make it suitable for most industrial sectors (oil, chemical, power, metallurgy, pharmaceutical and food) and in different operating conditions. These characteristics make it the ideal instrument in process automation for the hydrostatic head levels measurement.

### **Technical Feature**

**Power supply**

10 ÷ 36Vdc (2-wire)

**Measurement range**

from 0 ÷ 1mH<sub>2</sub>O to 0 ÷ 200mH<sub>2</sub>O

**Immersed probe material**

SS304

**Shielded cable material**

PU Ø7.5mm

**Housing material (opt)**

aluminum

**Process connection**

G 1"; G1 1/2; suspension cable; self-supporting fastening hook (opt.)

**Analog output**

4 ÷ 20mA

**Stability**

$\pm 0.1\%$  fs /12 months

**Accuracy**

$\pm 0.5\%$

**Working temperature**

-20° ÷ +70°C

**Storage temperature**

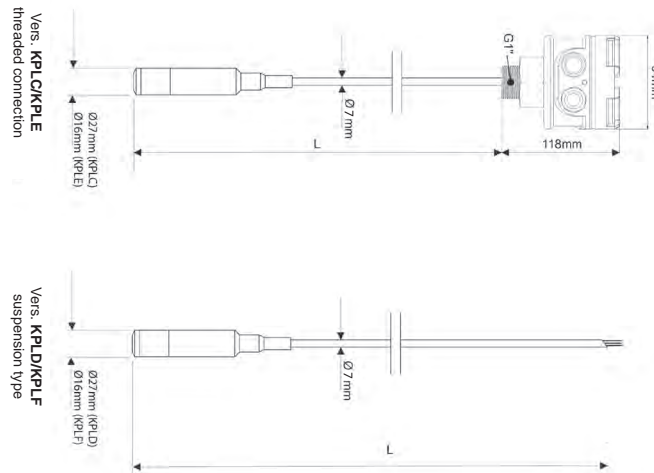
-40° ÷ +80°C

**Wetted part protection**

IP68

**Housing protection vers. KPLC, KPLE**

IP67



**KPL** Hydrostatic head level transmitter

Suitable for clean waters application  
 Immersed probe material : SS316L  
 Piezoelectric sensor - PU cable  
 Operation temperature: - 20° ÷ +70°C  
 Power supply: 10÷36Vdc  
 Wire-loop connection (2-wire) - Output: 4÷20mA (min 0,5, max 30mA)  
 Standard accuracy: ± 0,5%

Version	
<b>C</b>	ø 27 mm - PU cable extension with IP67 aluminum head connection. Standard length 5m - Price each additional m. eur 5,40
<b>D</b>	ø 27 mm - suspension type (5m standard length); without connection head- IP68 - Price each additional m. eur 5,40
<b>E</b>	ø 16 mm - PU cable extension with IP67 aluminum head connection. Standard length 5m - Price each additional m. eur 5,40
<b>F</b>	ø 16 mm - suspension type (5m standard length); without connection head - IP68 - Price each additional m. eur 5,40
<b>Z</b>	Special
Certification	
<b>M</b>	For use in drinkable water
<b>N</b>	None
Process connection / Material	
<b>N</b>	None (for versions D/F/H)
<b>P</b>	Male thread G 1"½ / PP - compulsory for C version
<b>T</b>	Male thread G 1" / SS304
<b>Z</b>	Special
Sealed material	
<b>F</b>	FPM (Viton)
<b>S</b>	SS316 welding - only for version E and F - COMPULSORY
Accessories	
<b>A</b>	None
<b>B</b>	Junction box in PC 3 way IP65 (490A074C)
<b>G</b>	Self-supporting fastening hook (for D/F versions - cod. 835A001A)
<b>M</b>	1"½ G slip joint connection
<b>N</b>	Nipple G½" M to be threaded on the sensor
<b>Z</b>	Special
Measure range	
<b>G03</b>	0 ÷ 1m H2O gauge p.
<b>G04</b>	0 ÷ 1,6m H2O gauge p.
<b>G05</b>	0 ÷ 2m H2O gauge p.
<b>G06</b>	0 ÷ 2,5m H2O gauge p.
<b>G07</b>	0 ÷ 3m H2O gauge p.
<b>G08</b>	0 ÷ 3,5m H2O gauge p.
<b>G09</b>	0 ÷ 4m H2O gauge p.
<b>G10</b>	0 ÷ 6m H2O gauge p.
<b>G11</b>	0 ÷ 10m H2O gauge p.
<b>G12</b>	0 ÷ 16m H2O gauge p.
<b>G13</b>	0 ÷ 20m H2O gauge p.
<b>G14</b>	0 ÷ 25m H2O gauge p.
<b>G15</b>	0 ÷ 40m H2O gauge p.
<b>G16</b>	0 ÷ 70m H2O gauge p.
<b>G17</b>	0 ÷ 100m H2O gauge p.
<b>G18</b>	0 ÷ 200m H2O gauge p.
<b>Z99</b>	Special



## **KWL** Hydrostatic head level transmitter

Suitable for use in waste water

Accuracy  $\pm 0.5\%$

Range 1 ÷ 200 m H<sub>2</sub>O

IP rating (wetted part): IP68

Power supply 12 ÷ 30Vdc (2-wires)

Optional IP67 aluminum housing

KWL is a great reliability level measurement for liquids. Typical application are waste water even with sludge presence. The hydrostatic level measurement uses the direct relationship between the height of the column of liquid and the pressure on the sensor diaphragm. The variation of level/pressure measured is transmitted by 4 ÷ 20 mA signal.

### **Technical Feature**

**Power supply**

12 ÷ 30Vdc (2-wire)

**Measurement range**

from 0 ÷ 0.4mH<sub>2</sub>O to 0 ÷ 200mH<sub>2</sub>O

**Immersed probe material**

PVC

**Shielded cable material**

PU Ø7.5mm

**Housing material (opt)**

aluminum

**Process connection**

2" GAS M; suspension cable; self-supporting fastening hook (opt.)

**Analog output**

4 ÷ 20mA

**Stability**

$\pm 0.1\%$  fs /12 months

**Accuracy**

$\pm 0.5\%$

**Working temperature**

-10° ÷ +50°C

**Storage temperature**

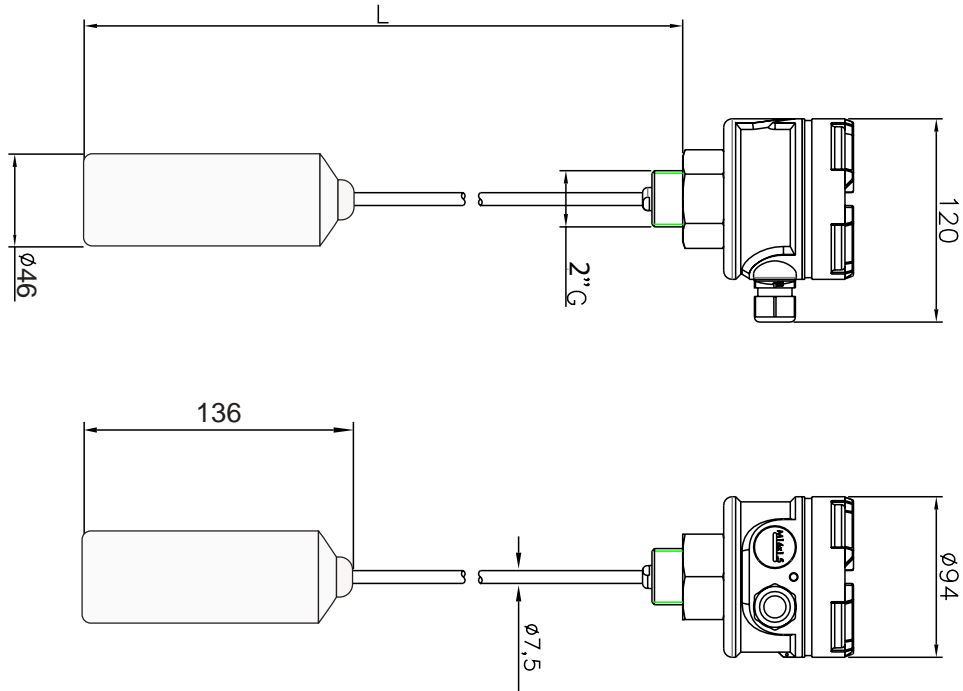
-20° ÷ +70°C

**Wetted part protection**

IP68

**Housing protection vers. KWLC**

IP67



**KWL**

Hydrostatic head level transmitter

Suitable for wastewater applications - IP68  
 Capacitance sensor - Immersed probe material ( $\phi 46$  mm): PVC  
 Gold-plated ceramic diaphragm - PU  $\phi 7,5$ mm shielded cable  
 FPM (Viton) sealing  
 Operation temperature:  $- 10^{\circ} \div + 50^{\circ}\text{C}$   
 Power supply: 12-30Vdc  
 Wire-loop connection (2-wire) - Output:  $4 \div 20\text{mA}$   
 Accuracy:  $\pm 0,5\%$  F.S.

Version	
<b>A</b>	Standard - Suspension type without connection head - IP68
<b>C</b>	Cable extension with IP67 aluminum enclosure. G 2" connection in PP
<b>G</b>	Suspension type without connection head - IP68 with anchor hook (cod 835A001A)
<b>Z</b>	Special
Measure range	
<b>402</b>	0 $\div$ 0,4m H2O gauge pressure
<b>103</b>	0 $\div$ 1m H2O gauge pressure
<b>203</b>	0 $\div$ 2m H2O gauge pressure
<b>503</b>	0 $\div$ 5m H2O gauge pressure
<b>703</b>	0 $\div$ 7m H2O gauge pressure
<b>104</b>	0 $\div$ 10m H2O gauge pressure
<b>204</b>	0 $\div$ 20m H2O gauge pressure
<b>254</b>	0 $\div$ 25m H2O gauge pressure
<b>504</b>	0 $\div$ 50m H2O gauge pressure
<b>704</b>	0 $\div$ 70m H2O gauge pressure
<b>105</b>	0 $\div$ 100m H2O gauge pressure
<b>205</b>	0 $\div$ 200m H2O gauge pressure
<b>999</b>	Special
Cable length	
<b>502</b>	5 m
<b>103</b>	10 m
<b>153</b>	15 m
<b>203</b>	20 m
<b>253</b>	25 m
<b>303</b>	30 m
<b>353</b>	35 m
<b>403</b>	40 m
<b>503</b>	50 m
<b>603</b>	60 m
<b>999</b>	Special

# Capacitive | Control

A capacitive level probe is used to detect the maximum or minimum level of a liquid or granular solid in a tank or silo. The operating principle of a capacitive level probe is based on the change in capacitance of a capacitor, which is determined by the level of material in the detection area. Capacitive level probes are accurate and dependable, especially when they are correctly calibrated and installed.

Measurement accuracy depends on the dielectric constant of the product to be controlled. If the material exhibits variable or non-uniform dielectric properties, measurement errors may consequently occur.



	CLS2	CLS4	CLS5
<b>Applications</b>	liquids / solids	liquids / solids	solids / granules
<b>Material in contact</b>	SS 316 / AVP / PVC / PTFE	SS 316 / PVC / PTFE	PEHD / PP
<b>Max temperature</b>	150°C	150°C	70°C
<b>Max pressure</b>	25 bar	25 bar	6 bar
<b>Max length probe</b>	asta 3 m - fune 10 m	2 m for liquids   3 m for solids	6 m
<b>Atex</b>	yes	yes	no
<b>Process connection</b>	G ¾" / G 1" / G 1½"	1" NPT / G ½" ÷ 1½" / DIN DN 25 ÷ 50 clamp 1" ÷ 2" / flange DN 40 ÷ 100 flange ANSI 2" ÷ 4"	G 1½"
<b>Connection material</b>	carbon steel / SS 316	carbon steel / SS 316 / PVC PTFE / SS 304 L	galvanized steel
<b>Power supply</b>	85÷230Vac / 24Vdc/Vac - 36Vac	85÷230Vac / 24Vdc/Vac - 36Vac	20 ÷ 36 Vdc / 20 ÷ 255 Vac
<b>Protection</b>	IP67	IP66 ÷ 67	IP67



	CLS7	CLS9
<b>Applications</b>	solids / granules	liquids
<b>Material in contact</b>	acciaio carbonio / AISI 316 / PE	PVC / PP
<b>Max temperature</b>	85°C	60/80°C
<b>Max pressure</b>	6 bar	6 bar
<b>Max length probe</b>	30 m	150 mm
<b>Atex</b>	yes	no
<b>Process connection</b>	G 1½" / flange DN 40 ÷ 100 flange ANSI 2" ÷ 4"	G 1" / G 1½"
<b>Connection material</b>	carbon steel / SS 304 / AISI 316	PVC / PP
<b>Power supply</b>	85÷230Vac / 24Vdc/Vac - 36Vac	85÷230Vac / 24Vdc/Vac - 36Vac
<b>Protection</b>	IP66 ÷ 67	IP66 ÷ 67





## CLS2 Capacitive level switch

Suitable for liquids, powders and granules

Protection IP67

ATEX certified versions

PTFE or PVC insulation

Standard capacitive units with rod or rope extension, for general industrial applications. Suitable for ON-OFF level control of granules, powders and liquids, IP66 ÷ 67 protection.

### Technical Feature

**Version**

compact; with heat sink

**Display**

Plug-in display/keyboard 4 buttons  
matrix LCD

**Process connection**

threaded; flanged

**IP rating**

IP67

**Electronics**

TL41R; TL41R ATEX

**Electrodes**

rod partially insulated in PTFE or PVC

**Standard electrode length**

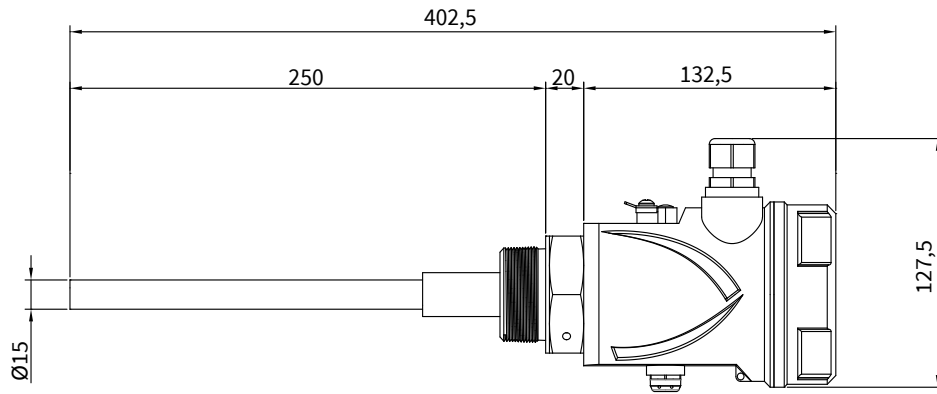
250mm

**Extensions**

with rigid rod Ø10mm AISI 316; rope  
Ø6mm and counterweight in carbon  
steel

**Atex**

II 1/2D Ex ia/tb IIIC T150°C Da/Db IP66  
; Tamb: -20°C ÷ 60°C



**CLS2** Standard rod level switch  
 ON/OFF capacitive level control  
 Top and lateral side metallic tank-installation  
 Standard length: 250mm  
 Setting by keyboard/display removable module VL601SGM (opt.)

Version	
<b>A</b>	Without preamplifier insert
<b>B</b>	Compact
<b>D</b>	Compact with carbon-steel dissipator between head and connection
<b>E</b>	Compact, ATEX II 1/2D Ex ia/tb IIIC T150°C Da/Db IP67 - Tamb: -20°C ÷ 60°C only with " G" housing
<b>F</b>	Compact with SS316 dissipator
<b>Z</b>	Special
Electronic preamplifier	
<b>00</b>	None
<b>43</b>	TL41R ON-OFF, supply 85÷230Vac 50Hz, Relay output SPDT - without display
<b>44</b>	TL41R ON-OFF, supply 85÷230Vac 50Hz, Relay output SPDT - with removable display
<b>45</b>	TL41R ON-OFF, supply 24Vdc/Vac - 36 Vac 50Hz, Relay output SPDT - without display
<b>46</b>	TL41R ON-OFF, supply 24Vdc/Vac - 36 Vac 50Hz, Relay output SPDT - with removable display
<b>99</b>	Special
Housing	
<b>F</b>	PC with transparent cap and osmotic filter, IP67
<b>G</b>	IP67 aluminum varnished with osmotic filter (necessary for ATEX version)
<b>L</b>	PC with blind cap and osmotic filter, IP67
<b>Z</b>	Special
Process connection	
<b>01</b>	G1" / Carbon-steel
<b>02</b>	G1" / SS316
<b>11</b>	G1"½ / Carbon steel
<b>12</b>	G1"½ / SS316
<b>99</b>	Special
Electrode type and insulation	
<b>B</b>	Partially PVC insulated Ø15mm Carbon-steel rod
<b>C</b>	Ø15mm Carbon-steel rod with extended PVC insulation
<b>D</b>	Partially PTFE insulated Ø15mm Carbon-steel rod
<b>H</b>	Partially PVC insulated Ø15mm SS316 rod
<b>I</b>	Ø15mm SS316 rod with extended PVC insulation
<b>L</b>	Partially PTFE insulated Ø15mm SS316 rod
<b>Z</b>	Special
M10x1,5 female thread for extension	
<b>0</b>	None
<b>1</b>	M10x1,5 female thread on top
Non sensitive part	
<b>A</b>	None
<b>B</b>	100mm, same material of process connection - only with connection code 11
<b>Z</b>	Special
Extension type	
<b>000</b>	None
<b>400</b>	Ø10mm SS316 rod
<b>700</b>	Ø6mm carbon-steel rope + carbon-steel counterweight - only with connection code 11 Warning! For length over 3m, extra price of 31,80 EUR
<b>999</b>	Special
Extension length	
<b>A</b>	Without
<b>B</b>	Rigid rod Ø10mm, price each 10cm (max 3m)
<b>C</b>	Carbon-steel rope Ø6mm, price each m (max 10m)
<b>Z</b>	Special



## CLS4 Capacitive level switch

Suitable for liquids, powders and granules

Protection IP67

ATEX certified versions

PTFE or PVC insulation

Capacitive units with rod probe for general-purpose, suitable for ON-OFF level control in conductive or non-conductive liquids, IP66 ÷ 67 protection, installation on the top or side of metallic vessels. Available with PTFE or PVC electrode protection.

### Technical Feature

**Version**

compact; with heat sink

**Process connection**

threaded; flanged; sanitary

**IP rating**

IP66 ÷ 67

**Electronics**

TL41R; TL41R ATEX; TC73R

**Display**

Plug-in display/keyboard 4 buttons  
matrix LCD

**Max electrode length**

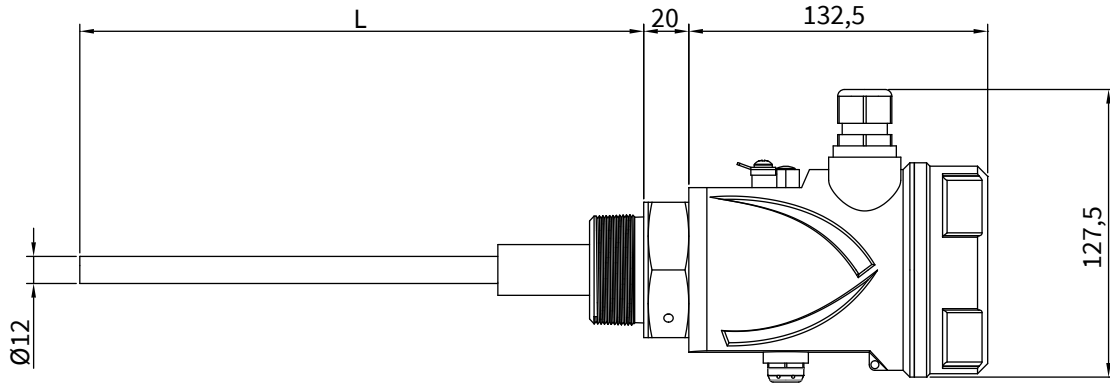
3 m

**Electrodes**

rod partially insulated in PTFE or PVC

**Atex**

II 1/2D Ex ia/tb IIIC T150°C Da/Db IP66  
; Tamb: -20°C ÷ 60°C



**CLS4**

Rod level switch

ON/OFF capacitive level control  
 Suitable for conductive and non-conductive liquids  
 Top and lateral side metallic tank-installation  
 Setting by VL601SGM keyboard/display removable module (TL41R) opt.  
 or by pushing buttons (TC7.3R)

Version	
<b>A</b>	Without preamplifier
<b>B</b>	Compact
<b>D</b>	Compact with carbon-steel dissipator between head and connection
<b>E</b>	Compact, ATEX II 1/2D Ex ia/tb IIIC T150°C Da/Db IP66 - Tamb: -20°C ÷ 60°C (only with TL41R insert and "G" housing)
<b>F</b>	Compact, with SS316 dissipator between head and connection
<b>H</b>	Separate with M8 female connection + 2m coax cable with double shielding max. 120°C (cod 525A003E). Electrode with DIN B aluminum housing - IP66 - only with 1/2" connection and TC7.3R insert
<b>L</b>	Separate with M8 female connection + , 2m coax cable with double shielding max. 120°C (cod 525A003E). Electrode with DIN A aluminum housing - IP66 - only with TC7.3R insert
<b>N</b>	Compact, with carbon-steel dissipator, ATEX II 1/2D Ex ia/tb IIIC T150°C Da/Db IP66 - Tamb: -20°C ÷ 60°C (only with TL41R insert and "G" housing)
<b>P</b>	Compact, with SS316 dissipator, ATEX II 1/2D Ex ia/tb IIIC T150°C Da/Db IP66 - Tamb: -20°C ÷ 60°C (only with TL41R insert and "G" housing)
<b>R</b>	Separate with Al fixing base + 2m coax cable with double shielding max. 120°C (cod 525A003E). Electrode with DIN B aluminum housing - IP66 - only with 1/2" connection
<b>S</b>	Separate with Al fixing base + 2m coax cable with double shielding max. 120°C (cod 525A003E). Electrode with DIN A aluminum housing - IP66
<b>Z</b>	Special
Electronic preamplifier	
<b>00</b>	None
<b>43</b>	TL41R ON-OFF, supply 85÷230Vac 50Hz, Relay output SPDT - without display
<b>44</b>	TL41R ON-OFF, supply 85÷230Vac 50Hz, Relay output SPDT - with removable display
<b>45</b>	TL41R ON-OFF, supply 24Vdc/Vac - 36 Vac 50Hz, Relay output SPDT - without display
<b>46</b>	TL41R ON-OFF, supply 24Vdc/Vac - 36 Vac 50Hz, Relay output SPDT - with removable display
<b>73</b>	TC7.3R local calibration, 24Vdc, 3 relays out for 3 adjustable set-points
<b>99</b>	Special
Housing for electronic preamplifier	
<b>B</b>	IP66 loaded PC , white polycarbonate cap - only with TC7.3R insert
<b>F</b>	PC with transparent cap and osmotic filter, IP67 - only with TL41R insert
<b>G</b>	IP67 aluminum varnished with osmotic filter (necessary for ATEX version) - only with TL41R insert
<b>L</b>	PC with blind cap and osmotic filter, IP67 - only with TL41R insert
<b>Z</b>	Special

Process connection	
01	G1" / Carbon-steel - not for DIN B housing
02	G1" / SS316 - not for DIN B housing
03	1" NPT-M / Carbon-steel - not for DIN B housing
04	1" NPT-M / SS316 - not for DIN B housing
11	G1½" / Carbon-steel - not for DIN B housing
12	G1½" / SS316 - not for DIN B housing
18	G1½" / PVC - only for compact versions, B housing and TC73R insert
19	G1½" / PTFE - not for DIN B housing
20	Sanitary DN25 DIN 11851 / SS304L - not for DIN B housing
21	Sanitary DN40 DIN 11851 / SS304L - not for DIN B housing
22	Sanitary DN50 DIN 11851 / SS304L - not for DIN B housing
40	Threaded flange DN40 PN6 UNI 1092-1 / PVC
41	Threaded flange DN40 PN6 UNI 1092-1 / PTFE
42	Threaded flange DN40 PN16 / Carbon-steel
45	Threaded flange DN50 PN6 UNI 1092-1 / PVC
46	Threaded flange DN80 PN6 UNI 1092-1 / PVC
47	Threaded flange DN100 PN6 UNI 1092-1 / PVC
50	Threaded flange DN40 PN16 / SS304
51	Threaded flange DN40 PN16 / SS316
52	Threaded flange DN50 PN16 DIN 2527 form B (without gasket) / SS316
53	Threaded flange DN80 PN16 DIN 2527 form B (without gasket) / SS316
54	Threaded flange DN100 PN16 DIN 2527 form B (without gasket) / SS316
59	Threaded flange 1½" ANSI RF #150 / SS316
60	Threaded flange 2" ANSI RF # 150 / SS316
61	Threaded flange 3" ANSI RF # 150 / SS316
62	Threaded flange 4" ANSI RF # 150 / SS316
71	CLAMP 1" / SS316
73	CLAMP 1½" / SS316
75	CLAMP 2" / SS316
83	G½" / Carbon-steel - not for electrodes type Q/R/S
84	G½" / Stainless-steel SS316 - not for electrodes type Q/R/S
92	G ¾" / SS316 - not for DIN B housing
99	Special

Electrode type and insulation	
B	PTFE partially insulated SS316 rod
C	SS316 rod with extended PVC insulation
D	PVC totally insulated SS316 rod
G	SS316 rod with extended PTFE insulation
H	PTFE totally insulated SS316 rod
L	PTFE 8/12 totally insulated SS316 rod (for liquids max 2000mm)
Q	PTFE partially insulated SS316 rod + SS316 concentric reference electrode (for liquids)
R	PVC totally insulated SS316 rod + SS316 concentric reference electrode (for liquids) just with non sensitive part cod A
S	PTFE 8/12 insulated rod + SS316 grounding reference (for liquids - max length 2000mm) just with non sensitive part cod A
Z	Special

L= Electrode length, price each 100mm	
40	PTFE partially insulated SS316 rod
41	SS316 rod with extended PVC insulation
42	PVC totally insulated SS316 rod
45	SS316 rod with extended PTFE insulation
46	PTFE totally insulated SS316 rod
48	PTFE 8/12 totally insulated SS316 rod (for liquids max 2000mm)
53	PTFE partially insulated SS316 rod + SS316 concentric reference electrode (for liquids)
54	PVC totally insulated SS316 rod + SS316 concentric reference electrode (for liquids)
55	PTFE 8/12 insulated rod + SS316 grounding reference (for liquids - max length 2000mm)
99	Special

L1 = non sensitive part (rod), material and price each 10cm	
A	None
B	Carbon-steel
C	SS316
Z	Special





## CLS5 Capacitive level switch

Sensor element in PP  
Suitable for control of granules and powders  
IP67 protection  
Cable in HDPE  
Max length 6 m

CLS5 is a capacitive level control instrument that uses an advanced technology. CLS5 is equipped with a sensor in PP heat-sealed. This allows its use in a wide applications range for the level control in granules or powders such as cement, flour, feed for animals, etc. ... CLS5 is easily configurable via the VL602 module. Maximum tensile load 3000 N.

### Technical Feature

**Housing material**

polycarbonate

**Process connection material**

AVP

**Rope material**

PHED

**Sensor material**

Polycarbonate

**Process connection**

1"½GAS M

**Tensile strength**

max 3000N (<40°C); max. 2800N (80°C)

**Pressure**

-1÷+6bar

**Working temperature**

-30 ÷ +70°C; +80°C

**Power supply**

20÷36Vdc; 20÷255Vac 50/60Hz

**Electrical connections**

Terminal

**Output**

Relay 3A 230Vac

**Mode of intervention**

min or max

**Delay**

0÷30s.

**Calibraton**

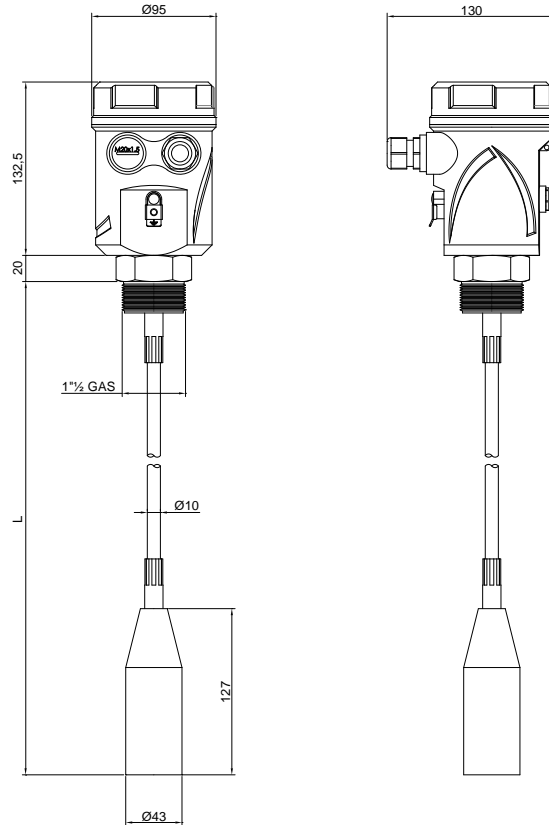
4 buttons

**Warm up**

1 minut

**Display**

Plug-in display/keyboard 4 buttons  
matrix LCD



**CLS5**

PEHD insulated rope level switch for granulates

- Process connection, G1"1/2 / galvanized steel
- Product temperature range : -30° ÷ +70°C (80° non continuous)
- IP67 mechanical protection
- Extension with PEHD isolated steel cable
- Power supply: 20÷36Vdc / 20÷255Vac 50Hz
- 0,8W or 15VA max power consumption
- Relay output rating 250Vac, 2A
- Setting by VL602SGM keyboard/display removable module (opt.)

Version	
<b>A</b>	Compact with transparent cap, IP67
<b>B</b>	Compact with blind cap, IP67
<b>Z</b>	Special
Extension length	
<b>1</b>	L = 1500mm
<b>2</b>	L = 2500mm
<b>3</b>	L = 3000mm
<b>4</b>	L = 4000mm
<b>5</b>	L = 6000mm
<b>9</b>	Special
Accessories	
<b>A</b>	None
<b>D</b>	VL602 keyboard/display programming module (VL602SGM)
<b>Z</b>	Special





## CLS7 Capacitive level switch

Contact level control for top mounting  
Wire rope carbon steel / PE  
Suitable for control of granules and powders  
IP66 ÷ 67 protection  
Max length 30 m  
ATEX certified versions

Capacitive instrument with wired rope probe for heavy duty, suitable for level controls in granules and dust, IP66 ÷ 67 protection, installation on the top of metallic vessels.

### Technical Feature

#### Versions

Compact; remote

#### Process connection material

AVP; SS316

#### IP rating

IP66 / 67

#### Electronic models

TL41R; TL41R ATEX; TC73R

#### Display

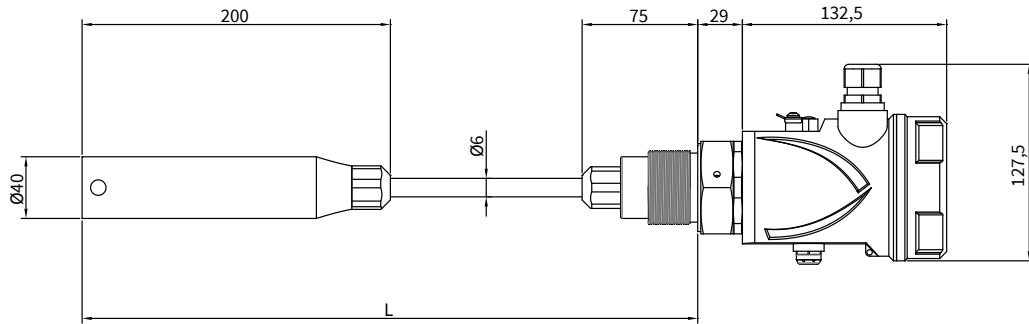
Plug-in display/keyboard 4 buttons  
matrix LCD

#### Electrodes

Rope Ø8mm bare or completely insulated in PE

#### Atex

II 1/2D Ex ia/tb IIIC T150°C Da/Db IP66  
; Tamb: -20°C ÷ 60°C



**CLS7** Rope level switch for granulates  
 ON/OFF capacitive level control  
 Suitable for bulk solid and granulates  
 Top side metallic tank-installation  
 Setting by keyboard/display removable module (TL41R) opt.  
 or by pushing buttons (TC7.3R)

Version	
<b>A</b>	Without electronic preamplifier
<b>B</b>	Compact
<b>E</b>	Compact, ATEX II 1/2D Ex ia/tb IIIC T150°C Da/Db IP67 - Tamb: -20°C ÷ 60°C (only with TL41R insert and " G" housing)
<b>Z</b>	Special
Electronic preamplifier	
<b>00</b>	None
<b>43</b>	TL41R ON-OFF, supply 85÷230Vac 50Hz, Relay output SPDT - without display
<b>44</b>	TL41R ON-OFF, supply 85÷230Vac 50Hz, Relay output SPDT - with removable display
<b>45</b>	TL41R ON-OFF, supply 24Vdc/Vac - 36 Vac 50Hz, Relay output SPDT - without display
<b>46</b>	TL41R ON-OFF, supply 24Vdc/Vac - 36 Vac 50Hz, Relay output SPDT - with removable display
<b>73</b>	ON-OFF TC7.3R local calibration, 24Vdc, 3 relays out for 3 adjustable set-points
<b>99</b>	Special
Housing for electronic preamplifier	
<b>B</b>	IP66 loaded PC , white polycarbonate cap - only with TC7.3R insert
<b>F</b>	PC with transparent cap and osmotic filter, IP67 - only with TL41R insert
<b>G</b>	IP67 aluminum varnished with osmotic filter (necessary for ATEX version) - only with TL41R insert
<b>L</b>	PC with blind cap and osmotic filter, IP67 - only with TL41R insert
<b>Z</b>	Special
Process connection	
<b>11</b>	G1½ / Carbon-steel
<b>12</b>	G1½ / SS316
<b>42</b>	Threaded flange DN40 PN16 / Carbon-steel
<b>50</b>	Threaded flange DN40 PN16 / SS304
<b>51</b>	Threaded flange DN40 PN16 / SS316
<b>52</b>	Threaded flange DN50 PN16 DIN2527 form B (without gasket) / SS316
<b>53</b>	Threaded flange DN80 PN16 DIN2527 form B (without gasket) / SS316
<b>54</b>	Threaded flange DN100 PN16 DIN2527 form B (without gasket) / SS316
<b>60</b>	Threaded flange 2" ANSI RF #150 / SS316
<b>61</b>	Threaded flange 3" ANSI RF #150 / SS316
<b>62</b>	Threaded flange 4" ANSI RF #150 / SS316
<b>99</b>	Special
Electrode type and insulation	
<b>L</b>	Ø8mm carbon steel, counterweight in carbon steel
<b>M</b>	Ø8mm carbon steel, counterweight in SS316
<b>N</b>	Ø8mm carbon steel PE coated, counterweight in carbon steel
<b>P</b>	Ø8mm carbon steel PE coated, counterweight in SS316
<b>Z</b>	Special
L= Electrode length, price each meter	
<b>73</b>	Ø8mm carbon steel
<b>74</b>	Ø8mm carbon steel PE coated
<b>99</b>	Special
L1 = non sensitive part (rod), material and price each 10cm	
<b>A</b>	Standard (75mm)
<b>B</b>	Carbon-steel
<b>Z</b>	Special



**CLS9**  
**Capacitive level switch**

Contact level control for plastic or fiberglass tanks  
 IP66 ÷ 67 protection  
 Side mounting, threaded or flanged types  
 PP / PVC Wetted Parts  
 Probe length 103/150 mm

Capacitive units suitable for applications in plastic or fiberglass tanks for the on-off control of acids or other chemically aggressive products. Installation on the side of the tank.

**Technical Feature**

**Versions**

Compact

**Process connection**

Threaded; flanged

**Display**

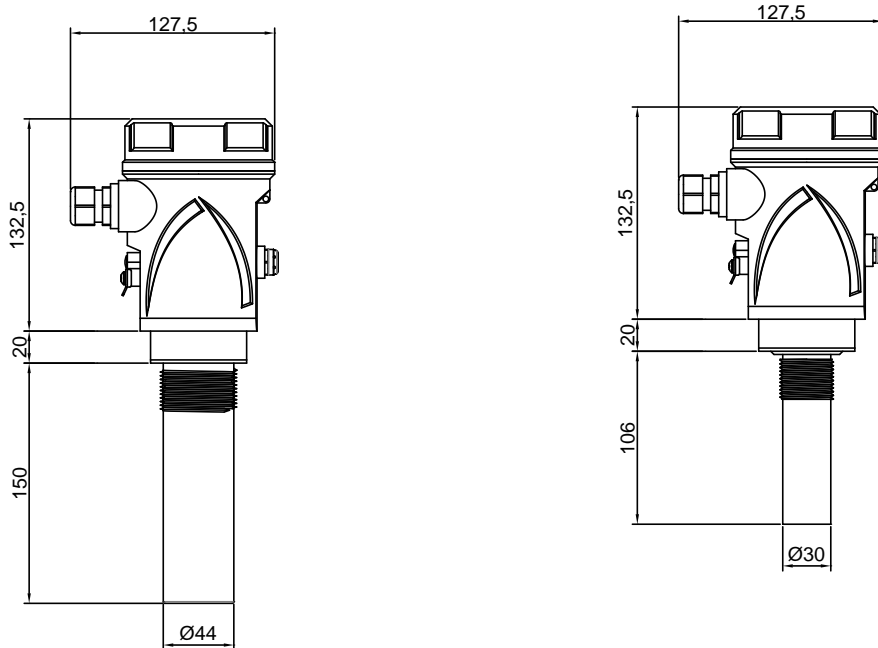
Plug-in display/keyboard 4 buttons  
 matrix LCD

**IP rating**

IP67

**Electrodes**

Insulated in PP;PVC

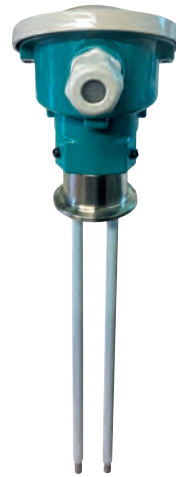


**CLS9** Rod level switch for plastic tanks  
 ON/OFF capacitive level control  
 Suitable for chemical products, acids and others  
 Top and lateral side plastic tanks-installation  
 Setting by keyboard/display removable module VL601SGM (opt.)

Version	
<b>A</b>	Without electronic preamplifier
<b>B</b>	Compact
<b>Z</b>	Special
Electronic preamplifier	
<b>00</b>	None
<b>43</b>	TL41R ON-OFF, supply 85÷230Vac 50Hz, Relay output SPDT - without display
<b>44</b>	TL41R ON-OFF, supply 85÷230Vac 50Hz, Relay output SPDT- with removable display
<b>45</b>	TL41R ON-OFF, supply 24Vdc/Vac - 36 Vac 50Hz, Relay output SPDT - without display
<b>46</b>	TL41R ON-OFF, supply 24Vdc/Vac - 36 Vac 50Hz, Relay output SPDT - with removable display
<b>99</b>	Special
Housing	
<b>F</b>	PC with transparent cap and osmotic filter IP67
<b>G</b>	IP67 aluminum varnished with osmotic filter
<b>L</b>	PC with blind cap and osmotic IP67
<b>Z</b>	Special
Process connection	
<b>05</b>	G1" / PVC - Ø30mm (L = 106 mm)
<b>06</b>	G1" / PP - Ø30mm (L = 106 mm)
<b>18</b>	G1"½ / PVC - Ø44mm (L = 150 mm)
<b>23</b>	G1"½ / PP - Ø44mm (L = 150 mm)
<b>40</b>	Flange DN40 PN6 PVC (threaded)
<b>43</b>	Flange DN40 PN6 PP (Threaded+welding)
<b>99</b>	Special
Electrode type and insulation	
<b>B</b>	PVC totally insulated - only with connection codes 05/18/40
<b>C</b>	PP totally insulated - only with connection codes 06/23/43
<b>Z</b>	Special

# Conductive | On-Off

The resistive principle uses the conductivity of the liquid to be tested. The electrical current travels through the liquid and comes into contact with the electrode detecting the reached level. The probes are available with single or multi-rod or rope electrodes (max 5). Process connections are extremely varied, threaded, flanged or sanitary type with different sizes and materials. Control units associated with the resistive probes allow the user to set the sensitivity, the delay times and also to check the connections between the probe and the control units.



	<b>RL6</b>
<b>Applications</b>	liquids
<b>Material in contact</b>	SS 316 / PVC / PTFE / FEP
<b>Product max temperature</b>	150°C
<b>Max pressure</b>	25 bar
<b>Probe length</b>	3 m
<b>Process connection</b>	G 3/4" ÷ 1 1/2" / NPT 3/4" ÷ 1" DIN DN 25 ÷ 50 / clamp 1" ÷ 2"
<b>Connection material</b>	PVC / SS 304 L / SS 316
<b>Atex</b>	no
<b>Protection</b>	IP66
<b>Power supply</b>	no



	<b>RL8</b>
<b>Applications</b>	liquids
<b>Material in contact</b>	SS 316 / PTFE
<b>Product max temperature</b>	60°C
<b>Max pressure</b>	25 bar
<b>Probe length</b>	30 m
<b>Process connection</b>	G 1" ÷ 1½" / 1" NPT clamp 1" ÷ 2"
<b>Connection material</b>	SS 316 / PVC / PTFE
<b>Atex</b>	no
<b>Protection</b>	IP66
<b>Power supply</b>	no



**RL6**  
Conductive level switch

Multi-electrode rod probe  
IP66  
Up to 5 rods  
Max electrode length 3 meters



**RL8**  
Conductive level switch

Multi-electrode rod probe  
IP66  
Up to 5 rods  
Max electrode length 30 meters



**RL6** Multi rods electrode  
 Conductive level control; max 5 rods  
 Max electrode length: 3m

Housing	
<b>B</b>	Polycarbonate loaded; IP66
<b>E</b>	DIN B aluminum painted (n.1 electrode selection available); IP66
<b>G</b>	DIN A aluminum painted; IP66
<b>Z</b>	Special
Process connection	
<b>02</b>	G 1" / SS316, max 4 electrodes Ø5mm - not for DIN B housing
<b>04</b>	1" NPT-M / SS316 - max 4 electrodes Ø5mm - not for DIN B housing
<b>05</b>	G 1" / PVC - max 4 electrodes Ø5mm - not for DIN B housing
<b>12</b>	G 1" ½ / SS316 - not for DIN B housing
<b>18</b>	G 1" ½ / PVC - not for DIN B housing
<b>20</b>	DN25 DIN11851 SS304L (sanitary) - only with B housing and 1 electrode
<b>21</b>	DN40 DIN11851 SS304L (sanitary) - only with B housing
<b>22</b>	DN50 DIN11851 SS304L (sanitary) - only with B housing
<b>71</b>	Clamp 1" SS316 - not for DIN B housing
<b>73</b>	Clamp 1" ½ SS316 - not for DIN B housing
<b>75</b>	Clamp 2" material SS316 - only for B housing
<b>84</b>	G ½" / SS316 - only with DIN B housing and 1 electrode (option B)
<b>85</b>	½" NPT-M / SS316 - only with DIN B housing and 1 electrode (option B)
<b>92</b>	G ¾" / SS316 - only with DIN B housing and 1 electrode Ø10mm (option B)
<b>93</b>	¾" NPT-M / SS316 - only with DIN B housing and 1 electrode Ø10mm (option B)
<b>99</b>	Special
Nr. of electrodes	
<b>B</b>	1
<b>C</b>	2; only for process fitting cod. 02, 04, 05, 12, 18, 20, 21, 22, 71, 73, 75, 94
<b>D</b>	3; only for process fitting cod. 02, 04, 05, 12, 18, 21, 22, 71, 73, 75
<b>E</b>	4; only for process fitting cod. 02, 04, 05, 12, 18, 21, 22, 71, 73, 75
<b>F</b>	5; only for process fitting cod. 12, 18, 21, 22, 75
<b>Z</b>	Special
Electrodes type, insulation and length - price per 100mm of each electrode (max 3m)	
<b>36</b>	Ø5mm SS316 rod
<b>37</b>	PVC coated Ø5mm SS316 rod
<b>38</b>	PTFE coated Ø5mm SS316 rod
<b>40</b>	Ø10mm SS316 rod, only for one electrode
<b>41</b>	PVC coated Ø10mm SS316 rod, only for one electrode
<b>44</b>	PTFE coated Ø10mm SS316 rod, only for one electrode
<b>99</b>	Special

**RL8** Multi ropes electrode  
 Conductive level control; max. 5 ropes  
 Max electrodes length 30m

Housing	
<b>B</b>	Polycarbonate loaded; IP66
<b>Z</b>	Special
Process connection	
<b>02</b>	G 1" / SS316
<b>04</b>	1" NPT-M / SS316
<b>05</b>	G 1" / PVC
<b>12</b>	G 1" ½ / SS316
<b>18</b>	G 1" ½ / PVC
<b>19</b>	G 1" ½ / PTFE
<b>71</b>	Clamp 1" / SS316
<b>73</b>	Clamp 1" ½ / SS316
<b>75</b>	Camp 2" / SS316
<b>99</b>	Special
Nr. of electrodes	
<b>B</b>	n.1
<b>C</b>	n.2
<b>D</b>	n.3
<b>E</b>	n.4; only for connection cod. 12, 18, 73, 75
<b>H</b>	n.5; only for connection cod. 12, 18, 73, 75
<b>Z</b>	Special
Rope type, price per meter of each electrode	
<b>81</b>	PVC insulated Ø1,5mm SS316
<b>99</b>	Special



## RL3 Multi rods electrode



**RL3** Multi rods electrode  
Conductive level control;  
max 5 rods  
Max electrode length: 3m

Housing	
<b>B</b>	PVC black; IP66
Process connection	
<b>18</b>	G 1" ½ / Black PVC
Electrodes support	
<b>D</b>	For nr. 3 electrodes
<b>F</b>	For nr. 5 electrodes
Accessories / Electrodes	
<b>0</b>	None
<b>1</b>	L= 1m ø6mm SS316 rod - unit price
<b>2</b>	L= 2m ø6mm SS316 rod - unit price
<b>3</b>	L= 3m ø6mm SS316 rod - unit price
<b>4</b>	PVC spacer (585B045P)

## CLN Electrode for well and borehole



**CLN** Electrode for well and borehole

Base	
<b>CLN</b>	ON/OFF conductive level control electrode, to be fixed to the connection cable (not included) Electrode material SS316 Ø 6mm - External pipe in PVC to avoid short circuits



sgm  lektra



### **RAL11**

#### **Unit for conductive electrodes**

Level control with conductivity electrodes  
 Suitable for conductive liquids measurement (21microS ÷ 2100microS)  
 24/115/230Vac power supply  
 Connections with UNDECAL socket



### **RAL12**

#### **Unit for conductive electrodes**

Level control with conductivity electrodes  
 Suitable for conductive liquids measurement (21microS ÷ 2100microS)  
 24/115/230Vac power supply  
 Connections with UNDECAL socket



### **RAL13**

#### **Unit for conductive electrodes**

Level control with conductivity electrodes  
 Suitable for conductive liquids measurement (4microS ÷ 1000microS)  
 24/115/230Vac; 24 Vdc power supply  
 Delay time adjustable  
 Connections with UNDECAL socket



**RAL11** Unit for level conductive electrodes  
Min/max conductive level control or pump control  
Alternate control voltage to the electrodes  
2 relays SPDT contacts 3A/250Vac - Adj.sensibility  
Undecal plug-in male-socket; IP40 frontal  
Working temperature -20 +50°C

Version	
<b>A</b>	Standard
<b>B</b>	IP56 (inside plastic housing cod 545A015N)
<b>Z</b>	Special

Power supply	
<b>0</b>	24Vac 50÷60Hz
<b>1</b>	115Vac 50÷60Hz
<b>2</b>	230Vac 50÷60Hz

Accessories	
<b>A</b>	None
<b>B</b>	Undecal socket + fixing spring
<b>Z</b>	Special

**RAL12** Unit for level conductive electrodes  
Min/max conductive level control; adj.sensibility  
Alternate control voltage to the electrodes  
Control of the electrodes electrical connection "security relay"  
N1 level control relay; SPDT contacts 3A/250Vac  
N1 safety relay; SPDT contacts 3A/250Vac  
Undecal plug-in male-socket; IP40 frontal  
Working temperature -20 +50°C

Version	
<b>A</b>	Standard
<b>B</b>	IP56 (inside plastic housing cod 545A015N)
<b>Z</b>	Special

Power supply	
<b>0</b>	24Vac 50÷60Hz
<b>1</b>	115Vac 50÷60Hz
<b>2</b>	230Vac 50÷60Hz

Accessories	
<b>A</b>	None
<b>B</b>	Undecal socket + fixing spring
<b>Z</b>	Special

**RAL13** Unit for level conductive electrodes  
Min/max conductive level control or pump control  
Alternate control voltage to the electrodes  
2 relays SPDT contacts 3A/250Vac  
Adj. sensibility and delay time  
Undecal plug-in male-socket; IP40 frontal  
Working temperature -20 +50°C

Version	
<b>A</b>	Standard
<b>B</b>	IP56 (inside plastic housing cod 545A015N)
<b>Z</b>	Special

Power supply	
<b>0</b>	24Vac 50÷60Hz
<b>1</b>	115Vac 50÷60Hz
<b>2</b>	230Vac 50÷60Hz
<b>4</b>	24Vdc

Accessories	
<b>A</b>	None
<b>B</b>	Undecal socket + fixing spring
<b>Z</b>	Special

# Diapason | On-Off

A diapason, also referred to as a vibrating fork, is a mechanical probe consisting of two piezoelectric forks that vibrate at the same frequency. When the fork comes into contact with the material, the vibration frequency changes, and this change is detected to determine the level of the material.

A diapason level switch is suitable for liquids and solids, even those that are powdery or granular in nature.

Measurements are not affected by the electrical or conductive properties of the material.

It is not suitable for high-viscosity or high-density materials, since material build-up on the fork may affect the accuracy of the measurement.



	<b>RSL100</b>
<b>Applications</b>	liquids
<b>Material in contact</b>	SS 316
<b>Product max temperature</b>	150°C
<b>Max pressure</b>	40 bar
<b>Maximum granules size</b>	-
<b>Viscosity max</b>	5000 cst max a 25°C
<b>Probe length STD version</b>	63 mm
<b>Max rigid probe length</b>	3 m
<b>Process connection</b>	G 1" / G 3/4" / G 1/2" / DIN 2999
<b>Atex</b>	-
<b>Protection</b>	IP66
<b>Power supply</b>	10 ÷ 30 Vdc



	<b>RSL200</b>
<b>Applications</b>	granules / powders
<b>Material in contact</b>	SS 316
<b>Product max temperature</b>	150°C
<b>Max pressure</b>	25 bar
<b>Maximum granules size</b>	12 mm
<b>Viscosity max</b>	-
<b>Probe length STD version</b>	202 mm
<b>Max rigid probe length</b>	3 m
<b>Process connection</b>	G 1½" / SS 316
<b>Atex</b>	yes
<b>Protection</b>	IP67
<b>Power supply</b>	85÷230Vac / 24Vdc/Vac - 36Vac



**RSL100**  
Diapason level switch

Liquid level control by contact  
IP66 protection  
Threaded or flanged side mounting  
Insertion 103/150 mm

Suitable for control of liquids such as oils, water, paints and transparent inks, sauces, milk, liquids containing carbon dioxide, oil foaming. RSL100 is designed as a shortcut to 2 / 3 wires and for universal use in tanks and pipes.

**Technical Feature**

**Applications**

Oils, Water, Paints and clear inks, Sauces, Milk, Liquids containing carbon dioxide, Foaming oils.

**Housing materials**

PVDF / SS316

**Process connection material**

AISI316

**Process connections**

G 1"; G 3/4"; G 1/2" DIN 2999

**IP rating**

IP66

**Pressure**

operative: 40 bar -20°C ÷ +70°C

**Max temperature**

Fluid: 100°C (150°C version B)

**Power supply**

10 ÷ 30 Vdc

**Load capacity**

0.5 A max (5A for 40 ms)

**Minimum switching current**

7.5 mA

**OFF status**

leakage current: <2 mA constant

**Voltage drop**

4.5V at 500 mA; 10V at 7.5 mA

**Delay**

1 sec

**Viscosity**

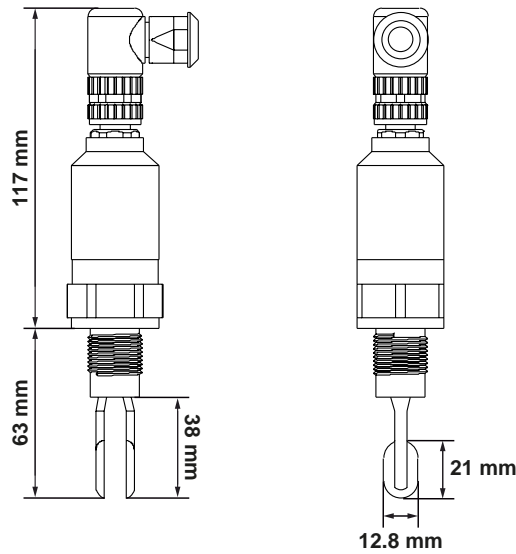
5000 cst max at 25°C

**Hysteresis**

4 mm vertical, 1 mm horizontal

**Repeatability**

± 1 mm



**RSL100**

Diapason level switch for liquids

Fork material: SS316 - Max. pressure: 40bar

Power supply: 10÷30Vdc

Electrical connection: M12 x 1 with connector and 5m cable

IP66 mechanical protection

Version	
A	Max temperature 100°C
B	Max temperature 150°C
Z	Special
Process connection	
1	G ½" DIN 2999
2	G ¾" DIN 2999
3	G 1" DIN 2999
9	Special
Output	
A	PNP / NPN
C	Relay MAX level
D	Relay MIN level
Z	Special
Extension	
1	Standard L= 63 mm
2	SS316 rigid rod (max 3 m) - price each 100 mm
3	SS316 rigid rod L= 280 mm
4	SS316 rigid rod L= 350 mm
9	Special
Accessories	
A	None
C	Material certificate 3.1
D	G½" F / G1" M SS316 adapter
Z	Special





## RSL200 Diapason level switch

For granules and powder measurement

G1 1/2 Threaded connections

SPDT output relays

IP67

Universal AC/DC power supply

ATEX

RSL200 controls the level thresholds of powders or granular products using the vibrating fork method. Typical applications include the protection of overflow or product failure monitoring for flour, cereals, milk, dust, sand, cement, plastic or organic granules, polystyrene foam, etc.

### Technical Feature

#### Power supply

85÷230Vac / 24Vdc/Vac - 36Vac

#### Power consumption

max. 0,5W (Vdc); max. 5 VA (Vac)

#### Housing material

polycarbonate or aluminum (ATEX version)

#### Min. product density

20g/dm<sup>3</sup>

#### Max. product grain size

12mm

#### IP rating

IP66

#### Cable entry

Pg13,5 or 2 x M20x1,5 (ATEX)

#### Terminals

max.1,5mm<sup>2</sup> wire cross-section

#### Process connection

1 1/2 GAS SS316

#### Diapason, material

SS316

#### Housing temperature range

-20 ÷ +60 °C (ATEX)

#### Product temperature range

-40 ÷ +150 °C; -20 ÷ +140 °C (ATEX)

#### Storage temperature range

-40 ÷ +70 °C

#### Pressure

max. 25bar

#### Led display

output status detection mode

#### Switch mode

min. or max.

#### Delay time

1 o 4s

#### Setting selection

push buttons

#### Output relay

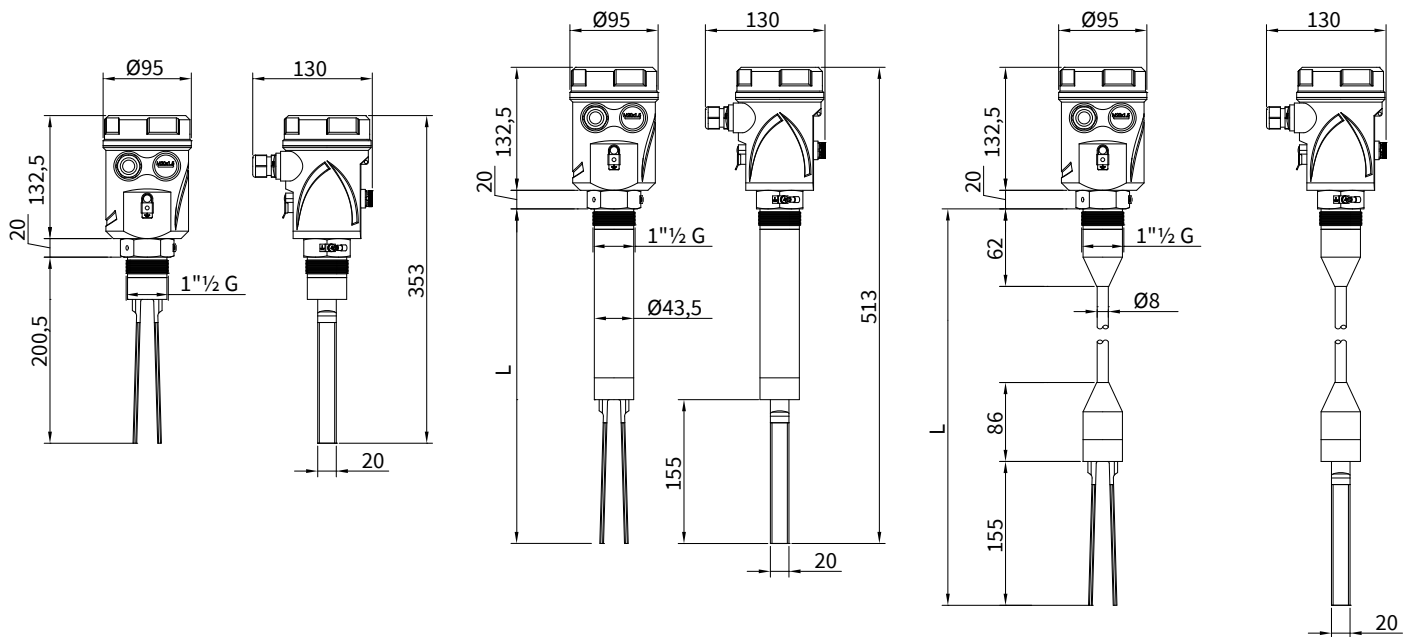
250Vac 5A max

#### Display

Plug-in display/keyboard 4 buttons matrix LCD

#### Certification

ATEX II 1/2D Ex ta/tb IIIC T 150°C Da/Db  
Tamb -20° ÷ +60° IP66



**RSL200**

Diapason level switch for granulates and powders

- Process connection, G 1" 1/2 / SS316
- Fork materiale: SS316
- SPDT relay output
- Product temperature range from -40 to 150°C
- IP66/IP67 mechanical protection
- 0,8W or 15VA max power consumption
- Relay output rating 250Vac, 2A
- Setting by keyboard/display removable module VL601SGM (opt.)

Version	
<b>A</b>	Compact - Insertion length 200,5 mm (fork 155mm)
<b>B</b>	Rigid extension, price each 100mm (max. 3000mm) L=...mm (insertion length included)
<b>G</b>	SS304 semi-flexible extension pipe. Supplied with 1m standard length Price each additional meter eur 21,20
<b>Z</b>	Special
Certification	
<b>0</b>	None
<b>2</b>	ATEX II 1/2D Ex ta/tb IIIC T 150°C Da/Db Tamb -20° ÷ +60°C IP66
Housing	
<b>F</b>	PC with transparent cover and osmotic filter IP67
<b>G</b>	Aluminum varnished with osmotic filter IP67 (compulsory for ATEX version)
<b>L</b>	PC with blind cover and osmotic filter IP67
Power supply	
<b>1</b>	85÷230Vac 50Hz
<b>3</b>	24Vdc/Vac - 36Vac 50Hz
Accessories	
<b>A</b>	None
<b>D</b>	Removable display/programming module (VL601SGM) - necessary for the calibration
<b>H</b>	DN40 PN6 AVP flange (600A016F)



## MLS1 Rotary level switch

Suitable for granulates and powders  
 R 1½" (DIN 2999) threaded connection  
 SPDT relay output  
 IP66 (EN 60529) protection  
 Power supply 24Vdc, or 24Vdc, or 115Vac or 230Vac  
 ATEX certified

MLS1 allows to control the level thresholds of products in powder or granules by means of a rotating blade. Typical applications are the protection of overflow or the control of lack of product (flour, cereals, milk powder, sand, cement, plastic or organic granules, etc.).

### Technical Feature

**IP rating**

IP 66 (EN 60529), NEMA 4

**Process connection**

R 1½" (DIN 2999)

**Housing material**

Aluminum with epoxy paint

**Bearing**

Teflon-coated special bearing

**Gasket**

NBR for radial stem seal

**Transmission protection**

Friction for compensation of mechanical strokes of the blade

**Blade rotation speed**

1 rpm

**Signal delay**

From absence to product presence 1s  
 From product presence to absence 0.2s

**Weight**

1.2Kg approx

**Power supply**

24Vac, o 115Vac o 230Vac ±15%;  
 50/60Hz; 24Vdc ±15%

**Consumption**

AC max. 4VA  
 DC max. 2.5W

**Cable gland**

M20x1.5

**SPDT relay output**

Max. 250Vac, 5A not inductive  
 Max. 30Vdc, 3A not inductive

**Housing temperature range**

-20° ÷ +60°C

**Process temperature range**

-25° ÷ +80°C

**Process pressure**

Max. 0.8bar

**Min. powder density**

> 100 g/l

**Solid grain size**

< 50mm

**Permissible load at rod end**

Max. 300N (with L=150mm)  
 Max. 60N (with L=500)

**Certification**

ATEX II 1/2D Ex Td a20/21 e  
 FM DIP Cl. II, III Div. 1 Gr. E, F, G

**MLS1** Rotary level switch

Suitable for powders and granulates. IP66 protection  
Special PTFE coated bearing. Stem seal in NBR.  
Friction clutch for transmission protection.  
Process connection R 1½" (DIN 2999) in aluminium  
Process temperature -25°:+80°C.  
Min powder density >100g/l. Max solids granulometry <50mm  
Contact alarm output SPDT: 250Vac 5A non inductive -  
30Vdc 3A non-inductive  
Approvals: Ex II1/2D Ex ta/tb III C T\* Da/Db and  
FM DIP Cl. II, III Div.1 Gr. E, F, G

Version	
<b>A</b>	Standard - Length 150mm
<b>Z</b>	Special

Power supply	
<b>1</b>	240 Vac
<b>2</b>	115 Vac
<b>3</b>	24 Vac
<b>4</b>	24 Vdc
<b>9</b>	Special

Extension	
<b>A</b>	None
<b>B</b>	Rigid extension 500 mm
<b>C</b>	Rigid extension 1000 mm
<b>D</b>	Rigid extension 1500 mm
<b>E</b>	Rigid extension 2000 mm
<b>F</b>	Rigid extension 3000 mm
<b>G</b>	Rigid extension 4000 mm
<b>Z</b>	Special

# Electromagnetic

Electromagnetic induction flow meters, commonly referred to as magnetics, are transmitters that are used to measure volumetric flows in conductive liquids.

The meter consists of a sensor tube and an electronic converter.

The principle of operation of electromagnetic flow meters is based on a magnetic field that measures the flow of a conductive fluid (e.g. water) inside a pipe.

Electromagnetic flow transmitters are used extensively to measure the flow rate of conductive liquids in a variety of industries and applications, in the chemical industry, power plants and water treatment plants. They are also employed in drinking water distribution networks to monitor flow and ensure efficient management of water resources.



	RPmag	RKmag	RPmagM	RLmag
<b>Pipe diameter range:</b>	DN10 ÷ DN2000	DN50 ÷ DN800	DN10 ÷ DN250	DN5; DN10; DN15
<b>Measurement field:</b>	0,1 ÷ 110000 m <sup>3</sup> /h	1,5 ÷ 9048 m <sup>3</sup> /h	0,06 ÷ 787,5 m <sup>3</sup> /h	0,04 ÷ 100 l/m
<b>Sensor material:</b>	SS321	SS321	SS321	SS 316L
<b>Lining material:</b>	PTFE DN10 ÷ DN500 neoprene DN65÷DN2000	neoprene	PTFE DN10 ÷ DN250 neoprene DN65÷DN250	PEEK
<b>Process connection:</b>	Flange DIN (UNI 1092-1); Flange ANSI	Flange DIN (UNI 1092-1)	Flange DIN (UNI 1092-1); Flange ANSI	threaded
<b>Housing material:</b>	aluminum	aluminum	aluminum	SS 316L
<b>Electrodes material:</b>	SS316L; Hastelloy C; titanium; tantalum; platinum	SS316L; Hastelloy C	SS316L; Hastelloy C; titanium; tantalum; platinum	SS 316L
<b>Process temperature, remote version:</b>	RUBBER -40 ÷ +80°C; PTFE -40 ÷ +150°C	-20 ÷ +120°C	RUBBER -40 ÷ +80°C; PTFE -40 ÷ +150°C	-
<b>Process temperature, compact version:</b>	RUBBER -40 ÷ +80°C; PTFE -40 ÷ +100°C	-20 ÷ +75°C	RUBBER -40 ÷ +80°C; PTFE -40 ÷ +100°C	-20 ÷ +70°C
<b>Accuracy:</b>	±0,5% / ±0,2%	±0,5% / ±0,2%	Class II ( MID certificate )	±0,8%
<b>Analog output:</b>	4÷20 mA; max. load 750 Ohm	4÷20 mA; max. load 750 Ohm	4÷20 mA; max. load 750 Ohm	4÷20 mA; 0÷20 mA
<b>Analog input:</b>	n° 2 , 4÷20 mA configurable	n° 2 , 4÷20 mA configurable	n° 2 , 4÷20 mA configurable	-
<b>Communication protocol:</b>	MODBUS / BLUETOOTH	MODBUS / BLUETOOTH	MODBUS	-
<b>Pulse output:</b>	open collector 24Vdc pull-up or galvanically isolated	open collector 24Vdc pull-up or galvanically isolated	open collector 24Vdc pull-up or galvanically isolated	open collector 24Vdc pull-up
<b>Alarm output:</b>	n° 2 , relays, 3A 230Vac N.O.	n° 2 , relays, 3A 230Vac N.O.	n° 2 , relays, 3A 230Vac N.O.	PNP / NPN
<b>Datalogger</b>	USB Pen Drive	USB Pen Drive	-	-
<b>Display:</b>	extractable module VL701 with O-LED display	extractable module VL701 with O-LED display	extractable module VL701 with O-LED display	TFT color display
<b>Power supply:</b>	85÷265Vac; 12Vdc; 20÷30Vdc/Vac	85÷265Vac; 12Vdc; 20÷30Vdc/Vac	85÷265Vac; 12Vdc; 20÷30Vdc/Vac	19÷30 Vdc

They are particularly suited to measuring flow rates of corrosive fluids or fluids containing solid particles, since they have no moving mechanical parts in contact with the product to be measured, which reduces wear and fouling. They span a wide range of flow rates and piping dimensions and ensure accurate, stable measurements over time. Electromagnetic flow meters are designed to allow the fluid to flow unobstructed, thereby minimising pressure losses in the system. As a result, flow rates are not significantly affected by the presence of the meter.

They provide good long-term stability and require little maintenance over time and can also measure flow in both positive and negative directions, allowing for greater flexibility in applications.

The many different electromagnetic flow meter models manufactured and supplied by SGM-Lektra make it possible to meet multiple application requirements while guaranteeing accuracy and reliability.



	<b>RSmag</b>	<b>RBKmag</b>	<b>RBmag</b>
<b>Pipe diameter range:</b>	DN10 ÷ DN200	DN50 ÷ DN800	DN10 ÷ DN800
<b>Measurement field:</b>	0,1 ÷ 1100 m <sup>3</sup> /h	1,5 ÷ 9048 m <sup>3</sup> /h	0,1 ÷ 18000 m <sup>3</sup> /h
<b>Sensor material:</b>	SS304	SS321	SS321
<b>Lining material:</b>	PFA	neoprene	PTFE da DN10 a DN500 neoprene dal DN65 al DN800
<b>Process connection:</b>	DIN 11851; CLAMP DIN 32676	Flange DIN (UNI 1092-1)	Flange DIN (UNI 1092-1); Flange ANSI
<b>Housing material:</b>	aluminum	aluminum	aluminum
<b>Electrodes material:</b>	SS316L; Hastelloy C; titanium; tantalum	SS316L; Hastelloy C	SS316L; Hastelloy C; titanium; tantalum; platinum
<b>Process temperature, remote version:</b>	PFA -40 ÷ +180°C;	-20 ÷ +120°C	RUBBER -40 ÷ +80°C; PTFE -40 ÷ +150°C
<b>Process temperature, compact version:</b>	PFA -40 ÷ +100°C;	-20 ÷ +75°C	RUBBER -40 ÷ +80°C; PTFE -40 ÷ +100°C
<b>Accuracy:</b>	±0,5% / ±0,2%	±0,5%	±0,5%
<b>Analog output:</b>	4÷20 mA; max. load 750 Ohm	4÷20 mA passive	4÷20 mA passive
<b>Analog input:</b>	n° 2, 4÷20 mA configurable	-	-
<b>Communication protocol:</b>	MODBUS / BLUETOOTH	MODBUS	MODBUS
<b>Pulse output:</b>	open collector 24Vdc pull-up or galvanically isolated	open collector passive	open collector passive
<b>Alarm output:</b>	n° 2, relays, 3A 230Vac N.O	-	-
<b>Datalogger</b>	USB Pen Drive	-	-
<b>Display:</b>	extractable module VL701 with O-LED display	LCD display	LCD display
<b>Power supply:</b>	85÷265Vac; 12Vdc; 20÷30Vdc/Vac	battery, 6 years autonomy; 12÷24Vdc; external	battery, 6 years autonomy; 12÷24Vdc; external



## RPMAG Electromagnetic flowmeter

- Flow measurement for conductive and chemically aggressive liquids
- Dn from 10 to 2000 mm
- Measurement accuracy:  $\pm 0.2\%$ ;  $\pm 0.5\%$
- Neoprene / PTFE coatings
- Power supply 85÷265Vac; 12Vdc; 20÷30Vdc/Vac
- Datalogger on USB pendrive
- Removable O-LED display module
- Remote control via Smartphone

RPmag flowmeter is suitable for all of applications into “industrial process”. Various materials for lining are available as well as electrodes made of tantalum, hastelloy c, titanium. Most common communication systems such as Modbus, and by means of an app for Android smartphone via Bluetooth. RPMAG has an integrated data logger for the recording of the measurements over time. It consist in an USB pen drive which is inserted behind the removable O-LED display VL701. The recorded data could be stored into a TXT file which is compatible with Excel or other equivalent analisys software packages.

### Technical Feature

#### Flow rate range

Bidirectional on fluids with speeds up to 10m / s

#### Range dimension / lining material

PTFE DN10 ÷ DN500 / RUBBER DN65 ÷ DN2000

#### Sensor pipe material

SS321

#### Housing material

epoxy painted aluminium

#### Electrodes material

SS316L - Hastelloy C - Titanium - Tantalum - Platinum

#### Measure range

$<0,1\text{m}^3/\text{h} \div >110000\text{m}^3/\text{h}$

#### Accuracy

$\pm 0,5\%$  standard;  $\pm 0,2\%$  optional

#### Repeatability

$\pm 0,1\%$

#### Fluid conductivity

$>5\mu\text{S}/\text{cm}$ .

#### Power supply

85÷265Vac; 12Vdc; 20÷30Vdc/Vac

#### Consumption

6W, max. 8W.

#### Communication protocol

Modbus; Bluetooth App Android (opt.);

#### Operating temperature Limits

Remote version

RUBBER -10 ÷ +80°C; PTFE -40 ÷ +150°C

Compact version

RUBBER -10 ÷ +80°C; PTFE -40 ÷ +100°C

Storage temperature: -40÷85°C

#### Data Logger

Internal data logger to USB pen drive

#### Output

4 ÷ 20mA; Frequency; Impulsive; 2 relays

#### Input signals

2 active analog inputs

1 digital input.

#### Reverse Flow

Allows measure and totalization of reverse flow.

#### Low Flow Cutoff

Adjustable. Below selected value, instantaneous flow and outputs are driven to the zero flow rate signal level.

#### Humidity Limits

0-100% RH to 150 °F (65 °C), not condensing.

#### Damping

Adjustable between 1 and 99 seconds.

#### Compact version IP rating

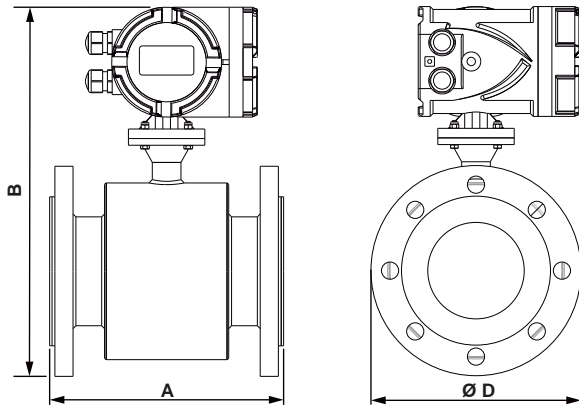
IP67

#### Remote version IP rating

sensor IP67 / IP68 (by request) - converter IP67

#### Anti-condensation filter

Anti-condensation filter installed on converter



DN (mm)	A (mm)	PN 16 - PN 40	
		B (mm)	ØD (mm)
10	200	295	90
15		295	95
20		300	105
25		300	115
32		315	140
40		335	150
50		344	165
65		360	185
80		375	200

DN (mm)	A (mm)	PN 10		PN 16		PN 40	
		B (mm)	ØD (mm)	B (mm)	ØD (mm)	B (mm)	ØD (mm)
100	250	-	-	400	220	410	235
125	250	-	-	420	250	435	270
150	300	-	-	460	285	468	300
200	350	520	340	520	340	538	375
250	450	570	395	575	405	598	450
300	500	620	445	620	460	648	515
350	550	670	505	678	520	708	580
400	600	730	565	738	580	778	660
450	600	780	615	793	640	816	685
500	600	830	670	850	715	870	755
600	600	930	780	960	840	985	890
700	700	1050	895	1080	910	-	-
800	800	1165	1015	1170	1025	-	-
900	900	1270	1115	1275	1125	-	-
1000	1000	1360	1230	1375	1255	-	-

**RPMAG**

Electromagnetic flowmeter

For conductive fluids. With sensor pipe in SS321  
 External sensor and flanges in carbon steel  
 Ambient temperature range: -20° ÷ 60°C  
 Fluid temperature range: -10° ÷ 80°C (with Neoprene lining)  
 -40° ÷ 150°C (with PTFE lining - max 100° for compact versions)  
 IP67 electronic housing with anticondensation filter  
 2 alarm relays (min/max) - 3rd electrode for grounding

Version	
<b>B</b>	Remote - acc. 0,2% - Data logger - n.2 4÷20mA input - std cable length 5m (over 5m eur 7,80/m)
<b>C</b>	Remote - acc. 0,5% - Data logger - n.2 4÷20mA input - std cable length 5m (over 5m eur 7,80/m)
<b>L</b>	Compact - acc. 0,2% - Data logger - n.2 4÷20mA input
<b>N</b>	Compact - acc. 0,5% - Data logger - n.2 4÷20mA input
<b>R</b>	Remote - acc. 0,2% - n.2 4÷20mA input - std cable length 5m (over 5m eur 7,80/m)
<b>S</b>	Remote - acc. 0,5% - n.2 4÷20mA input - std cable length 5m (over 5m eur 7,80/m)
<b>T</b>	Compact - acc. 0,2% - n.2 4÷20mA input
<b>V</b>	Compact - acc. 0,5% - n.2 4÷20mA input
<b>Z</b>	Special

DN flange / Max. pressure / Lining	
<b>0010B2</b>	DN10 / 4.0MPa / PFA - range 0,14 ÷ 2,9m3/h - only 2 electrodes
<b>0015B2</b>	DN15 / 4.0MPa / PTFE - range 0,3 ÷ 6m3/h
<b>0020B2</b>	DN20 / 4.0MPa / PTFE - range 0,5 ÷ 12m3/h
<b>0025B2</b>	DN25 / 4.0MPa / PTFE - range 0,6 ÷ 18m3/h
<b>0032B2</b>	DN32 / 4.0MPa / PTFE - range 1 ÷ 30m3/h
<b>0040B2</b>	DN40 / 4.0MPa / PTFE - range 1,8 ÷ 42m3/h
<b>0050B2</b>	DN50 / 4.0MPa / PTFE - range 3 ÷ 66m3/h
<b>0065B1</b>	DN65 / 4.0MPa / Neoprene - range 5,8 ÷ 120m3/h
<b>0065B2</b>	DN65 / 4.0MPa / PTFE - range 5,8 ÷ 120m3/h
<b>0080B1</b>	DN80 / 4.0MPa / Neoprene - range 8,9 ÷ 180m3/h
<b>0080B2</b>	DN80 / 4.0MPa / PTFE - range 8,9 ÷ 180m3/h
<b>0100B1</b>	DN100 / 4.0MPa / Neoprene - range 11 ÷ 282m3/h
<b>0100B2</b>	DN100 / 4.0MPa / PTFE - range 11 ÷ 282m3/h
<b>0100E1</b>	DN100 / 1.6MPa / Neoprene - range 11 ÷ 282m3/h
<b>0100E2</b>	DN100 / 1.6MPa / PTFE - range 11 ÷ 282m3/h
<b>0125B1</b>	DN125 / 4.0MPa / Neoprene - range 20 ÷ 450m3/h
<b>0125B2</b>	DN125 / 4.0MPa / PTFE - range 20 ÷ 450m3/h
<b>0125E1</b>	DN125 / 1.6MPa / Neoprene - range 20 ÷ 450m3/h
<b>0125E2</b>	DN125 / 1.6MPa / PTFE - range 20 ÷ 450m3/h
<b>0150B1</b>	DN150 / 4.0MPa / Neoprene - range 30 ÷ 600m3/h
<b>0150B2</b>	DN150 / 4.0MPa / PTFE - range 30 ÷ 600m3/h
<b>0150E1</b>	DN150 / 1.6MPa / Neoprene - range 30 ÷ 600m3/h
<b>0150E2</b>	DN150 / 1.6MPa / PTFE - range 30 ÷ 600m3/h
<b>0200C1</b>	DN200 / 1.0MPa / Neoprene - range 50 ÷ 1100m3/h
<b>0200C2</b>	DN200 / 1.0MPa / PTFE - range 50 ÷ 1100m3/h
<b>0200E1</b>	DN200 / 1.6MPa / Neoprene - range 50 ÷ 1100m3/h



<b>0200E2</b>	DN200 / 1.6MPa / PTFE - range 50 ÷ 1100m3/h
<b>0250C1</b>	DN250 / 1.0MPa / Neoprene - range 85 ÷ 1700m3/h
<b>0250C2</b>	DN250 / 1.0MPa / PTFE - range 85 ÷ 1700m3/h
<b>0250E1</b>	DN250 / 1.6MPa / Neoprene - range 85 ÷ 1700m3/h
<b>0250E2</b>	DN250 / 1.6MPa / PTFE - range 85 ÷ 1700m3/h
<b>0300C1</b>	DN300 / 1.0MPa / Neoprene - range 110 ÷ 2400m3/h
<b>0300C2</b>	DN300 / 1.0MPa / PTFE - range 110 ÷ 2400m3/h
<b>0300E1</b>	DN300 / 1.6MPa / Neoprene - range 110 ÷ 2400m3/h
<b>0300E2</b>	DN300 / 1.6MPa / PTFE - range 110 ÷ 2400m3/h
<b>0350C1</b>	DN350 / 1.0MPa / Neoprene - range 180 ÷ 3300m3/h
<b>0350C2</b>	DN350 / 1.0MPa / PTFE - range 180 ÷ 3300m3/h
<b>0350E1</b>	DN350 / 1.6MPa / Neoprene - range 180 ÷ 3300m3/h
<b>0350E2</b>	DN350 / 1.6MPa / PTFE - range 180 ÷ 3300m3/h
<b>0400C1</b>	DN400 / 1.0MPa / Neoprene - range 220 ÷ 4200m3/h
<b>0400C2</b>	DN400 / 1.0MPa / PTFE - range 220 ÷ 4200m3/h
<b>0400E1</b>	DN400 / 1.6MPa / Neoprene - range 220 ÷ 4200m3/h
<b>0400E2</b>	DN400 / 1.6MPa / PTFE - range 220 ÷ 4200m3/h
<b>0450C1</b>	DN450 / 1.0MPa / Neoprene - range 270 ÷ 5400m3/h
<b>0450C2</b>	DN450 / 1.0MPa / PTFE - range 270 ÷ 5400m3/h
<b>0450E1</b>	DN450 / 1.6MPa / Neoprene - range 270 ÷ 5400m3/h
<b>0450E2</b>	DN450 / 1.6MPa / PTFE - range 270 ÷ 5400m3/h
<b>0500C1</b>	DN500 / 1.0MPa / Neoprene - range 320 ÷ 6600m3/h
<b>0500C2</b>	DN500 / 1.0MPa / PTFE - range 320 ÷ 6600m3/h
<b>0500E1</b>	DN500 / 1.6MPa / Neoprene - range 320 ÷ 6600m3/h
<b>0500E2</b>	DN500 / 1.6MPa / PTFE - range 320 ÷ 6600m3/h
<b>0600C1</b>	DN600 / 1.0MPa / Neoprene - range 490 ÷ 9600m3/h
<b>0600E1</b>	DN600 / 1.6MPa / Neoprene - range 490 ÷ 9600m3/h
<b>0700C1</b>	DN700 / 1.0MPa / Neoprene - range 680 ÷ 13500m3/h
<b>0700E1</b>	DN700 / 1.6MPa / Neoprene - range 680 ÷ 13500m3/h
<b>0800C1</b>	DN800 / 1.0MPa / Neoprene - range 900 ÷ 18000m3/h
<b>0800E1</b>	DN800 / 1.6MPa / Neoprene - range 900 ÷ 18000m3/h
<b>0900C1</b>	DN900 / 1.0MPa / Neoprene - range 1200 ÷ 22500m3/h
<b>0900E1</b>	DN900 / 1.6MPa / Neoprene - range 1200 ÷ 22500m3/h
<b>1000C1</b>	DN1000 / 1.0MPa / Neoprene - range 1450 ÷ 28000m3/h
<b>1000E1</b>	DN1000 / 1.6MPa / Neoprene - range 1450 ÷ 28000m3/h
<b>1200D1</b>	DN1200 / 0,6MPa / Neoprene - range 2000 ÷ 40000m3/h
<b>1400D1</b>	DN1400 / 0,6MPa / Neoprene - range 2800 ÷ 55000m3/h
<b>1600D1</b>	DN1600 / 0,6MPa / Neoprene - range 3650 ÷ 65000m3/h
<b>9999Z9</b>	Special

#### Process connection

<b>B</b>	DIN (UNI 1092-1) flange
<b>D</b>	ANSI flange (price on request)
<b>Z</b>	Special

#### Electrodes material

<b>1</b>	SS316L Stainless steel
<b>3</b>	Hastelloy C276
<b>4</b>	Titanium
<b>5</b>	Tantalum
<b>6</b>	Platinum

#### Power supply

<b>A</b>	85÷265Vac
<b>C</b>	20÷30 Vac/Vdc
<b>D</b>	11÷14Vdc
<b>Z</b>	Special

#### Accessories

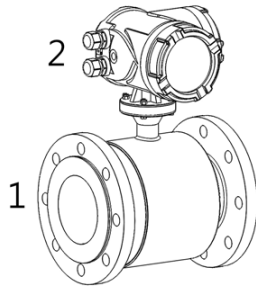
<b>0</b>	None
<b>1</b>	316SS or Hastelloy C grounding rings for plastic pipe installation (prices on MA page)
<b>2</b>	Protective rings against inner lining abrasion (price on request)

#### Output

<b>B</b>	4÷20mA with galvanic separation + pulse + MODBUS RTU + BLUETOOTH
<b>E</b>	4÷20mA with galvanic separation + pulse + MODBUS RTU

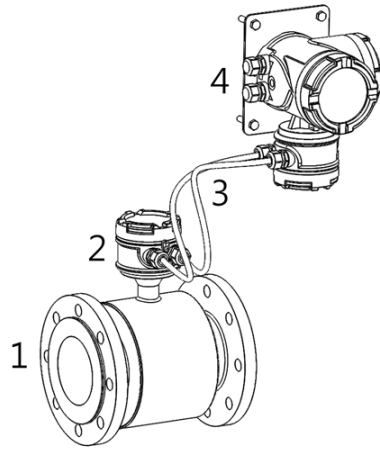
#### Pipe protection degree

<b>1</b>	IP67
<b>2</b>	IP68 (only for remote version)



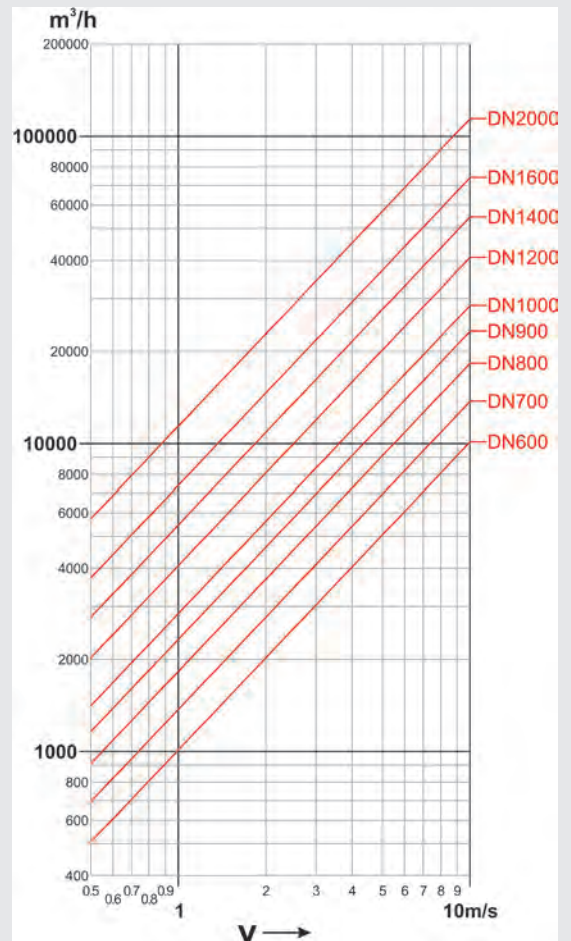
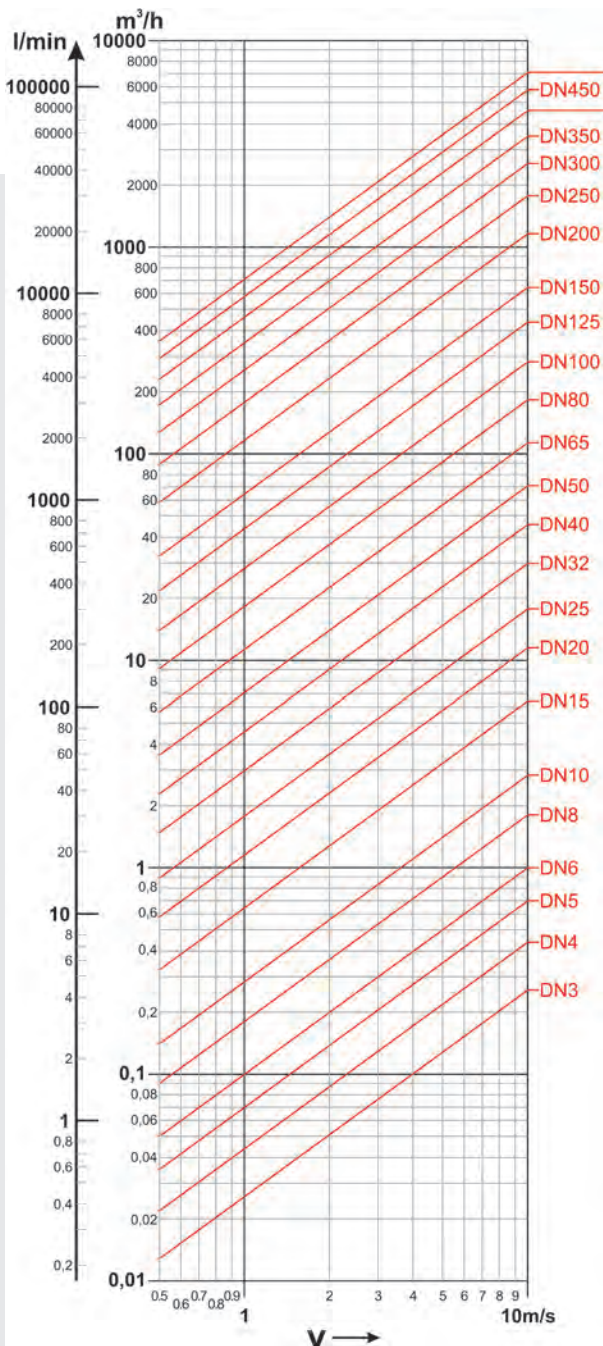
**COMPACT VERSION**

- 1. Sensor
- 2. Converter



**REMOTE VERSION**

- 1. Sensor
- 2. Connection housing
- 3. Connection cables
- 4. Converter, wall mounting





## RKMAG Electromagnetic flowmeter

Specific for installations with “0 diameters” near curves, fittings etc ...

Dn 50 ÷ 800 mm

Accuracy: ± 0.5%

Power supply 85÷265Vac; 12Vdc; 20÷30Vdc/Vac

Remote control via Smartphone

SGM LEKTRA presents a new type of electromagnetic flowmeter with plastic sensors: RKmag. Because of its particular inner shape the mounting of the unit requires no straight pipe lengths before and after the meter. The converter is equipped with a large, bright, removable O-LED display and can mount a pen-drive USB data logger. The configurable outputs can be analogic, pulse and MODBUS RTU and alarm messages are managed by 2 configurable relays. RKmag is suitable for the use with a wide range of conductive liquids, even chemically aggressive: the electrodes material can be selected according to the chemical properties of the fluid.

### Technical Feature

#### Flow rate range

Bidirectional on fluids with speeds up to 10m / s

#### Range dimension / lining material

neoprene DN50 ÷ DN800

#### Sensor pipe material

SS321

#### Housing material

epoxy painted aluminium

#### Electrodes material

SS316L - Hastelloy C

#### Measure range

<1m<sup>3</sup>/h ÷ >9048m<sup>3</sup>/h

#### Accuracy

±0,5% standard; ±0,2% optional

#### Repeatability

±0,1%

#### Fluid conductivity

>5µS/cm.

#### Power supply

85÷265Vac; 12Vdc; 20÷30Vdc/Vac

#### Consumption

6W, max. 8W.

#### Communication protocol

Modbus; Bluetooth App Android (opt.)

#### Operating temperature Limits

Remote version

RUBBER -10 ÷ +80°C

Compact version

RUBBER -10 ÷ +80°C

Storage temperature: -40÷85°C

#### Data Logger

Internal data logger to USB pen drive

#### Output

4 ÷ 20mA; Frequency; Impulsive; 2 relays

#### Input signals

2 active analog inputs

1 digital input.

#### Reverse Flow

Allows measure and totalization of reverse flow.

#### Low Flow Cutoff

Adjustable. Below selected value, instantaneous flow and outputs are driven to the zero flow rate signal level.

#### Humidity Limits

0-100% RH to 150 °F (65 °C), not condensing.

#### Damping

Adjustable between 1 and 99 seconds.

#### Compact version IP rating

IP67

#### Remote version IP rating

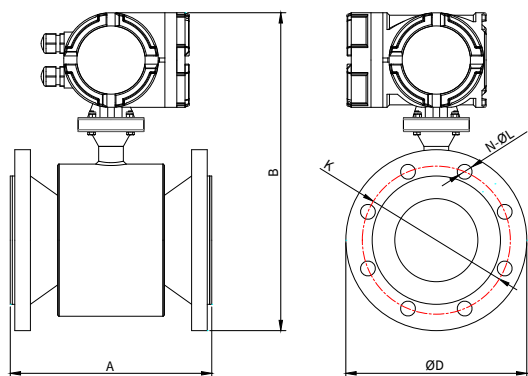
sensor IP67 / IP68 (by request) - converter IP67

#### Anti-condensation filter

Anti-condensation filter installed on converter



# ELECTROMAGNETIC | FLOW MEASUREMENT



DN (mm)	A (mm)	B (mm)	ØD (mm)	ØK (mm)	N-ØL (mm)	Pressure
50	200	340	165	125	4-Ø18	1.6MPa
65	200	345	185	145	4-Ø18	1.6MPa
80	200	360	200	160	8-Ø18	1.6MPa
100	250	385	220	180	8-Ø18	1.6MPa
125	250	400	250	210	8-Ø18	1.6MPa
150	300	430	285	240	8-Ø22	1.6MPa
200	350	470	340	295	12-Ø22	1.6MPa
250	450	535	405	355	12-Ø26	1.6MPa
300	500	600	445	400	12-Ø22	1.0MPa
350	550	650	520	470	16-Ø35	1.0MPa
400	600	715	580	525	16-Ø38	1.0MPa

## RkMag Electromagnetic flowmeter

Installation with zero diameters upstream/downstream.  
 For conductive fluids.  
 With sensor body and flanges in carbon steel.  
 Medium ambient temperature range: -20° ÷ 60°C  
 Fluid temperature range: -10° ÷ 80°C  
 IP67 electronic housing with anticondensation filter  
 2 alarm relays (min/max) - 3rd electrode for grounding

Version	
<b>B</b>	Remote - acc. 0,2% - Data logger - n.2 4÷20mA input - std cable length 5m (over 5m eur 7,80/m)
<b>C</b>	Remote - acc. 0,5% - Data logger - n.2 4÷20mA input - std cable length 5m (over 5m eur 7,80/m)
<b>L</b>	Compact - acc. 0,2% - Data logger - n.2 4÷20mA input
<b>N</b>	Compact - acc. 0,5% - Data logger - n.2 4÷20mA input
<b>R</b>	Remote - acc. 0,2% - n.2 4÷20mA input - std cable length 5m (over 5m eur 7,80/m)
<b>S</b>	Remote - acc. 0,5% - n.2 4÷20mA input - std cable length 5m (over 5m eur 7,80/m)
<b>T</b>	Compact - acc. 0,2% - n.2 4÷20mA input
<b>V</b>	Compact - acc. 0,5% - n.2 4÷20mA input
<b>Z</b>	Special
DN flange / Max. pressure / Lining	
<b>0050E1</b>	DN50 / 1.6MPa / Rubber - range 1,5 ÷ 35m <sup>3</sup> /h
<b>0065E1</b>	DN65 / 1.6MPa / Rubber - range 2,4 ÷ 59m <sup>3</sup> /h
<b>0080E1</b>	DN80 / 1.6MPa / Rubber - range 3,7 ÷ 92m <sup>3</sup> /h
<b>0100E1</b>	DN100 / 1.6MPa / Rubber - range 6 ÷ 141m <sup>3</sup> /h
<b>0125E1</b>	DN125 / 1.6MPa / Rubber - range 9 ÷ 220m <sup>3</sup> /h
<b>0150E1</b>	DN150 / 1.6MPa / Rubber - range 13 ÷ 318m <sup>3</sup> /h
<b>0200E1</b>	DN200 / 1.6MPa / Rubber - range 23 ÷ 565m <sup>3</sup> /h
<b>0250E1</b>	DN250 / 1.6MPa / Rubber - range 35 ÷ 833m <sup>3</sup> /h
<b>0300C1</b>	DN300 / 1.0MPa / Rubber - range 51 ÷ 1272m <sup>3</sup> /h
<b>0300E1</b>	DN300 / 1.6MPa / Rubber - range 51 ÷ 1272m <sup>3</sup> /h
<b>0350C1</b>	DN350 / 1.0MPa / Rubber - range 70 ÷ 1731m <sup>3</sup> /h
<b>0350E1</b>	DN350 / 1.6MPa / Rubber - range 70 ÷ 1731m <sup>3</sup> /h
<b>0400C1</b>	DN400 / 1.0MPa / Rubber - range 90 ÷ 2262m <sup>3</sup> /h
<b>0400E1</b>	DN400 / 1.6MPa / Rubber - range 90 ÷ 2262m <sup>3</sup> /h
<b>0450C1</b>	DN450 / 1.0MPa / Rubber - range 114 ÷ 2863m <sup>3</sup> /h
<b>0450E1</b>	DN450 / 1.6MPa / Rubber - range 114 ÷ 2863m <sup>3</sup> /h
<b>0500C1</b>	DN500 / 1.0MPa / Rubber - range 141 ÷ 3534m <sup>3</sup> /h
<b>0500E1</b>	DN500 / 1.6MPa / Rubber - range 141 ÷ 3534m <sup>3</sup> /h
<b>0600C1</b>	DN600 / 1.0MPa / Rubber - range 203 ÷ 5089m <sup>3</sup> /h
<b>0600E1</b>	DN600 / 1.6MPa / Rubber - range 203 ÷ 5089m <sup>3</sup> /h
<b>0700C1</b>	DN700 / 1.0MPa / Rubber - range 277 ÷ 6927m <sup>3</sup> /h
<b>0700E1</b>	DN700 / 1.6MPa / Rubber - range 277 ÷ 6927m <sup>3</sup> /h
<b>0800C1</b>	DN800 / 1.0MPa / Rubber - range 362 ÷ 9048m <sup>3</sup> /h
<b>0800E1</b>	DN800 / 1.6MPa / Rubber - range 362 ÷ 9048m <sup>3</sup> /h
Process connection	
<b>B</b>	DIN (UNI 1092-1) flanges
<b>D</b>	ANSI flanges (price on request)
<b>Z</b>	Special
Electrodes material	
<b>1</b>	SS316L Stainless steel
<b>3</b>	Hastelloy C276
Power supply	
<b>A</b>	85÷265Vac
<b>C</b>	20÷30 Vac/Vdc
<b>D</b>	11÷14Vdc
Accessories	
<b>0</b>	None
<b>1</b>	316SS or Hastelloy C grounding rings for plastic pipe installation (prices on MA page)
Output	
<b>B</b>	4÷20mA with galvanic separation + pulse + MODBUS RTU + BLUETOOTH
<b>E</b>	4÷20mA with galvanic separation + pulse + MODBUS RTU
Pipe protection degree	
<b>1</b>	IP67
<b>2</b>	IP68 - only for remote version



## RPMAGM MID certified electromagnetic flowmeter

MID certified flow meter

Dn 10 ÷ 250

Accuracy: class II

RUBBER / PTFE lining

Power supply 85÷265Vac; 12Vdc; 20÷30Vdc/Vac

Configuration and displaying via VL701 with O-LED display

The RpmagM product line is suitable for multiple applications in the “industrial process” field. The MID certification according to the 2014/32 / EU directive, and compliant with the OIML49 R - EN14154 - ISO4064 regulations, makes RpmagM suitable for all fiscal uses. In addition to various coating materials, electrodes in hastelloy c, tantalum and titanium are also available. The measurement transmission is possible through MODBUS output, pulse, and 4-20mA. Any notifications can be managed by 2 relays..

### Technical Feature

#### Flow rate range

Bidirectional on fluids with flow rate up to 630 m<sup>3</sup>/h

#### Range dimension / lining material

PTFE DN10 ÷ DN250  
RUBBER DN65 ÷ DN250

#### Sensor material

SS321

#### Housing material

epoxy painted aluminium

#### Electrodes material

SS316L - Hastelloy C - Titanium - Tantalum - Platinum

#### Measure range

R=Q3/Q1 ≤40

#### Accuracy

Class II

#### Repeatability

±0,1%

#### Fluid conductivity

>5µS/cm.

#### Power supply

85÷265Vac; 12Vdc; 20÷30Vdc/Vac

#### Consumption

6W, max. 8W.

#### Temperature class

T50

#### Ambient Temperature Limits

Remote version operating temperature: RUBBER -10 ÷ +80°C; PTFE -40 ÷ +150°C

Compact version operating temperature: RUBBER -10 ÷ +80°C; PTFE -40 ÷ +100°C

Storage temperature: -40÷85°C

#### Communication protocol

Modbus

#### Output

4÷20mA: 0÷500Ω

Frequency output: 0,1÷10000 Hz

Pulse output: 24Vdc galvanically isolated or open collector galvanically isolated 24V 20mA (opt)

Alarm output: 2 relays, 3A 230Vac N.O.

#### Reverse Flow

Allows measure and totalization of reverse flow.

#### Humidity Limits

0-100% RH to 150 °F (65 °C), not condensing.

#### Damping

Adjustable between 1 and 99 seconds.

#### Compact version IP rating

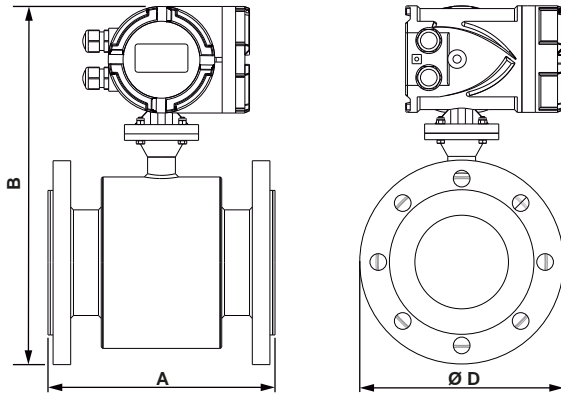
IP67

#### Remote version IP rating

sensor IP67 / IP68 (by request) - converter IP67

#### Anti-condensation filter

Anti-condensation filter installed on converter



DN (mm)	A (mm)	PN 16 - PN 40	
		B (mm)	ØD (mm)
10	200	295	90
15		295	95
20		300	105
25		300	115
32		315	140
40		335	150
50		344	165
65		360	185
80		375	200

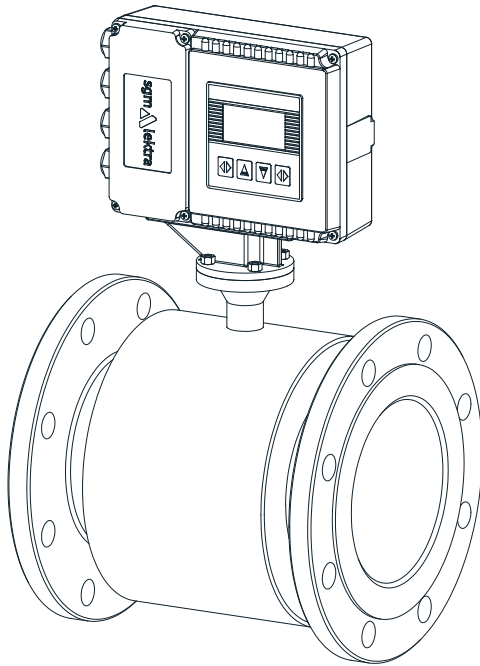
DN (mm)	A (mm)	PN 10		PN 16		PN 40	
		B (mm)	ØD (mm)	B (mm)	ØD (mm)	B (mm)	ØD (mm)
100	250	-	-	400	220	410	235
125	250	-	-	420	250	435	270
150	300	-	-	460	285	468	300
200	350	520	340	520	340	538	375
250	450	570	395	575	405	598	450

**RPmagM**

**Electromagnetic flowmeter MID**

In compliance with directive 2014/32/EU  
 (standard OIML R 49-1/2/3 - EN 14154-1/2/3 - ISO 4064-1/2/5)  
 For conductive waters. Sensor pipe in SS321  
 External sensor and flanges in carbon steel  
 Medium ambient temperature range: -20° ÷ 60°C  
 Fluid temperature range: -10° ÷ 80°C (with Neoprene lining)  
 -40° ÷ 150°C (with PTFE lining)  
 IP67 electronic housing with anticondensation filter  
 2 alarm relays (min/max)

Version	
<b>C</b>	Remote - acc. Class 2 - Temp. Class T50 - cable length 3m - n.2 4÷20mA input
<b>N</b>	Compact - acc. Class 2 - Temp. Class T50 - n.2 4÷20mA input
DN flange / Max. pressure / Lining	
<b>0010E2</b>	DN10 / 1.6MPa / PTFE - range 0,0625 ÷ 2,5 m3/h
<b>0015E2</b>	DN15 / 1.6MPa / PTFE - range 0,1575 ÷ 6,3 m3/h
<b>0020E2</b>	DN20 / 1.6MPa / PTFE - range 0,25 ÷ 10 m3/h
<b>0025E2</b>	DN25 / 1.6MPa / PTFE - range 0,4 ÷ 16 m3/h
<b>0032E2</b>	DN32 / 1.6MPa / PTFE - range 0,625 ÷ 25 m3/h
<b>0040E2</b>	DN40 / 1.6MPa / PTFE - range 1 ÷ 40 m3/h
<b>0050E2</b>	DN50 / 1.6MPa / PTFE - range 1 ÷ 40 m3/h
<b>0065E1</b>	DN65 / 1.6MPa / Neoprene - range 2,5 ÷ 63 m3/h
<b>0065E2</b>	DN65 / 1.6MPa / PTFE - range 2,5 ÷ 63 m3/h
<b>0080E1</b>	DN80 / 1.6MPa / Neoprene - range 4 ÷ 160 m3/h
<b>0080E2</b>	DN80 / 1.6MPa / PTFE - range 4 ÷ 160 m3/h
<b>0100E1</b>	DN100 / 1.6MPa / Neoprene - range 6,25 ÷ 250 m3/h
<b>0100E2</b>	DN100 / 1.6MPa / PTFE - range 6,25 ÷ 250 m3/h
<b>0125E1</b>	DN125 / 1.6MPa / Neoprene - range 6,25 ÷ 250 m3/h
<b>0125E2</b>	DN125 / 1.6MPa / PTFE - range 6,25 ÷ 250 m3/h
<b>0150E1</b>	DN150 / 1.6MPa / Neoprene - range 10 ÷ 400 m3/h
<b>0150E2</b>	DN150 / 1.6MPa / PTFE - range 10 ÷ 400 m3/h
<b>0200E1</b>	DN200 / 1.6MPa / Neoprene - range 15,75 ÷ 630 m3/h
<b>0200E2</b>	DN200 / 1.6MPa / PTFE - range 15,75 ÷ 630 m3/h
<b>0250E1</b>	DN250 / 1.6MPa / Neoprene - range 15,75 ÷ 630 m3/h
<b>0250E2</b>	DN250 / 1.6MPa / PTFE - range 15,75 ÷ 630 m3/h
Process connection	
<b>B</b>	DIN flange (UNI 1092-1)
<b>D</b>	ANSI flange (price on request)
<b>Z</b>	Special
Electrodes material	
<b>1</b>	SS316L stainless steel
<b>3</b>	Hastelloy C
<b>4</b>	Titanium
<b>5</b>	Tantalum
<b>6</b>	Platinum
Power supply	
<b>A</b>	85÷265Vac
<b>B</b>	24Vdc / 24Vac
<b>D</b>	12Vdc
<b>Z</b>	Special
Accessories	
<b>0</b>	None
<b>1</b>	316SS or Hastelloy C grounding rings for plastic pipe installation (price on request)
<b>2</b>	Protective rings against inner lining abrasion (price on request)
<b>3</b>	3rd electrode - price on request
Output	
<b>E</b>	4÷20mA + pulse + MODBUS RTU with galvanic separation
Pipe protection degree	
<b>1</b>	IP67
<b>2</b>	IP68 - only for remote version



## RCMAG

Electromagnetic flowmeter for heavy-duty applications with suspended solids

For heavy-duty applications with suspended solids

Dn from 10 to 2000 mm

Measurement accuracy:  $\pm 0.5\%$

Neoprene / PTFE coatings

Power supply 85+250Vac; 11÷13Vdc; 20+36Vdc/Vac

The RCMag product line adapts to multiple applications in the “industrial process” field for heavy-duty applications such as the paper industry or biogas sewage “. Various materials for lining are available as well as electrodes made of tantalum, hastelloy c, titanium.

### Technical Feature

#### Flow rate range

Bidirectional on fluids with speeds up to 10m / s

#### Range dimension / lining material

PTFE DN10 ÷ DN500 / RUBBER DN65 ÷ DN2000

#### Sensor pipe material

SS321

#### Housing material

epoxy painted aluminium

#### Electrodes material

SS316L - Hastelloy C - Titanium - Tantalum - Platinum

#### Measure range

<0,1m<sup>3</sup>/h ÷ >110000m<sup>3</sup>/h

#### Accuracy

$\pm 0,5\%$

#### Repeatability

$\pm 0,1\%$

#### Fluid conductivity

>20  $\mu\text{S}/\text{cm}$ .

#### Power supply

85 ÷ 250Vac; 20 ÷ 36Vac/Vdc; 11 ÷ 13Vdc

#### Communication protocol

Modbus RTU

#### Operating temp. limits sensor

Remote version  
RUBBER -10 ÷ +80°C; PTFE -40 ÷ +150°C

Compact version

RUBBER -10 ÷ +80°C; PTFE -40 ÷ +100°C

Storage temperature: -40÷85°C

#### Operating temp. limits converter

-20 ÷ 60°C

#### Output

Impulsive: open collector

Analog: 4÷20mA

#### Reverse Flow

Allows measure and totalization of reverse flow.

#### Low Flow Cutoff

Adjustable. Below selected value, instantaneous flow and outputs are driven to the zero flow rate signal level.

#### Humidity Limits

$\leq 95\%$

#### Damping

Adjustable between 1 and 99 seconds.

#### Compact version IP rating

IP65

#### Remote version IP rating

sensor IP67 / IP68 (by request) - converter IP65



**RCMAG**

Electromagnetic flowmeter

For heavy-duty applications with suspended solids.

With sensor pipe in SS321

External sensor and flanges in carbon steel

Ambient temperature range: -10° ÷ 60°C

Fluid temperature range: -10° ÷ 80°C (with Neoprene lining)

-40° ÷ 150°C (with PTFE lining)

IP65 electronic housing - 3rd electrode for grounding

Version	
<b>S</b>	Remote - accuracy 0,5% - std cable length 5m (over 5m eur 7,80/m)
<b>V</b>	>PENDING< Compact - accuracy 0,5%
<b>Z</b>	Special

DN flange / Max. pressure / Lining	
<b>0010B2</b>	DN10 / 4.0MPa / PTFE - range 0,14 ÷ 2,9m3/h - only 2 electrodes
<b>0015B2</b>	DN15 / 4.0MPa / PTFE - range 0,3 ÷ 6m3/h
<b>0020B2</b>	DN20 / 4.0MPa / PTFE - range 0,5 ÷ 12m3/h
<b>0025B2</b>	DN25 / 4.0MPa / PTFE - range 0,6 ÷ 18m3/h
<b>0032B2</b>	DN32 / 4.0MPa / PTFE - range 1 ÷ 30m3/h
<b>0040B2</b>	DN40 / 4.0MPa / PTFE - range 1,8 ÷ 42m3/h
<b>0050B2</b>	DN50 / 4.0MPa / PTFE - range 3 ÷ 66m3/h
<b>0065B1</b>	DN65 / 4.0MPa / Neoprene - range 5,8 ÷ 120m3/h
<b>0065B2</b>	DN65 / 4.0MPa / PTFE - range 5,8 ÷ 120m3/h
<b>0080B1</b>	DN80 / 4.0MPa / Neoprene - range 8,9 ÷ 180m3/h
<b>0080B2</b>	DN80 / 4.0MPa / PTFE - range 8,9 ÷ 180m3/h
<b>0100B1</b>	DN100 / 4.0MPa / Neoprene - range 11 ÷ 282m3/h
<b>0100B2</b>	DN100 / 4.0MPa / PTFE - range 11 ÷ 282m3/h
<b>0100E1</b>	DN100 / 1.6MPa / Neoprene - range 11 ÷ 282m3/h
<b>0100E2</b>	DN100 / 1.6MPa / PTFE - range 11 ÷ 282m3/h
<b>0125B1</b>	DN125 / 4.0MPa / Neoprene - range 20 ÷ 450m3/h
<b>0125B2</b>	DN125 / 4.0MPa / PTFE - range 20 ÷ 450m3/h
<b>0125E1</b>	DN125 / 1.6MPa / Neoprene - range 20 ÷ 450m3/h
<b>0125E2</b>	DN125 / 1.6MPa / PTFE - range 20 ÷ 450m3/h
<b>0150B1</b>	DN150 / 4.0MPa / Neoprene - range 30 ÷ 600m3/h
<b>0150B2</b>	DN150 / 4.0MPa / PTFE - range 30 ÷ 600m3/h
<b>0150E1</b>	DN150 / 1.6MPa / Neoprene - range 30 ÷ 600m3/h
<b>0150E2</b>	DN150 / 1.6MPa / PTFE - range 30 ÷ 600m3/h
<b>0200C1</b>	DN200 / 1.0MPa / Neoprene - range 50 ÷ 1100m3/h
<b>0200C2</b>	DN200 / 1.0MPa / PTFE - range 50 ÷ 1100m3/h
<b>0200E1</b>	DN200 / 1.6MPa / Neoprene - range 50 ÷ 1100m3/h
<b>0200E2</b>	DN200 / 1.6MPa / PTFE - range 50 ÷ 1100m3/h
<b>0250C1</b>	DN250 / 1.0MPa / Neoprene - range 85 ÷ 1700m3/h
<b>0250C2</b>	DN250 / 1.0MPa / PTFE - range 85 ÷ 1700m3/h



<b>0250E1</b>	DN250 / 1.6MPa / Neoprene - range 85 ÷ 1700m <sup>3</sup> /h
<b>0250E2</b>	DN250 / 1.6MPa / PTFE - range 85 ÷ 1700m <sup>3</sup> /h
<b>0300C1</b>	DN300 / 1.0MPa / Neoprene - range 110 ÷ 2400m <sup>3</sup> /h
<b>0300C2</b>	DN300 / 1.0MPa / PTFE - range 110 ÷ 2400m <sup>3</sup> /h
<b>0300E1</b>	DN300 / 1.6MPa / Neoprene - range 110 ÷ 2400m <sup>3</sup> /h
<b>0300E2</b>	DN300 / 1.6MPa / PTFE - range 110 ÷ 2400m <sup>3</sup> /h
<b>0350C1</b>	DN350 / 1.0MPa / Neoprene - range 180 ÷ 3300m <sup>3</sup> /h
<b>0350C2</b>	DN350 / 1.0MPa / PTFE - range 180 ÷ 3300m <sup>3</sup> /h
<b>0350E1</b>	DN350 / 1.6MPa / Neoprene - range 180 ÷ 3300m <sup>3</sup> /h
<b>0350E2</b>	DN350 / 1.6MPa / PTFE - range 180 ÷ 3300m <sup>3</sup> /h
<b>0400C1</b>	DN400 / 1.0MPa / Neoprene - range 220 ÷ 4200m <sup>3</sup> /h
<b>0400C2</b>	DN400 / 1.0MPa / PTFE - range 220 ÷ 4200m <sup>3</sup> /h
<b>0400E1</b>	DN400 / 1.6MPa / Neoprene - range 220 ÷ 4200m <sup>3</sup> /h
<b>0400E2</b>	DN400 / 1.6MPa / PTFE - range 220 ÷ 4200m <sup>3</sup> /h
<b>0450C1</b>	DN450 / 1.0MPa / Neoprene - range 270 ÷ 5400m <sup>3</sup> /h
<b>0450C2</b>	DN450 / 1.0MPa / PTFE - range 270 ÷ 5400m <sup>3</sup> /h
<b>0450E1</b>	DN450 / 1.6MPa / Neoprene - range 270 ÷ 5400m <sup>3</sup> /h
<b>0450E2</b>	DN450 / 1.6MPa / PTFE - range 270 ÷ 5400m <sup>3</sup> /h
<b>0500C1</b>	DN500 / 1.0MPa / Neoprene - range 320 ÷ 6600m <sup>3</sup> /h
<b>0500C2</b>	DN500 / 1.0MPa / PTFE - range 320 ÷ 6600m <sup>3</sup> /h
<b>0500E1</b>	DN500 / 1.6MPa / Neoprene - range 320 ÷ 6600m <sup>3</sup> /h
<b>0500E2</b>	DN500 / 1.6MPa / PTFE - range 320 ÷ 6600m <sup>3</sup> /h
<b>0600C1</b>	DN600 / 1.0MPa / Neoprene - range 490 ÷ 9600m <sup>3</sup> /h
<b>0600E1</b>	DN600 / 1.6MPa / Neoprene - range 490 ÷ 9600m <sup>3</sup> /h
<b>0700C1</b>	DN700 / 1.0MPa / Neoprene - range 680 ÷ 13500m <sup>3</sup> /h
<b>0700E1</b>	DN700 / 1.6MPa / Neoprene - range 680 ÷ 13500m <sup>3</sup> /h
<b>0800C1</b>	DN800 / 1.0MPa / Neoprene - range 900 ÷ 18000m <sup>3</sup> /h
<b>0800E1</b>	DN800 / 1.6MPa / Neoprene - range 900 ÷ 18000m <sup>3</sup> /h
<b>0900C1</b>	DN900 / 1.0MPa / Neoprene - range 1200 ÷ 22500m <sup>3</sup> /h
<b>0900E1</b>	DN900 / 1.6MPa / Neoprene - range 1200 ÷ 22500m <sup>3</sup> /h
<b>1000C1</b>	DN1000 / 1.0MPa / Neoprene - range 1450 ÷ 28000m <sup>3</sup> /h
<b>1000E1</b>	DN1000 / 1.6MPa / Neoprene - range 1450 ÷ 28000m <sup>3</sup> /h
<b>1200D1</b>	DN1200 / 0,6MPa / Neoprene - range 2000 ÷ 40000m <sup>3</sup> /h
<b>1400D1</b>	DN1400 / 0,6MPa / Neoprene - range 2800 ÷ 55000m <sup>3</sup> /h
<b>1600D1</b>	DN1600 / 0,6MPa / Neoprene - range 3650 ÷ 65000m <sup>3</sup> /h

**Process connection**

<b>B</b>	DIN (UNI 1092-1) flange
<b>D</b>	ANSI flange (price on request)
<b>Z</b>	Special

**Electrodes material**

<b>1</b>	SS316L Stainless steel
<b>3</b>	Hastelloy C276
<b>4</b>	Titanium
<b>5</b>	Tantalum
<b>6</b>	Platinum

**Power supply**

<b>A</b>	85÷250Vac
<b>C</b>	20÷36 Vac/Vdc
<b>D</b>	11÷13Vdc
<b>Z</b>	Special

**Accessories**

<b>0</b>	None
<b>1</b>	316SS or Hastelloy C grounding rings for plastic pipe installation (prices on MA page)
<b>2</b>	Protective rings against inner lining abrasion (price on request)

**Output**

<b>E</b>	4÷20mA with galvanic separation + pulse + MODBUS RTU
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**Pipe protection degree**

<b>1</b>	IP67
<b>2</b>	IP68 - only for remote version





## RLMAG Electromagnetic flowmeter

- Flow rate and temperature measurement
- Accuracy  $<(\pm 0.8\%$  of the measured value + 0.5% of full scale)
- Measuring body totally in AISI 316L
- Internal coating in PEEK
- Fully configurable measurement, monitoring and dosing functions
- Bidirectional measurement
- Max pressure 16bar; max. temperature 70 ° C
- Threaded process connections
- Color display with 90 ° rotation display

Measuring device suitable for measuring values from a minimum of 0.04l / m (DN5) up to a maximum of 100l / m (DN15). The body totally in AISI 316L makes or instrument suitable also for chemical / food applications. The reduced dimensions and the variety of threaded connections allow an easy and quick mechanical installation. Rotating the display of the TFT display allows horizontal or vertical mounting orientation..

### Technical Feature

#### Range of flow

Processing of signals coming from fluids with speeds up to 10m / s in both directions (bidirectional meter)

#### Process Connection / Internal Dimension

- G ½ “/ 5mm
- G ¾ “/ 10mm
- G 1 “/ 15mm

#### Internal lining material

PEEK

#### Sensor body material

AISI 316L

#### Electrode material

AISI 316L

#### Measuring range

0.04l / m to 100l / m

#### Accuracy

$<(\pm 0.8\%$  of the measured value + 0.5% of the full scale)

#### Electrical connection

4-pin M12x1 connector

#### Repeatability

$\pm 0.2\%$  of full scale

#### Supply voltage

19 ÷ 30Vdc

#### Consumption

Max. 200mA

#### Temperature range

Process temperature: -20 ÷ + 70 ° C

Ambient temperature: -20 ÷ + 60 °

#### Output signals

max N.2 outgoing connections configurable separately as:

Analogue output 4 ÷ 20mA, or 0 ÷ 20mA with max 500Ω / 0 ÷ 10V

Configurable pulse output

Output frequency max 1000Hz (2000Hz alarm overflow)

PNP alarm output, or configurable

NPN; max 30Vdc 200mA

Control input max 30Vdc

Dosing control output for START-STOP-RESEmeasurable

#### Reverse flow

Instant measurement and total reverse flow

#### Flow measurement simulation

Various flow measurement simulation modes are available

#### Range cutoff

Adjustable. Below the set value the display of the instantaneous flow and the outputs are forced to zero.

#### Relative humidity

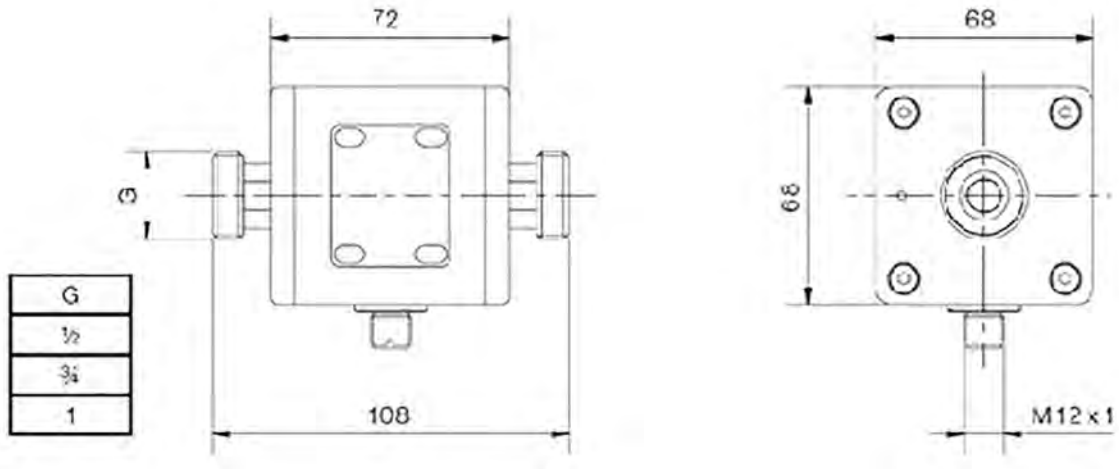
40 ÷ 100% RH at 65 ° C, without condensation

#### Response time for alarm outputs (integration)

Adjustable between 0 and 6 seconds

#### Protection

IP67



**Rimag**                      Electromagnetic flowmeter

For conductive fluids (>20µS) - Sensor body in SS316L  
 Ambient temperature -20° ÷ +60°C  
 Protection IP67 - 2 configurable outputs  
 TFT color display 1.4" with ±90° rotation  
 Dosing, measuring and monitoring functions  
 Supplied with 5m pre-wired cable + female connector

<b>Version</b>	
<b>Y</b>	Compact - accuracy ±0,8% - Max temperature of the fluid +70°C
<b>Thread / DN / Max. pressure / Lining</b>	
<b>0005E5</b>	G ½" / DN05 / 1,6MPa / PEEK (-20° ÷ +70°C) - Range 0,04 ÷ 10 l/m
<b>0010E5</b>	G ¾" / DN10 / 1,6MPa / PEEK (-20° ÷ +70°C) - Range 0,2 ÷ 50 l/m
<b>0015E5</b>	G 1" / DN15 / 1,6MPa / PEEK (-20° ÷ +70°C) - Range 0,4 ÷ 100 l/m
<b>9999Z9</b>	Special
<b>Process connection</b>	
<b>A</b>	Standard gas threaded
<b>Z</b>	Special
<b>Electrodes material</b>	
<b>1</b>	SS316L
<b>Power supply</b>	
<b>B</b>	19÷30Vdc
<b>Accessories</b>	
<b>0</b>	None
<b>9</b>	Special
<b>Output</b>	
<b>A</b>	4÷20mA / Pulse / Frequency / Alarm configurable
<b>Pipe protection degree</b>	
<b>1</b>	IP67



## RSMAG Electromagnetic flowmeter

Flow measurement for conductive liquids

Dn from 10 to 200 mm

Connections DIN 11851 and CLAMP DIN 32676

Measurement accuracy:  $\pm 0.2\%$ ;  $\pm 0.5\%$

PFA coatings

Power supply 85÷265Vac; 12Vdc; 20÷30Vdc/Vac

Datalogger on USB pendrive

Removable O-LED display module

Remote control via Smartphone

RSMag flowmeters are suitable for applications in food and pharmaceutical industries. DIN or Clamp ISO 2852 process connection are suitable for applications with milk, beer or other drinks. Manufactured completely in stainless steel with the option for PFA lining makes RSMag suitable for pharmaceutical application.

### Technical Feature

#### Flow rate range

Bidirectional on fluids with speeds up to 10m / s

#### Range dimension / lining material

PFA DN10 ÷ DN200

#### Sensor pipe material

SS304

#### Housing material

epoxy painted aluminum

#### Electrodes material

SS316L - Hastelloy C - Titanium - Tantalum

#### Measure range

<0,3m<sup>3</sup>/h ÷ >1100m<sup>3</sup>/h

#### Accuracy

$\pm 0,5\%$  standard;  $\pm 0,2\%$  opt

#### Repeatability

$\pm 0,1\%$

#### Fluid conductivity

>5 $\mu$ S/cm

#### Power supply

85÷265Vac; 12Vdc; 20÷30Vdc/Vac

#### Consumption

6W, max. 8W.

#### Temperature range

Remote version operating temperature: -40÷150°C

Compact version operating temperature: -40÷100°C

Storage temperature: -40÷85°C

#### Communication

modbus

#### Data Logger

Internal data logger to USB pen drive

#### Output

4 ÷ 20mA; Frequency; Impulsive; 2 relays

#### Input signals

2 active analog inputs

1 digital input.

#### Reverse Flow

Allows measure and totalization of reverse flow

#### Low Flow Cutoff

Adjustable. Below selected value, instantaneous flow and outputs are driven to the zero flow rate signal level

#### Humidity Limits

0-100% RH to 150 °F (65 °C), not condensing.

#### Damping

Adjustable between 1 and 99 seconds

#### Compact version IP rating

IP67

#### Remote version IP rating

sensor IP67 / IP68 (by request) - converter IP67

#### Anti-condensation filter

Anti-condensation filter installed on converter



**Rsmag** Electromagnetic Flowmeter

For conductive fluids even with a content of suspended matters.  
 With sensor body in SS304  
 For chemical/pharmaceutical and food applications  
 Ambient temperature range: -20°C ÷ 60°C  
 Fluid temperature range: -40° ÷ 180°C (max 100° for compact versions)  
 IP67 electronic housing with osmotic filter  
 2 alarm relays (min/max) - 3rd electrode for grounding

Version	
<b>B</b>	Remote - acc. 0,2% - Data logger - n.2 4÷20mA input - standard cable length 5m (over 5m eur 7,80/m)
<b>C</b>	Remote - acc. 0,5% - Data logger - n.2 4÷20mA input - standard cable length 5m (over 5m eur 7,80/m)
<b>L</b>	Compact - acc. 0,2% - Data logger - n.2 4÷20mA input
<b>N</b>	Compact - acc. 0,5% - Data logger - n.2 4÷20mA input
<b>R</b>	Remote - acc. 0,2% - n.2 4÷20mA input - standard cable length 5m (over 5m eur 7,80/m)
<b>S</b>	Remote - acc. 0,5% - n.2 4÷20mA input - standard cable length 5m (over 5m eur 7,80/m)
<b>T</b>	Compact - acc. 0,2% - n.2 4÷20mA input
<b>V</b>	Compact - acc. 0,5% - n.2 4÷20mA input
<b>Z</b>	Special
DN flange / Max. pressure / Lining	
<b>0010E2</b>	DN10 / 1.6MPa / PFA - range 0,14 ÷ 2,9m3/h
<b>0015E2</b>	DN15 / 1.6MPa / PFA - range 0,3 ÷ 6m3/h
<b>0020E2</b>	DN20 / 1.6MPa / PFA - range 0,5 ÷ 12m3/h
<b>0025E2</b>	DN25 / 1.6MPa / PFA - range 0,6 ÷ 18m3/h
<b>0032E2</b>	DN32 / 1.6MPa / PFA - range 1 ÷ 30m3/h
<b>0040E2</b>	DN40 / 1.6MPa / PFA - range 1,8 ÷ 42m3/h
<b>0050E2</b>	DN50 / 1.6MPa / PFA - range 3 ÷ 66m3/h
<b>0065E2</b>	DN65 / 1.6MPa / PFA - range 5,8 ÷ 120m3/h
<b>0080E2</b>	DN80 / 1.6MPa / PFA - range 8,9 ÷ 180m3/h
<b>0100E2</b>	DN100 / 1.6MPa / PFA - range 11 ÷ 282m3/h
<b>0125E2</b>	DN125 / 1.6MPa / PFA - range 20 ÷ 450m3/h
<b>0150E2</b>	DN150 / 1.6MPa / PFA - range 30 ÷ 600m3/h
<b>0200E2</b>	DN200 / 1.6MPa / PFA - range 50 ÷ 1100m3/h - only with connection E (CLAMP)
Process connection	
<b>D</b>	DIN 11851 - 2.5 Mpa
<b>E</b>	SS304 CLAMP DIN 32676 - 1.6 Mpa
<b>Z</b>	Special
Electrodes material	
<b>1</b>	SS316L stainless steel
<b>3</b>	Hastelloy C276
<b>4</b>	Titanium
<b>5</b>	Tantalum
<b>9</b>	Special
Power supply	
<b>A</b>	85÷265Vac
<b>C</b>	20÷30 Vac/Vdc
<b>D</b>	12Vdc
<b>Z</b>	Special
Accessories	
<b>0</b>	None
Output	
<b>B</b>	4÷20mA with galvanic separation + pulse + MODBUS RTU + BLUETOOTH
<b>E</b>	4÷20mA + pulse + MODBUS RTU - with galvanic separation
Pipe protection degree	
<b>1</b>	IP67
<b>2</b>	IP68 (only for remote version)



## RBKMAG Electromagnetic flowmeter

Specific for installations with “0 diameters” near curves, fittings etc ...

Dn 50 ÷ 800 mm

Accuracy:  $\pm 0.2\% \pm 0.5\%$

ABS sensor and lining

Battery powered, 6 years battery life; 12÷24Vdc

Battery-powered RBKmag flowmeters do not require external power supply, therefore they are a valid alternative to conventional mechanical measuring systems and in isolated applications without power supply.

RBKmag thanks to the particular internal geometry is less influenced by the proximity of disturbing elements such as fittings, curves etc. and can therefore be installed at “ZERO DIAMETERS”. The RBKmag meter is suitable for use with a wide range of conductive liquids, also chemically aggressive, thanks to the possibility of selecting the most suitable electrode material for the application..

### Technical Feature

#### Flow rate range

RBKMAG is able to process signals from fluids with flow rates of up to 10m<sup>3</sup> / s in both directions (bidirectional meter).

#### Range dimension / lining material

DN50 ÷ DN800 | RUBBER

#### Sensor material

SS321

#### Electronic housing material

SS316 | ABS

#### Electrodes material

SS316L - Hastelloy C

#### Measure range

<0.9m<sup>3</sup>/h ÷ >9048m<sup>3</sup>/h

#### Accuracy

$\pm 0,5\%$  standard;

#### Repeatability

$\pm 0,1\%$

#### Fluid conductivity

>5 $\mu$ S/cm.

#### Power supply

Battery, 6 years life; 12÷24Vdc

#### Operating temperature Limits

Remote version

-10 ÷ +80°C

Compact version

-10 ÷ +80°C

Storage temperature: -40÷85°C

#### Communication protocol

Modbus RTU

#### Output

Frequency: 0,1÷5000 Hz

Pulse: open collector

#### Reverse Flow

Allows measure and totalization of reverse flow

#### Output test

Frequency output: the transmitter can force the output signal from 0.1 to 5000 Hz to a test value.

#### Startup time

0.5s from zero flow.

#### Cutoff

Adjustable 0.0 ÷ 9.9% of the Qmax. Below the set value the display of the instantaneous flow and the outputs are forced to zero.

#### Humidity Limits

0-100% RH to 150 °F (65 °C), not condensing.

#### Damping

Adjustable between 1 and 99 seconds.

#### Compact version IP rating

IP67

#### Remote version IP rating

sensor IP67 / IP68 (by request) - converter IP67

#### Anti-condensation filter

Anti-condensation filter installed on converter



**Rbkmag** Battery electromagnetic flowmeter

Zero diameter mounting.  
 For conductive fluids. With sensor pipe in SS321  
 External sensor and flanges in carbon steel  
 Medium ambient temperature range: -20° ÷ 50°C  
 Fluid temperature range: -10° ÷ 80°C  
 Calibration via remote control  
 3rd electrode for grounding

Version	
<b>A</b>	Remote - accuracy 0,5% - standard cables 5m (over 5m eur 7,80/m - max 50m)
<b>D</b>	Remote - accuracy 0,5% - with integrated GPRS antenna - standard cables 5m (over 5m eur 7,80/m - max 50m)
<b>G</b>	Remote - accuracy 0,5% - with separate GPRS antenna - standard cables 5m (over 5m eur 7,80/m - max 50m)
<b>H</b>	Compact - accuracy 0,5%
<b>P</b>	Compact - accuracy 0,5% - with integrated GPRS antenna
<b>R</b>	Compact - accuracy 0,5% - with separate GPRS antenna
DN flange / Max. pressure / Lining	
<b>0050E1</b>	DN50 / 1.6MPa / Neoprene - range 1,5 ÷ 35m <sup>3</sup> /h
<b>0065E1</b>	DN65 / 1.6MPa / Neoprene - range 2,4 ÷ 59m <sup>3</sup> /h
<b>0080E1</b>	DN80 / 1.6MPa / Neoprene - range 3,7 ÷ 92m <sup>3</sup> /h
<b>0100E1</b>	DN100 / 1.6MPa / Neoprene - range 6 ÷ 141m <sup>3</sup> /h
<b>0125E1</b>	DN125 / 1.6MPa / Neoprene - range 9 ÷ 220m <sup>3</sup> /h
<b>0150E1</b>	DN150 / 1.6MPa / Neoprene - range 13 ÷ 318m <sup>3</sup> /h
<b>0200E1</b>	DN200 / 1.6MPa / Neoprene - range 23 ÷ 565m <sup>3</sup> /h
<b>0250E1</b>	DN250 / 1.6MPa / Neoprene - range 35 ÷ 833m <sup>3</sup> /h
<b>0300C1</b>	DN300 / 1.0MPa / Neoprene - range 51 ÷ 1272m <sup>3</sup> /h
<b>0300E1</b>	DN300 / 1.6MPa / Neoprene - range 51 ÷ 1272m <sup>3</sup> /h
<b>0350C1</b>	DN350 / 1.0MPa / Neoprene - range 70 ÷ 1731m <sup>3</sup> /h
<b>0350E1</b>	DN350 / 1.6MPa / Neoprene - range 70 ÷ 1731m <sup>3</sup> /h
<b>0400C1</b>	DN400 / 1.0MPa / Neoprene - range 90 ÷ 2262m <sup>3</sup> /h
<b>0400E1</b>	DN400 / 1.6MPa / Neoprene - range 90 ÷ 2262m <sup>3</sup> /h
<b>0450C1</b>	DN450 / 1.0MPa / Neoprene - range 114 ÷ 2863m <sup>3</sup> /h
<b>0450E1</b>	DN450 / 1.6MPa / Neoprene - range 114 ÷ 2863m <sup>3</sup> /h
<b>0500C1</b>	DN500 / 1.0MPa / Neoprene - range 141 ÷ 3534m <sup>3</sup> /h
<b>0500E1</b>	DN500 / 1.6MPa / Neoprene - range 141 ÷ 3534m <sup>3</sup> /h
<b>0600C1</b>	DN600 / 1.0MPa / Neoprene - range 203 ÷ 5089m <sup>3</sup> /h
<b>0600E1</b>	DN600 / 1.6MPa / Neoprene - range 203 ÷ 5089m <sup>3</sup> /h
<b>0700C1</b>	DN700 / 1.0MPa / Neoprene - range 277 ÷ 6927m <sup>3</sup> /h
<b>0700E1</b>	DN700 / 1.6MPa / Neoprene - range 277 ÷ 6927m <sup>3</sup> /h
<b>0800C1</b>	DN800 / 1.0MPa / Neoprene - range 362 ÷ 9048m <sup>3</sup> /h
<b>0800E1</b>	DN800 / 1.6MPa / Neoprene - range 362 ÷ 9048m <sup>3</sup> /h
Process connection	
<b>B</b>	DIN flanges - UNI 1092-1
<b>D</b>	ANSI flanges (price on request)
<b>Z</b>	Special
Electrodes material	
<b>1</b>	SS316L
<b>3</b>	Hastelloy C276
Power supply	
<b>D</b>	Battery - 6 years life
<b>E</b>	Battery (6 years life) + 12÷24Vdc external supply
Accessories	
<b>0</b>	None
<b>1</b>	316SS or Hastelloy C grounding rings for plastic pipe installation (prices on MA page)
<b>5</b>	Data logger on SD card
Output	
<b>A</b>	Pulse
<b>E</b>	Pulse + MODBUS (not with GPRS)
<b>F</b>	Pulse output + 4÷20mA (not with GPRS)
<b>G</b>	Pulse output + 4÷20mA + MODBUS (not with GPRS)
<b>N</b>	None
Protection degree	
<b>3</b>	IP68 (compact version - with data logger accessory -> IP67)
<b>4</b>	Converter IP67 / Sensor IP67 (remote version)
<b>5</b>	Converter IP67 / Sensor IP68 (remote version)
<b>6</b>	Converter IP68 (with data logger accessory -> IP67) / Sensor IP68 (remote version)





## RBMAG Electromagnetic flowmeter

Flow measurement for conductive liquids  
 Measurement range DN10 ÷ 800  
 Measurement accuracy: ± 0.5%  
 GPRS data transmission  
 Battery powered, 6 years autonomy; 12÷24Vdc  
 Analog, impulsive and MODBUS RTU outputs  
 Parameter programming via remote module  
 IP68 protection

Battery powered RBmag meters do not require an external power supply, therefore they are a valid alternative to conventional mechanical measuring systems and in isolated applications without power supply..

### Technical Feature

#### Flow range

Processing of signals from fluids with speeds up to 10m / s in both directions (bidirectional meter)

#### Lining material / range size

PTFE DN10 -; DN500  
 RUBBER DN65 -; DN800

#### Sensor material

SS321

#### Electronic housing material

SS316 | ABS

#### Electrodes material

SS316L - Hastelloy C - Titanium - Tantalum - Platinum

#### Measuring range

<0.1m<sup>3</sup> / h -; > 18000m<sup>3</sup> / h

#### Accuracy

± 0.5% standard

#### Repeatability

± 0.1%

#### Fluid conductivity

at least 20 microsiemens / cm

#### Power supply voltage

Battery, 6 years life; 12÷24Vdc

#### Sensor tube temperature range

Process temp. Vers. remote: rubber

-10 -; + 80 ° C;

PTFE -40 -; + 150 ° C

Process temp. Vers. compact: rubber

-10 -; + 80 ° C;

PTFE -40 -; + 100 ° C

#### Storage temperature

-40-; 85 ° C

#### Electronic converter temperature range

-20 ° ÷ + 50 ° C

#### Communication protocol

Modbus (opt.)

#### Output signals

Impulsive: open collector

Analogue 4 ÷ 20mA

#### Reverse flow

Instantaneous measurement and totalisation of the reverse flow

#### Scope cutoff

Adjustable in units of flow measurement. Below the set value, the instantaneous flow is displayed and the outputs are forced to zero.

#### Relative humidity

<= 95% RH

#### Response time (integration)

Adjustable between 0.1 and 99 seconds

#### Compact version protection

IP68

#### Remote version protection

IP67 / IP68 sensor (on request)

IP67 / IP68 converter



**RBMAG** Battery electromagnetic flowmeter

For conductive fluids. With sensor pipe in SS321  
 External sensor and flanges in carbon steel  
 Medium ambient temperature range: -20° ÷ 50°C  
 Fluid temperature range: -10° ÷ 80°C (with Neoprene lining)  
 -40° ÷ 150°C (with PTFE lining - max 100° for compact versions)  
 3rd electrode for grounding

Version	
<b>A</b>	Remote - accuracy 0,5% - standard cables 5m (over 5m eur 7,80/m - max 50m)
<b>D</b>	Remote - accuracy 0,5% - with integrated GPRS antenna - standard cables 5m (over 5m eur 7,80/m - max 50m)
<b>G</b>	Remote - accuracy 0,5% - with separate GPRS antenna - standard cables 5m (over 5m eur 7,80/m - max 50m)
<b>H</b>	Compact - accuracy 0,5%
<b>P</b>	Compact - accuracy 0,5% - with integrated GPRS antenna
<b>R</b>	Compact - accuracy 0,5% - with separate GPRS antenna
<b>Z</b>	Special

DN flange / Max. pressure / Lining	
<b>0010B2</b>	DN10 / 4.0MPa / PTFE; range 0,14 ÷ 2,9m3/h - 2 electrodes only
<b>0015B2</b>	DN15 / 4.0MPa / PTFE; range 0,3 ÷ 6m3/h
<b>0020B2</b>	DN20 / 4.0MPa / PTFE; range 0,5 ÷ 12m3/h
<b>0025B2</b>	DN25 / 4.0MPa / PTFE; range 0,6 ÷ 18m3/h
<b>0032B2</b>	DN32 / 4.0MPa / PTFE; range 1 ÷ 30m3/h
<b>0040B2</b>	DN40 / 4.0MPa / PTFE; range 1,8 ÷ 42m3/h
<b>0050B2</b>	DN50 / 4.0MPa / PTFE; range 3 ÷ 66m3/h
<b>0065B1</b>	DN65 / 4.0MPa / Neoprene; range 5,8 ÷ 120m3/h
<b>0065B2</b>	DN65 / 4.0MPa / PTFE; range 5,8 ÷ 120m3/h
<b>0080B1</b>	DN80 / 4.0MPa / Neoprene; range 8,9 ÷ 180m3/h
<b>0080B2</b>	DN80 / 4.0MPa / PTFE; range 8,9 ÷ 180m3/h
<b>0100B1</b>	DN100 / 4.0MPa / Neoprene; range 11 ÷ 282m3/h
<b>0100B2</b>	DN100 / 4.0MPa / PTFE; range 11 ÷ 282m3/h
<b>0100E1</b>	DN100 / 1.6MPa / Neoprene; range 11 ÷ 282m3/h
<b>0100E2</b>	DN100 / 1.6MPa / PTFE; range 11 ÷ 282m3/h
<b>0125B1</b>	DN125 / 4.0MPa / Neoprene; range 20 ÷ 450m3/h
<b>0125B2</b>	DN125 / 4.0MPa / PTFE; range 20 ÷ 450m3/h
<b>0125E1</b>	DN125 / 1.6MPa / Neoprene; range 20 ÷ 450m3/h
<b>0125E2</b>	DN125 / 1.6MPa / PTFE; range 20 ÷ 450m3/h
<b>0150B1</b>	DN150 / 4.0MPa / Neoprene; range 30 ÷ 600m3/h
<b>0150B2</b>	DN150 / 4.0MPa / PTFE; range 30 ÷ 600m3/h
<b>0150E1</b>	DN150 / 1.6MPa / Neoprene; range 30 ÷ 600m3/h
<b>0150E2</b>	DN150 / 1.6MPa / PTFE; range 30 ÷ 600m3/h
<b>0200C1</b>	DN200 / 1.0MPa / Neoprene; range 50 ÷ 1100m3/h
<b>0200C2</b>	DN200 / 1.0MPa / PTFE; range 50 ÷ 1100m3/h
<b>0200E1</b>	DN200 / 1.6MPa / Neoprene; range 50 ÷ 1100m3/h
<b>0200E2</b>	DN200 / 1.6MPa / PTFE; range 50 ÷ 1100m3/h

<b>0250C1</b>	DN250 / 1.0MPa / Neoprene; range 85 ÷ 1700m <sup>3</sup> /h
<b>0250C2</b>	DN250 / 1.0MPa / PTFE; range 85 ÷ 1700m <sup>3</sup> /h
<b>0250E1</b>	DN250 / 1.6MPa / Neoprene; range 85 ÷ 1700m <sup>3</sup> /h
<b>0250E2</b>	DN250 / 1.6MPa / PTFE; range 85 ÷ 1700m <sup>3</sup> /h
<b>0300C1</b>	DN300 / 1.0MPa / Neoprene; range 110 ÷ 2400m <sup>3</sup> /h
<b>0300C2</b>	DN300 / 1.0MPa / PTFE; range 110 ÷ 2400m <sup>3</sup> /h
<b>0300E1</b>	DN300 / 1.6MPa / Neoprene; range 110 ÷ 2400m <sup>3</sup> /h
<b>0300E2</b>	DN300 / 1.6MPa / PTFE; range 110 ÷ 2400m <sup>3</sup> /h
<b>0350C1</b>	DN350 / 1.0MPa / Neoprene; range 180 ÷ 3300m <sup>3</sup> /h
<b>0350C2</b>	DN350 / 1.0MPa / PTFE; range 180 ÷ 3300m <sup>3</sup> /h
<b>0350E1</b>	DN350 / 1.6MPa / Neoprene; range 180 ÷ 3300m <sup>3</sup> /h
<b>0350E2</b>	DN350 / 1.6MPa / PTFE; range 180 ÷ 3300m <sup>3</sup> /h
<b>0400C1</b>	DN400 / 1.0MPa / Neoprene; range 220 ÷ 4200m <sup>3</sup> /h
<b>0400C2</b>	DN400 / 1.0MPa / PTFE; range 220 ÷ 4200m <sup>3</sup> /h
<b>0400E1</b>	DN400 / 1.6MPa / Neoprene; range 220 ÷ 4200m <sup>3</sup> /h
<b>0400E2</b>	DN400 / 1.6MPa / PTFE; range 220 ÷ 4200m <sup>3</sup> /h
<b>0450C1</b>	DN450 / 1.0MPa / Neoprene; range 270 ÷ 5400m <sup>3</sup> /h
<b>0450C2</b>	DN450 / 1.0MPa / PTFE; range 270 ÷ 5400m <sup>3</sup> /h
<b>0450E1</b>	DN450 / 1.6MPa / Neoprene; range 270 ÷ 5400m <sup>3</sup> /h
<b>0450E2</b>	DN450 / 1.6MPa / PTFE; range 270 ÷ 5400m <sup>3</sup> /h
<b>0500C1</b>	DN500 / 1.0MPa / Neoprene; range 320 ÷ 6600m <sup>3</sup> /h
<b>0500C2</b>	DN500 / 1.0MPa / PTFE; range 320 ÷ 6600m <sup>3</sup> /h
<b>0500E1</b>	DN500 / 1.6MPa / Neoprene; range 320 ÷ 6600m <sup>3</sup> /h
<b>0500E2</b>	DN500 / 1.6MPa / PTFE; range 320 ÷ 6600m <sup>3</sup> /h
<b>0600C1</b>	DN600 / 1.0MPa / Neoprene; range 490 ÷ 9600m <sup>3</sup> /h
<b>0600E1</b>	DN600 / 1.6MPa / Neoprene - range 490 ÷ 9600m <sup>3</sup> /h
<b>0700C1</b>	DN700 / 1.0MPa / Neoprene; range 680 ÷ 13500m <sup>3</sup> /h
<b>0700E1</b>	DN700 / 1.6MPa / Neoprene; range 680 ÷ 13500m <sup>3</sup> /h
<b>0800C1</b>	DN800 / 1.0MPa / Neoprene; range 900 ÷ 18000m <sup>3</sup> /h
<b>0800E1</b>	DN800 / 1.6MPa / Neoprene; range 900 ÷ 18000m <sup>3</sup> /h
<b>9999Z9</b>	Special

#### Process connection

<b>B</b>	DIN (UNI 1092-1) flange
<b>D</b>	ANSI flange (price on request)
<b>Z</b>	Special

#### Electrodes material

<b>1</b>	SS316L Stainless steel
<b>3</b>	Hastelloy C276
<b>4</b>	Titanium
<b>5</b>	Tantalum
<b>6</b>	Platinum

#### Power supply

<b>D</b>	Battery - 6 years life
<b>E</b>	Battery (6 years life) + 12÷24Vdc external supply

#### Accessories

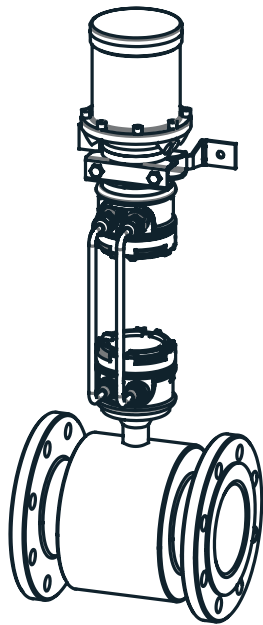
<b>0</b>	None
<b>1</b>	316SS or Hastelloy C grounding rings for plastic pipe installation (price on request)
<b>5</b>	Data logger on SD card

#### Output

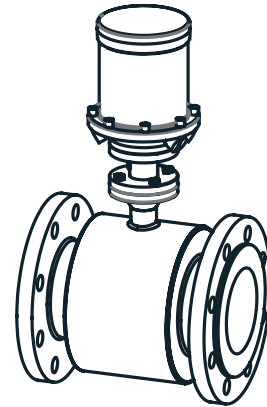
<b>A</b>	Pulse output
<b>E</b>	Pulse output + MODBUS (not with GPRS)
<b>F</b>	Pulse output + 4÷20mA (not with GPRS)
<b>G</b>	Pulse output + 4÷20mA + MODBUS (not with GPRS)
<b>N</b>	None

#### Protection degree

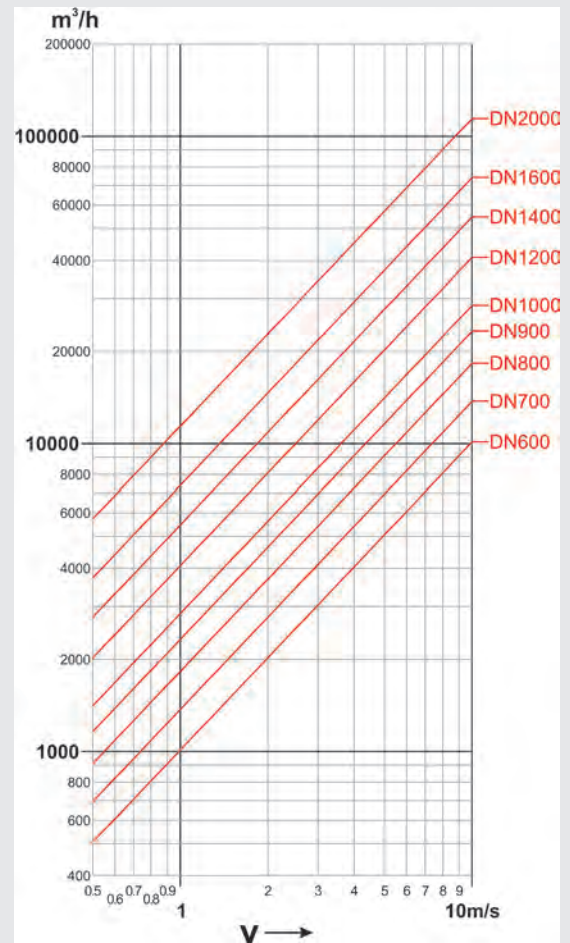
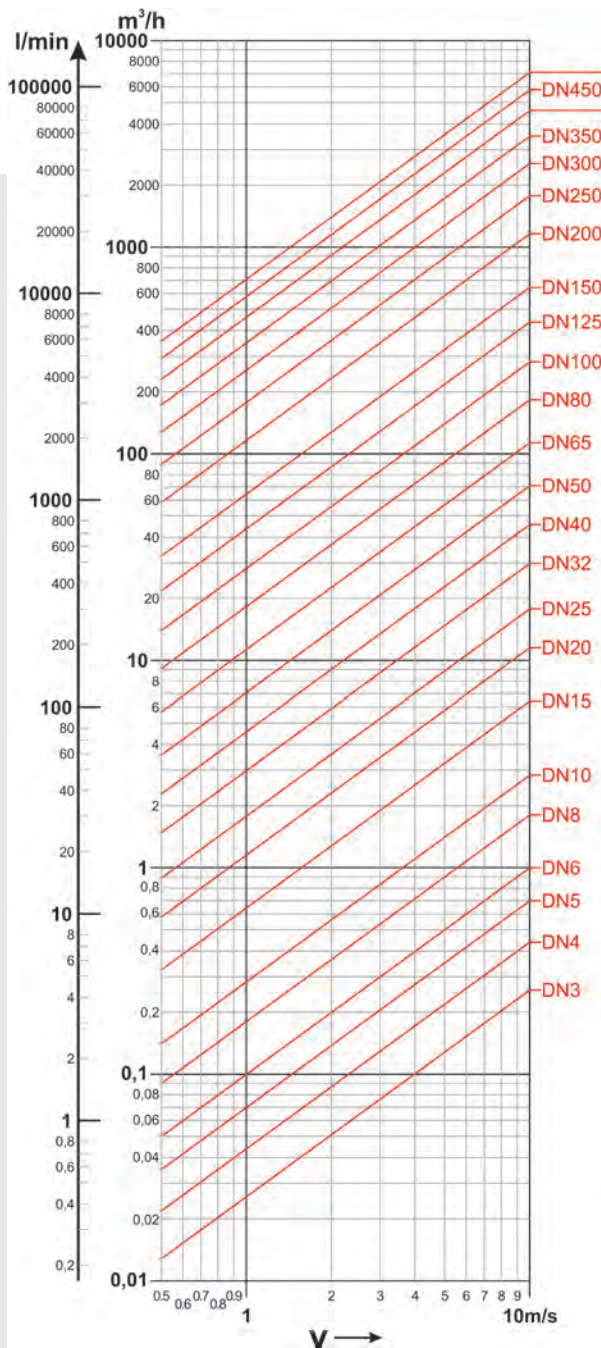
<b>3</b>	IP68 (compact version - with data logger accessory -> IP67)
<b>4</b>	Converter IP67 / Sensor IP67 (remote version)
<b>5</b>	Converter IP67 / Sensor IP68 (remote version)
<b>6</b>	Converter IP68 ( with data logger accessory -> IP67) / Sensor IP68 (remote version)



REMOTE VERSION



COMPACT VERSION



# Ultrasonic | Transit Time

Ultrasonic transit time or ‘clamp on’ flow meters are instruments designed to measure the speed of a liquid inside a pipeline or conduit.

The principle of operation is based on measuring the time it takes for an ultrasonic signal to travel a certain distance inside a moving liquid. A transducer positioned outside the pipe generates an ultrasonic pulse that travels through the fluid to a second transducer, positioned at a known distance from the transmitter.

The meter logs the time it takes for the ultrasonic pulse to travel from the transmitter to the receiver.

Knowing the distance between the transducers and the transit time, the meter calculates the average velocity of the fluid in the pipe using a formula.

Once the velocity of the fluid is determined, the meter can display and transmit the fluid flow measurement inside the pipe.



	<b>SGM-101F</b>
<b>Pipe diameter range</b>	DN20 ÷ DN4000
<b>Piping material</b>	carbon steel / stainless steel / fiberglass / cast iron / copper / PE / PVC / aluminum
<b>Liquid conductivity</b>	irrelevant
<b>Sensor material</b>	Nylon; Polysulfone
<b>Housing material</b>	aluminium
<b>Process temperature</b>	-40 ÷ 90° C / -40 ÷ 160° C
<b>Accuracy</b>	±1%
<b>Repeatability</b>	±0,2%
<b>Analog output</b>	4÷20 mA; max load 750 ohm
<b>Communication port</b>	modbus
<b>Pulse output</b>	passive open collector / relay
<b>Power supply</b>	24-115-230Vac / 10 ÷ 30 Vdc
<b>Data logger:</b>	SD card
<b>Heat meter</b>	yes

Ultrasonic transit time flow meters are employed in industrial environments where liquid flow measurements in manufacturing processes are required. These include water distribution and treatment systems, water network monitoring, and the food and beverage industries. Installation does not require any interruption of flow or sectioning of pipes, making them non-invasive and leakage-free. They deliver accurate measurements over a wide range of flow rates, from low to high flows, providing reliable monitoring. Minimal maintenance is required, since they have no moving parts that are subject to wear and tear. Ultrasonic transit time meters can be more expensive than other flow measurement technologies. Measurement accuracy is also constrained by correct installation and can be affected by fluid properties, such as the presence of air bubbles or particulate matter. A careful evaluation of the application specifications and a comparison of these with the features of the meters is essential in ensuring that the most suitable option is selected.



	<b>SGM-101H</b>
<b>Pipe diameter range</b>	DN25 ÷ DN1200
<b>Piping material</b>	carbon steel / stainless steel / fiberglass / cast iron / copper / PE / PVC / aluminum
<b>Liquid conductivity</b>	irrelevant
<b>Sensor material</b>	aluminium / PP
<b>Housing material</b>	aluminium
<b>Process temperature</b>	-40 ÷ 80° C
<b>Accuracy</b>	±1%
<b>Repeatability</b>	±0,2%
<b>Analog output</b>	4÷20mA, max 750ohm
<b>Communication port</b>	MODBUS RTU
<b>Pulse output</b>	nessuna
<b>Power supply</b>	battery 6 hours autonomy
<b>Data logger:</b>	SD card
<b>Heat meter</b>	-



## SGM-101F Transit time ultrasonic flowmeter

For conductive and non-conductive liquids  
 Measure range  $<0,2\text{m}^3/\text{h} \div >400000 \text{m}^3/\text{h}$   
 Accuracy  $\pm 1\%$   
 Clamp on IP68 sensors also for high temperatures  
 Pipe dimension range:  
 DN20  $\div$  DN4000  
 Datalogger via SD card or via MODBUS  
 Heat meter

The SGM-101F flowmeters operate on the ultrasonic pulses transit time difference principle. The great advantage is the mechanical installation, because it is not necessary to cut the pipe. The sensors are simply clamped on the outer pipe surface, for this reason the pressure and the liquid aggressiveness to be measured are not a problem for the flowmeter. The system measures in a bidirectional way and is suitable for clean or slightly dirty liquids.

### Technical Feature

**Pipe dimension range**

DN20  $\div$  DN4000

**Transmitter protection class**

IP66

**Transducer protection class**

IP68

**Display**

backlighted 2x20 alphanumeric digit

**Keypad**

4 keys

**Housing material**

aluminium

**Displayed data**

instantaneous flowrate; flow totalizer

**Installation**

wall mounting

**Analog Output**

Sel. 4 $\div$ 20mA o 0 $\div$ 20mA

**Accuracy**

$\pm 1\%$

**Repeatability**

$\pm 0,2\%$

**Linearity**

$\pm 0,5\%$

**Basic measurement period**

500ms

**Serial port**

RS485

**Communication protocol**

MODBUS RTU or ASCII+ (opt.)

**Data logger**

on SD card (opt.) or via MODBUS

**Programmable frequency output**

0 $\div$ 5000Hz

**Output**

n.1 relay; n.1 digital output

**Medium speed range**

$\pm 12\text{m/s}$

**Unit working temperature**

-20 $\div$ 60°C

**Instrument humidity**

non condensing 85% RH (40°C)

**Transducer working temperature**

TS-2 / TM-1 / TL-1 -30  $\div$  +90°C; TS2H / TM1H -30  $\div$  +160°C; TC-1/ TLC2 -40  $\div$  +160°C

**PT100 sensors working temperature**

-40°C +160°C

**Transducer cable std. length**

5mt

**PT100 sensor cable std. length**

15mt

**Power Supply**

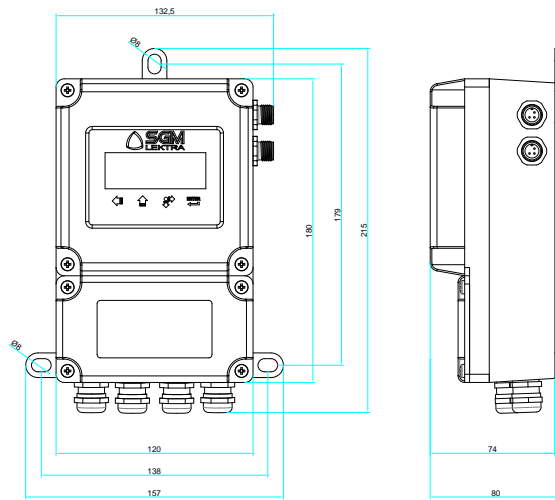
24,115,230Vac; 10 $\div$ 30Vdc

**Dimensions**

200x120x77mm

**Weight without sensors**

1Kg



**SGM-101F**

Transit time ultrasonic flow meter

For conductive and non-conductive fluids. Wall mounting - Speed range: max  $\pm 12\text{m/s}$  - Simultaneous display of flowrate and cumulative volume data  
 Available with heat meter option  
 Output: 4 $\times$ 20mA + 1 open collector + 1 relay  
 Accuracy not better  $\pm 1\%$   
 Protection degree: transmitter IP66 - transducers IP68  
 Supplied with grease and steel hose clamps for transducers fixing up to DN900

Version	
<b>C</b>	Heat meter - with couple of cables L= 15 m (540Z084A)
<b>D</b>	Heat meter with couple of cables L= 15 m (540Z084A) + datalogger on 8GB SD card
<b>U</b>	Datalogger on 8GB SD card
<b>W</b>	Standard
<b>Z</b>	Special
Power supply	
<b>A</b>	230Vac
<b>B</b>	115Vac
<b>C</b>	24Vac
<b>D</b>	10 $\div$ 30 Vdc
<b>Z</b>	Special
Transducers	
<b>A0--</b>	None
<b>TS-2</b>	Clamp-on type for pipes DN 20 $\div$ 100 / -40 $\div$ 90°C - std cable 5m (additional cable eur 8,90 each mt - max 200 mt)
<b>TM-1</b>	Clamp-on type for pipes DN 50 $\div$ 700 / -40 $\div$ 90°C - std cable 5m (additional cable eur 8,90 each mt - max 200 mt)
<b>TL-1</b>	Clamp-on type for pipes DN 300 $\div$ 4000 / -40 $\div$ 90°C - std cable 5m (additional cable eur 8,90 each mt - max 200 mt)
<b>TS2H</b>	Clamp-on type for pipes DN 20 $\div$ 100 - high temperature -40 $\div$ 160°C - std cable 5m (additional cable eur 8,90 each mt - max 200 mt)
<b>TM1H</b>	Clamp-on type for pipes DN 50 $\div$ 700 - high temperature -40 $\div$ 160°C - std cable 5m (additional cable eur 8,90 each mt - max 200 mt)
<b>TL1H</b>	Clamp-on type for pipes DN 300 $\div$ 4000 - high temperature -40 $\div$ 160°C - std cable 5m (additional cable eur 8,90 each mt - max 200 mt)
<b>TC-1</b>	Insertion type for pipes with max thickness 20mm -40 $\div$ 160°C - std cable 5m (additional cable eur 8,90 each mt - max 200 mt)
<b>TLC2</b>	Insertion type for pipes with max thickness 80mm -40 $\div$ 160°C - std cable 5m (additional cable eur 8,90 each mt - max 200 mt)
<b>TCCP</b>	Insertion type for CCP pipes with max thickness 160mm -40 $\div$ 160°C - std cable 5m (additional cable eur 8,90 each mt - max 200 mt)
<b>Z999</b>	Special
Additional output	
<b>4</b>	RS485 - MODBUS
<b>N</b>	None
<b>Z</b>	Special
Accessories	
<b>A</b>	None
<b>B</b>	MODBUS communication software(010F109A)
<b>E</b>	Pair of PT100 class A in MGO with SS316 sheat $\varnothing$ 3mm. M12 connector - L= 150 mm
<b>H</b>	Pair of SS316 wells for PT100 class A in MGO with sliding fitting. Process connection G 1/4 M - L= 50 mm
<b>L</b>	Pair of SS316 wells for PT100 class A in MGO with sliding fitting. Process connection G 1/4 M - L= 100 mm
<b>P</b>	Pair of surface mounting brass plates for PT100 class A in MGO $\varnothing$ 3mm
<b>Q</b>	Pair of metallic hose clamps for PT100 for up to DN900 pipes (590A010A)
<b>Z</b>	Special





## SGM-101H Transit time ultrasonic flowmeter

Portable system suitable for conductive and non-conductive fluids even with the presence of suspended material (<10g / l; <01mm)  
 Measuring ranges from <0.02m<sup>3</sup> / h to > 24000m<sup>3</sup> / h  
 Measurement accuracy: ± 1%  
 Clamp-on sensors on metric ruler  
 Measurement range DN25 ÷ DN1200 Datalogger on SD card Backlit display  
 Battery life: max 6h  
 Analogue output 4 ÷ 20mA  
 MODBUS RTU digital communication

The SGM-101H flow measurement system consists of a digital converter and two ultrasonic transducers. The transit time of a fluid, inside a cylindrical section tube, is the operating principle on which the instrument is based to calculate the instantaneous flow rate value. SGM-101H has an active 4 ÷ 20mA output and the MODBUS RTU communication port.

### Technical Feature

**Pipe dimension range**

DN25 -; DN1200

**Transmitter protection class**

IP68

**Converter protection class**

IP54

**Display**

3.5" TFT, 320x240pixel, backlighted

**Keypad**

23 touch keys

**Converter housing material**

Aluminium

**Accuracy**

±1%

**Battery life**

6h

**Charger**

100÷240Vac

**Displayed data**

instantaneous flow; flow rate; signal

**quality**

**Totalizer**

positive, negative and net

**Data logger**

SD card

**Clamp-on transducers on metric frame**

-40÷ +80°C

**Temperature range converter**

-10÷ +50°C

**Analog output**

4÷20mA, max 750ohm

**Digital communication**

MODBUS RTU

**Cable lengths**

5m

**SGM-101H**

Portable transit time ultrasonic flow meter

For conductive and non-conductive fluids.  
With clamp-on transducers on metric frame.  
Simultaneous display of flowrate and cumulative volume data  
Speed range: max  $\pm 6$ m/s. Accuracy:  $\pm 1\%$  Repeatability: 0,3%  
Ambient temperature:  $-20^{\circ} \div 60^{\circ}\text{C}$  - Humidity  $<85\%$  (RH)  
Transducers temperature range:  $-40^{\circ} \div 80^{\circ}\text{C}$ . Battery life: 6 hours.  
Hand-held mechanical protection: IP54. Transducers protection: IP68.  
Transducers connection cables: 5 m  
Supplied with acoustic coupling gel, battery charger, accessories  
for transducers mounting, SD card with software for data acquisition  
on PC (Excel file), SD card adapter for USB port, junction box  
for 4-20mA and MODBUS RTU output connection.

Transducers	
1	Transducers on metric frame for pipes from DN25 to DN1200 IP68

Accessories	
A	None
Z	Special

# Open Channel | Hydraulic Jump

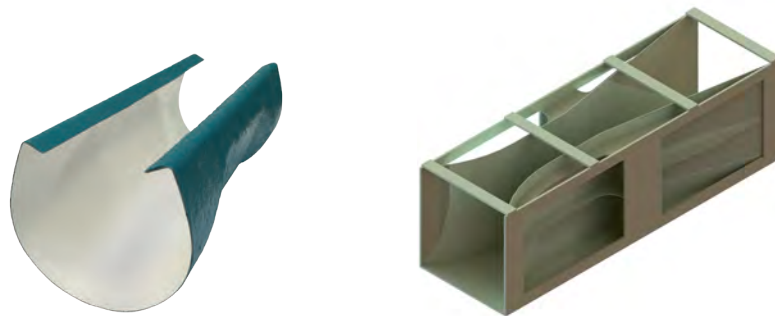
Hydraulic jumping is a commonly employed technique to measure flow in open channels, such as rivers, drainage channels or partially flooded conduits. This method is based on the principle that when a flow crosses a hydraulic jump, the level measured upstream of the jump will be closely matched to the flow rate.

Flow measurement in open channels using the hydraulic jump method is achieved by installing a hydraulic modeller, a level measurement probe (ultrasonic or radar, with no contact with the liquid itself) and a control unit, inside a partially filled channel or pipe, which uses information on the geometry of the channel, the specifications of the hydraulic modeller and specific calibration curves to convert the level into an instantaneous flow measurement.

This method of measurement can be employed in a wide variety of applications such as water network management, industrial process monitoring, sewage networks or water treatment plants.

With careful calibration, the selection of a suitable hydraulic modeller and regular maintenance, accurate measurements can be obtained.

The hydraulic jump method provides a non-invasive, relatively accurate option for the measurement of flow in open channels or unpressurised pipes. Careful consideration of site conditions, system design and calibration is essential, however, in order to obtain reliable, accurate results.



	<b>PB - Palmer Bowlus</b>	<b>BS - Venturi Flumes</b>
<b>Material:</b>	Fiberglass	PP
<b>Pepe/Channel dimension:</b>	DN100 ÷ 800	150 ÷ 1200 mm
<b>Flow min/max</b>	0,4 ÷ 1800 m <sup>3</sup> /h	1 ÷ > 7700 m <sup>3</sup> /h



	FLOWMETER	FLOW51	CA400
<b>Calibration and configuration</b>	4 buttons; MODBUS RTU; Bluetooth	MODBUS RTU; Bluetooth	5 buttons
<b>Use:</b>	For any weir / channel STD or custom	For any weir / channel STD or custom	For any weir / channel STD or custom
<b>Mechanical protection</b>	IP67	IP67 68	IP66 VLW90M IP67 68PTU50 / 51
<b>Block distance</b>	25 cm	30 cm	PTU50 5 cm / PTU51 30 cm
<b>Data logger:</b>	No	No	USB pen drive
<b>Housing material</b>	PC/AL	-	ABS
<b>Sensor material</b>	PP	PP	PP
<b>Process connectios</b>	G2"	G1"	G1"
<b>Operating temperature</b>	-20 ÷ +60 °C	-20 ÷ +60 °C	-20 ÷ +60 °C
<b>Accuracy:</b>	0,2% of the measured distance, not better than +/- 3mm	0,2% of the measured distance, not better than +/- 3mm	0,2% of the measured distance, not better than +/- 3mm (PTU50 ± 1 mm)
<b>Display:</b>	LCD	-	Backlit LCD 3.5 TFT 256K color
<b>Analog output</b>	4÷20 mA; max. load 750 Ohm	4÷20mA max 750ohm	2x 4÷20 mA; max. load 750 Ohm
<b>Communication port</b>	MODBUS RTU; Bluetooth	MODBUS RTU; Bluetooth	MODBUS RTU
<b>Pulse output</b>	relé	-	open collector / relays
<b>Power supply</b>	12Vdc; 20÷30Vdc/Vac	20÷30Vdc/Vac	85÷265 Vac; 20÷30Vdc
<b>Consumption:</b>	1,5 W	1,5W	<6 W



## CA400

Complete system for measuring flow rates in open channels and non-pressurized pipes

- 2 independent flow measurements
- Measuring range of sensors 1.5; 6 meters
- IP68 sensor protection
- 2 analogue outputs 4 ÷ 20mA
- 5 totally configurable relays
- 2 open collector digital outputs
- 2 analogue inputs 4 ÷ 20mA
- 2 digital inputs (max 24Vdc 10mA)
- Datalogger on USB Pen Drive (optional)

The flow measurement in open channels with the hydraulic projection method is carried out with the use, inside the channel or partially filled pipe, of a hydraulic modeller (BS - venturi / PB channels - palmer bowlus), a probe for the Level measurement (in this case ultrasound (PTU50; PTU51, without contact with the liquid itself) and an associated control unit (VLW90M) VLW90M is suitable for a direct connection of 1 or 2 MODBUS ultrasound sensors. Thanks to this feature, the CA400 system is able to simultaneously perform two independent flow measurements with ultrasonic sensors and different hydraulic modellers for each type of channel. Logger “based on removable PenDrive, allows the total traceability of flow measurements in open channels for which it is very easy to analyze the time profile of the instantaneous flow rates..

### Technical Feature

**VLW90M housing material**

ABS

**PTU sensor material**

Polypropylene (PP)

**Degree of protection VLW90M**

IP66

**Sensor protection degree**

IP68

**VLW90M electrical connection**

Terminal Blocks

**Electrical connection sensors**

IP68 connector with 5/10/15 / 20m connection cable

**Working temperature**

20 ÷ 60°C

**VLW90M power supply**

85÷265 Vac; 20÷30Vdc

**Absorbed power**

Max. 10W

**Keyboard**

5 buttons

**Display**

320x240 color LCD backlit matrix

**Analog output**

n.2 4 ÷ 20mA configurable; isolated

**Output relay**

5 relays (5A 250Vac) configurable

**Digital outputs**

2 open collectors (max 24Vdc 50mA)

**Analog inputs**

n.2 4 ÷ 20mA

**Digital inputs**

n.2 (max 24Vdc 10mA)

**Digital communication**

MODBUS RTU

**Datalogger**

on USB Pen Drive; max.32GB (FAT32)



**CA400**

System for measurement of flow in open channels

Measurement of flow by hydraulic jump - Venturi and standard weirs  
 Primary devices for rectangular channels (BS) and partially filled pipes (PB).  
 Up to 2 simultaneous measurements of flow with different devices.  
 Backlit color LCD display - 5 push buttons for calibration  
 MODBUS RTU communication  
 5 relays with change over contact (SPDT)  
 Nr. 2 4÷20mA optoisolated outputs + nr. 2 optoisolated open collectors  
 Wall or DIN rail mounting - IP 66 (control unit) - -20 ÷ +60°C  
 IP67/68 proof (sensors)

Sensor type	
0	PTU50 - 0,05 ÷ 1,5m - temperature range -25 ÷ +75°C - IP67 (to be used only with PB100/150/200/250/300/350/400/500 and BS150/200/300)
1	PTU51 - 0,3 ÷ 6m - temperature range -25 ÷ +75°C - IP67
2	PTU50 - 0,05 ÷ 1,5m - temperature range -25 ÷ +75°C - with 10m integrated cable - IP68 (to be used only with PB100/150/200/250/300/350/400/500 and BS150/200/300)
3	PTU51 - 0,3 ÷ 6m - temperature range -25 ÷ +75°C - with 10m integrated cable - IP68
9	Special

Sensor connection	
A	None (for sensor type 2 and 3)
E	With SS316 male connector
P	With plastic (PA) male connector
Z	Special

Cable length	
A	None (for sensor type 2 and 3)
M	5m cable with IP67 female connector in plastic (PA)
T	5m cable with IP67 female connector in SS316
U	10m cable with IP67 female connector in SS316
V	15m cable with IP67 female connector in SS316
W	20m cable with IP67 female connector in SS316
Z	Special

Power supply	
A	85÷265Vac 50÷60Hz
B	20÷30 Vac/Vdc
Z	Special

Primary device	
AA000	None
PB100	DN100 (4"); range 0,45÷ 6m <sup>3</sup> /h (max. 8m <sup>3</sup> /h)
PB150	DN150 (6"); range 0,68÷15m <sup>3</sup> /h (max. 19m <sup>3</sup> /h)
PB200	DN200 (8") - with 2 spacing bars; range 1,2÷48m <sup>3</sup> /h (max. 56m <sup>3</sup> /h)
PB250	DN250 (10"); range 1,29÷68m <sup>3</sup> /h (max. 76m <sup>3</sup> /h)
PB300	DN300 (12") - with 2 spacing bars; range 2,27÷136m <sup>3</sup> /h (max. 150m <sup>3</sup> /h)
PB350	DN350 (14") - with 2 spacing bars; range 3 ÷161m <sup>3</sup> /h (max. 192m <sup>3</sup> /h)
PB400	DN400 (16"); range 2,23÷213m <sup>3</sup> /h (max. 240m <sup>3</sup> /h)
PB450	DN450 (18") - with 3 spacing bars; range 3,8÷330m <sup>3</sup> /h (max. 365m <sup>3</sup> /h)
PB500	DN500 (20") - with 3 spacing bars; range 5,34÷468m <sup>3</sup> /h (max.532m <sup>3</sup> /h)
PB600	DN600 (24"); range 10÷560m <sup>3</sup> /h (max.623m <sup>3</sup> /h)
PB700	DN700 (28"); range 15÷1019m <sup>3</sup> /h (max.1115m <sup>3</sup> /h)
PB800	DN800 (32") - with 4 spacing bars; range 18÷1672m <sup>3</sup> /h (max.1806m <sup>3</sup> /h)
BS150	Qmin=1 m <sup>3</sup> /h - 0,28 l/sec; Qmax=50 m <sup>3</sup> /h - 13,8 l/s Length 0,480m; width 0,15m; height 0,27m
BS200	Qmin=2 m <sup>3</sup> /h - 0,55 l/sec; Qmax=55 m <sup>3</sup> /h - 15,27 l/s Length 0,639m; width 0,2m; height 0,24m
BS300	Qmin=3 m <sup>3</sup> /h - 0,83 l/sec; Qmax=150 m <sup>3</sup> /h - 41,6 l/s Length 0,958m; width 0,3m; height 0,36m
BS400	Qmin=10 m <sup>3</sup> /h -2,7 l/sec; Qmax=310 m <sup>3</sup> /h - 86,1 l/s Length 1,278m; width 0,4m; height 0,48m
BS500	Qmin=20 m <sup>3</sup> /h - 5,5 l/sec; Qmax=500 m <sup>3</sup> /h - 138,8 l/s Length 1,598m; width 0,5m; height 0,60m
BS600	Qmin=25 m <sup>3</sup> /h - 7,15 l/sec; Qmax=850 m <sup>3</sup> /h - 236 l/s Length 1,5m; width 0,6m; height 0,72m
BS800	Qmin=50 m <sup>3</sup> /h - 13,9 l/sec; Qmax=1400 m <sup>3</sup> /h - 389 l/s Length 2m; width 0,8m; height 0,90m
BS101	Qmin=60 m <sup>3</sup> /h - 16,6 l/sec; Qmax=2250 m <sup>3</sup> /h - 625 l/s Length 2,5m; width 1m; height 1m
BSx00	Pair of side restraints for channel Length 2,5m; width 0,3m; height 1,3m

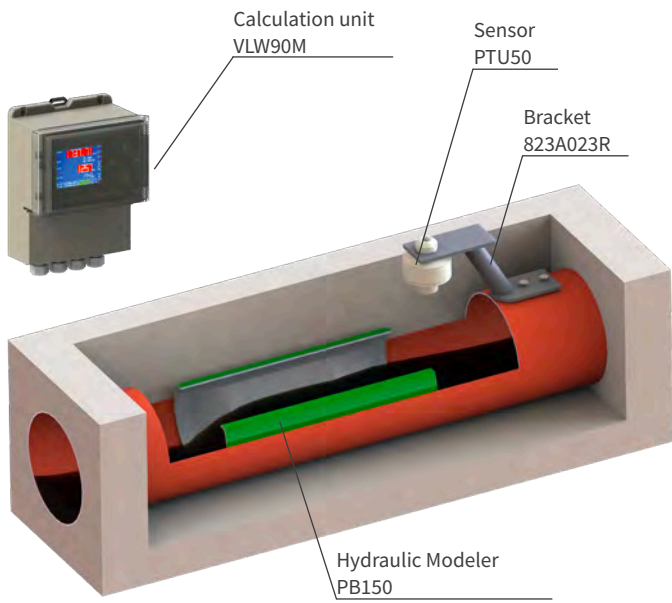
Accessories	
0	None
1	Data logger
2	PTU50/51 holder in PVC for PB mounting (835A027R)
3	Pedestal mounting kit in SS316 for PTU - to be used with BS Venturi and weirs (900A004A)
4	Wall mounting kit in SS316 for PTU - to be used with BS Venturi and weirs (900A001A)
5	Basin edge mounting kit in SS316 for PTU - to be used with BS Venturi and weirs (900A002A)
9	Special

Packing	
A	None
B	Wooden crate necessary for PB (from DN350 and bigger) and for BS (from BS300 and bigger) - Prices on OCP page

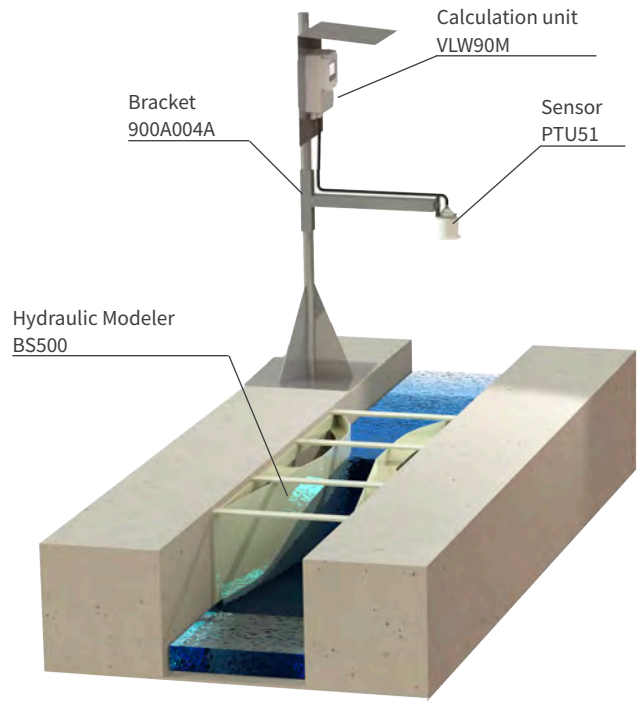
OCP Open channel packing

Accessories	
650D023A	Wooden crate for Palmer Bowlus DN 350
650D015A	Wooden crate for Palmer Bowlus DN 400/500
650D014A	Wooden crate for Palmer Bowlus DN 600/700/800
650D016A	Wooden crate for Venturi BS300
650D017A	Wooden crate for Venturi BS400
650D018A	Wooden crate for Venturi BS500
650D019A	Wooden crate for Venturi BS600
650D020A	Wooden crate for Venturi BS800
650D021A	Wooden crate for Venturi BS1000

**EXAMPLES OF INSTALLATION**

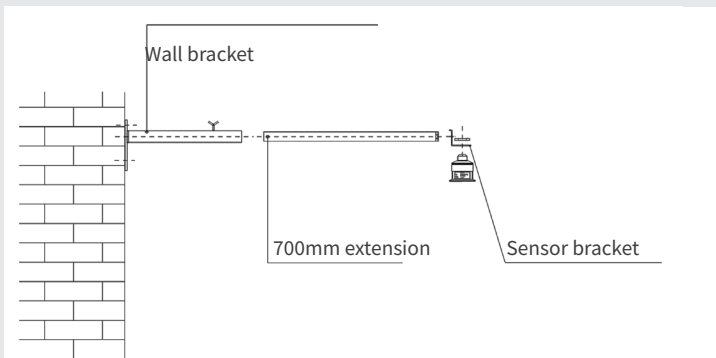


CA400 in non-pressurized pipe DN150

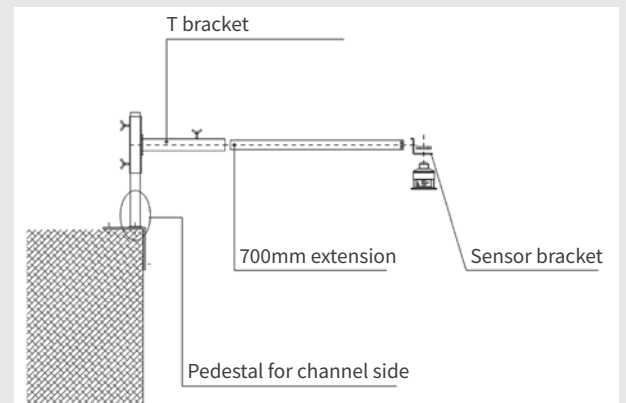


CA400 in a rectangular section channel

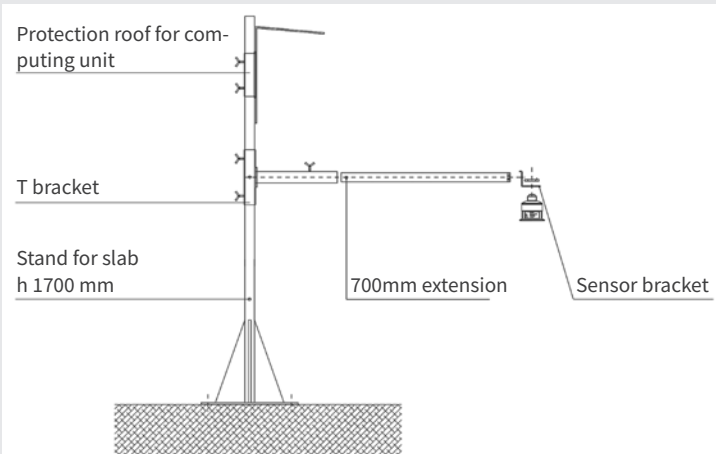
**ACCESSORIES, MOUNTING SYSTEMS**



Wall mounting kit for BS Venturi / weir (900A001A)



Basin edge mounting kit for BS Venturi / weir (900A002A)



Pedestal mounting kit for BS Venturi / weir (900A004A)







## FLOWMETER

### Compact flowmeter

Compact system suitable to be installed upstream of hydraulic modelers (weirs, venturi, palmer bowlus)  
 Solution with excellent price performance ratio  
 Instantaneous and totalized flow measurement  
 No. 2 freely programmable relays  
 MODBUS; Bluetooth communication protocol  
 Remote control via Smartphone

Flowmeter is an ultrasonic flow transmitter, temperature-compensated and suitable for connection with MODBUS RTU acquisition systems. FLOWMETER in addition to an analog output includes two freely addressable relay for flow threshold or for totalizer pulse output..

### Technical Feature

**Housing/sensor material**

PC or Al / PP wetted part

**Mechanical installation**

2" GAS M (PP flange DN80 opt.)

**Protection degree**

IP67/IP68 (Sensor)

**Electrical connection**

Internal push connectors

**Working temperature**

-20 ÷ +60°C

**Pressure**

from 0,5 to 1,5 bar (absolute)

**Power supply**

20÷30Vdc | 11÷14Vdc

**Power consumption**

1,5W

**Analog output**

4...20mA, max 750ohm (4-wires versions)

**Relays output**

n°2 3A 230Vac (n.o.)

**Digital communication**

MODBUS

**Max measure range**

max 0.25 ÷ 5 m

In case of non perfectly reflecting surfaces, the maximum distance value will be reduced

**Blind distance**

0,25m

**Temperature compensation**

digital from -30 to 80°C

**Accuracy**

±0,2% (of the measured distance) not better than ±3mm.

**Resolution**

1mm.

**Calibration**

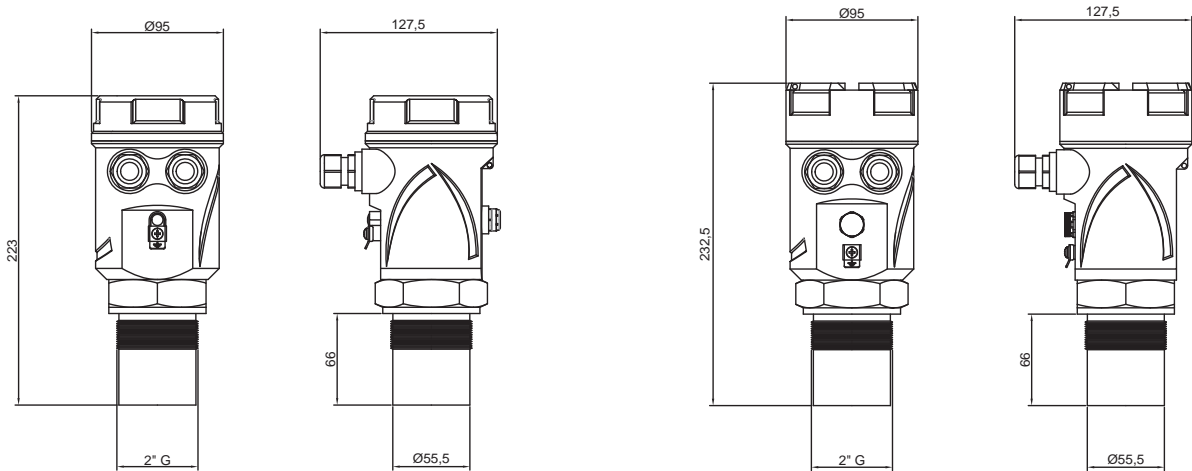
4 buttons or via MODBUS

**Warm-up**

5 minutes typical

**LCD Display**

Plug-in display/keyboard 4 buttons matrix LCD



**FLOWMETER**

Ultrasonic open channel flow control unit

Compact - Suitable for upstream installation in weir, Venturi, Palmer Bowlus (standard and non-standard)  
 G 2" A / PP threaded connection + nr. 1 2" BSP/PP fixing bolt  
 4÷20mA output with instantaneous flow transmission  
 Relay nr. 1 for impulses/volume transmission  
 Relay nr. 2 for threshold alarm or diagnostic  
 Setting by keyboard/display removable module (opt.)  
 or via BLUETOOTH with Android APP (opt.)  
 MODBUS RTU output. Housing with osmotic filter  
 Temperature range : -20° ÷ +60°C

Version	
0	4-wire, MODBUS, range 5m
9	Special
Housing / Sensor materials	
F	PC with transparent cap, IP67 / PP
U	Aluminum with transparent cap, IP67 / PP
Z	Special
Power supply	
4	20÷30Vdc
5	11÷14Vdc - max range 2,5m
9	Special
Accessories	
A	None
B	BLUETOOTH
C	DN80 PN6 UNI 6091-71/PP flange (600J001T)
D	VL601 keyboard/display programming module (VL601SGM)
S	MODBUS RTU communication software (010F119A)
Z	Special



## FLOW51 Compact flowmeter

Compact system suitable to be installed upstream from hydraulic modelers (weirs, venturi, palmer bowlus)

Excellent price-performance ratio

Istantaneous and totalized flow measurement

Measure range 0.3÷6m

MODBUS; Bluetooth communication protocol

Remote control via Smartphone

IP67|68

FLOW51 is a compact IP68 ultrasonic flow transmitter, suitable for the installation in flood-prone wells. The measurement is based on the principle of the raising of the water level before restriction, which is used to calculate the value of instantaneous flow in relation of the type of the existing flume. FLOW51 can be calibrated via MODBUS RTU; Bluetooth or VLW60T if used with SGM LEKTRA Venturi flumes, Palmer Bowlus, Parshall flumes, Khafagi Venturi flumes and all the main types of weirs. In case of non-standard flumes the unit can be calibrated by following the linearization table present on the manual or by using a customized flow formula..

### Technical Feature

**Housing material**

PP

**Mechanical installation**

1" GAS M - PP flange DN100/125 opt.

**Protection degree**

IP67|68

**Electrical connection**

IP67|68 male connector with 5/10/15/20m linking cable

**Working temperature**

-20 ÷ +60°C

**Pressure**

From 0,5 to 1,5 bar (absolute)

**Power supply**

20÷30Vdc/Vac

**Power consumption**

1.5W

**Analog output**

4÷20mA max 750ohm

**Digital communication**

MODBUS RTU

**Range**

0.3÷6m

In case of non perfectly reflecting surfaces, the maximum distance value will be reduced

**Temperature compensation**

digital in the working temperature

**Accuracy**

±0,2% (of the measured distance) not better than ±3mm

**Resolution**

1mm

**Calibration**

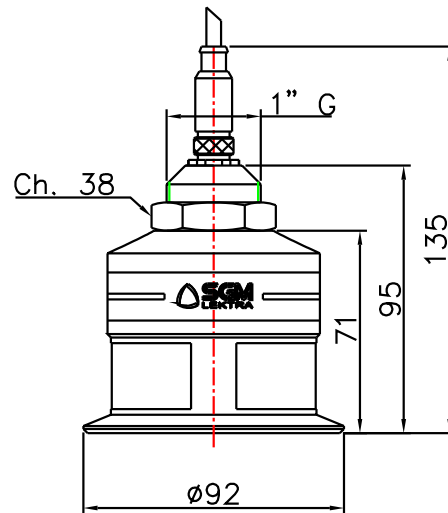
Via App; MODBUS

**Warm-up**

30 minutes

**Display**

LCD display on VLW60T module (opt.)

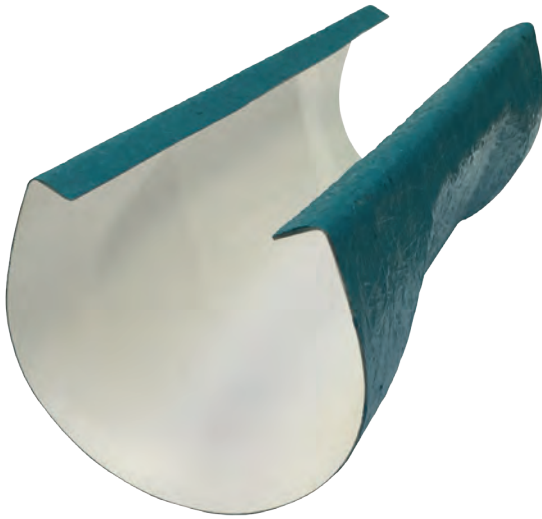


**FLOW51**

Ultrasonic open channel flow control unit

Compact - Suitable for upstream installation in weir, Venturi, Palmer Bowlus (standard and non-standard)  
 4÷20mA output with instantaneous flow transmission + MODBUS RTU  
 Range: 0,3 ÷ 6m; IP67/68 proof - Housing in polypropylene (PP)  
 Power supply 20÷30Vdc  
 Calibration via BLUETOOTH Android APP  
 Temperature range -20 ÷ +60°C

Version	
<b>E</b>	With SS316 male connector / IP67
<b>L</b>	With 10m integrated cable / IP68
<b>Z</b>	Special
Process connection / Sensor material	
<b>0</b>	G 1" / PP + nr. 1 1" BSP/ PP fixing bolt
<b>1</b>	DN100 PN6 UNI 1092-1 flange / PP
<b>9</b>	Special
Accessories	
<b>A</b>	None
<b>F</b>	MODBUS PC communication S/W (010F119A)
<b>H</b>	Extension L=250mm in PP + DN100 flange
<b>L</b>	Adjustable extension for PTU5x in PP + DN100 flange (Lmin= 85mm Lmax=690mm)
<b>N</b>	Junction box / IP68
<b>T</b>	IP67 female connector with 5m linking cable
<b>U</b>	IP67 female connector with 10m linking cable
<b>V</b>	IP67 female connector with 15m linking cable
<b>W</b>	IP67 female connector with 20m linking cable
<b>Y</b>	Cable for Junction box - price per meter
<b>Z</b>	Special



**PB PALMER BOWLUS**  
Hydraulic modeler

For flow measurement in outflow pipe or non pressurized pipes

Direct installation in the pipe or manhole

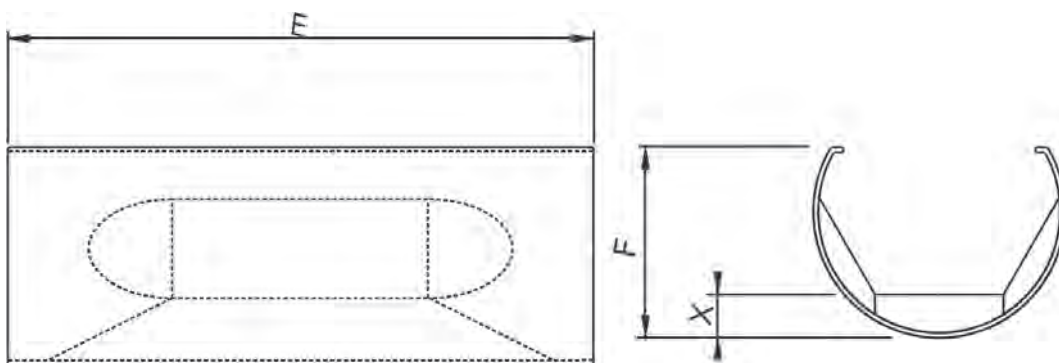
Flow rates from 0,45 m<sup>3</sup>/h to 1800m<sup>3</sup>/h

Matching Sets with all SGM-LEKTRA open channels flow measurement systems

Low cost system

Ideal to circular duct flowrate measure

Essentially a hydraulic modeler designed to increase, upstream of the restriction, the fluid head during its outflow. The Palmer-Bowlus upstream fluid head, increases or decreases in function of the fluid quantity flowing over it. The head measured by a level transmitter is then used to calculate the instantaneous flow rate value. The Palmer-Bowlus is mainly used in pipes or ducts accessible through the manholes. The easy installation, and the contained installation cost, are the reason for the applications number increasing of this system to measure the flow rate.

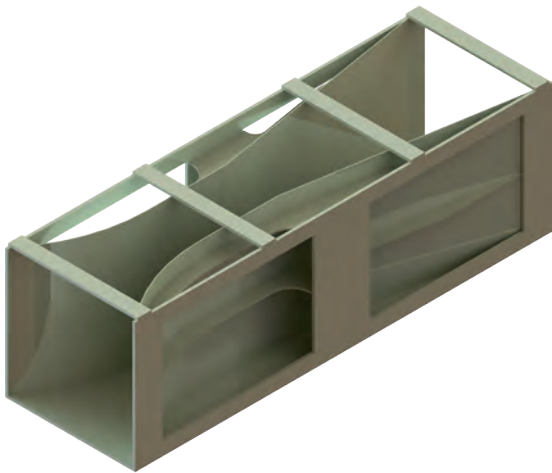


DN (mm)	E (mm)	F (mm)	X (mm)
100	250	75	17
150	400	132	29
200	400	125	29
250	600	208	46
300	600	200	46
350	800	262,5	58,5
400	950	340	75
450	950	335	75
500	950	325	75
600	1450	530	117
700	1450	525	117
800	1450	500	117



**PB** Pre-fabricated Palmer-Bowlus  
Insertion installation in already in place pipes

DN pipe (mm)	
<b>100</b>	DN100 (4"); range 0,45÷6m <sup>3</sup> /h (max.8m <sup>3</sup> /h)
<b>150</b>	DN150 (6"); range 0,68÷15m <sup>3</sup> /h (max. 19m <sup>3</sup> /h)
<b>200</b>	DN200 (8") - with 2 spacing bars; range 1,12÷48m <sup>3</sup> /h (max. 56m <sup>3</sup> /h)
<b>250</b>	DN250 (10"); range 1,29÷68m <sup>3</sup> /h (max. 76m <sup>3</sup> /h)
<b>300</b>	DN300 (12") - with 2 spacing bars; range 2,27÷136m <sup>3</sup> /h (max.150m <sup>3</sup> /h)
<b>350</b>	DN350 (14") - with 2 spacing bars; range 3÷161m <sup>3</sup> /h (max. 192m <sup>3</sup> /h) Wooden crate packing required (650D023A)
<b>400</b>	DN400 (16"); range 2,23÷213m <sup>3</sup> /h (max. 240m <sup>3</sup> /h) Wooden crate packing required (650D015A)
<b>450</b>	DN450 (18") - with 3 spacing bars; range 3,8÷330m <sup>3</sup> /h (max. 365m <sup>3</sup> /h) Wooden crate packing required (650D015A)
<b>500</b>	DN500 (20") - with 3 spacing bars; range 5,34÷468m <sup>3</sup> /h (max.532m <sup>3</sup> /h) Wooden crate packing required (650D015A)
<b>600</b>	DN600 (24"); range 10÷560m <sup>3</sup> /h (max. 623m <sup>3</sup> /h) Wooden crate packing required (650D014A)
<b>700</b>	DN700 (28"); range 15÷1019m <sup>3</sup> /h (max. 1115m <sup>3</sup> /h) Wooden crate packing required (650D014A)
<b>800</b>	DN800 (32") - with 4 spacing bars; range 18÷1672m <sup>3</sup> /h (max. 1806m <sup>3</sup> /h) Wooden crate packing required (650D014A)
Construction materials	
<b>A</b>	Fiberglass
<b>Z</b>	Special
Accessories	
<b>0</b>	None
<b>2</b>	PTU50/51 holder (835A027R)
<b>3</b>	FLOWMETER holder (835B027R)
<b>9</b>	Special



## BS VENTURI CHANNEL Hydraulic modeler

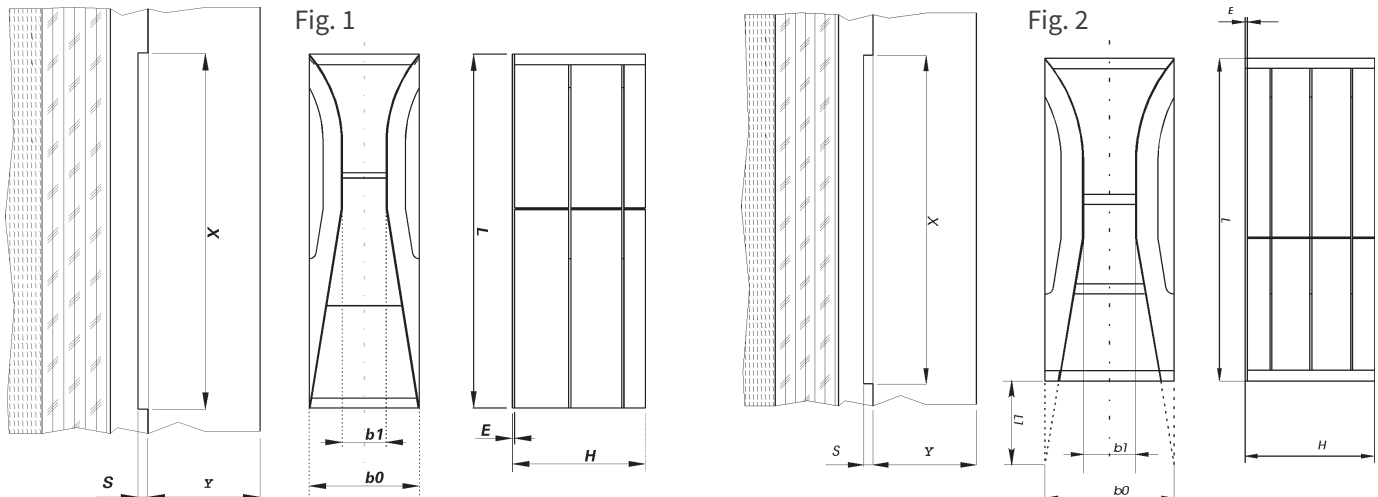
Installation in rectangular channels

Flow rates 1 ÷ >7700 m<sup>3</sup>/h

Low load losses

Matching to all SGM-LEKTRA systems for flow measurement in open channels

SGM-LEKTRA has developed its own flumes family called BS... in co-operation with the Pavia University Hydraulic Division. BS flume is a special Venturi with flat bottom and ready to be lodged in a pre-existing rectangular channel. BS VENTURI are suitable for use in irrigation systems, industrial waste water treatment, sewage, and in general for turbid waters; the flat bottom without protrusions has a self-cleaning effect, does not favor the debris deposit and can be easily inserted in rectangular ducts existing. The submerged flow (ratio from downstream head and upperstream head) can be well tolerated. The practical limit of submergence for all sizes is about 90%.



Misure d'ingombro (In mm) e di installazione Canali Venturi  
( vedi fig.1 per i modelli BS150+500 e fig.2 per i modelli BS600+1000)

Modello	Quote	L	L1	H	E	b0	b1	X	Y	S
BS150		479		270	5	150	60	483	280	7
BS200		639		240	5	200	80	645	250	7
BS300		958		360	6	300	120	968	370	8
BS400		1277		480	8	400	160	1281	490	10
BS500		1597		600	8	500	200	1617	610	10
BS600		1500	416	720	10	600	240	1520	740	14
BS800		2000	555	900	10	800	320	2030	920	14
BS1000		2500	694	1000	15	1000	400	2550	1020	19



**BS** Pre-fabricated Venturi  
Installation in rectangular channels

Range / Dimensions	
<b>150</b>	Qmin=1 m <sup>3</sup> /h - 0,28 l/sec; Qmax=50 m <sup>3</sup> /h - 13,8 l/s Length 0,480m; Width 0,15m, Height 0,27m
<b>200</b>	Qmin=2 m <sup>3</sup> /h - 0,55 l/sec; Qmax=55 m <sup>3</sup> /h - 15,27 l/s Length 0,639m; Width 0,2m; Height 0,24m
<b>300</b>	Qmin=3 m <sup>3</sup> /h - 0,83 l/sec; Qmax=150 m <sup>3</sup> /h - 41,6 l/s Length 0,958m; Width 0,3m; Height 0,36m Wooden crate packing required (650D016A)
<b>400</b>	Qmin=10 m <sup>3</sup> /h -2,7 l/sec; Qmax=310 m <sup>3</sup> /h - 86,1 l/s Length 1,278m; Width 0,4m; Height 0,48m Wooden crate packing required (650D017A)
<b>500</b>	Qmin=20 m <sup>3</sup> /h - 5,5 l/sec; Qmax=500 m <sup>3</sup> /h - 138,8 l/s Length 1,598m; Width 0,5m; Height 0,60m Wooden crate packing required (650D018A)
<b>600</b>	Qmin=25 m <sup>3</sup> /h - 7,15 l/sec; Qmax=850 m <sup>3</sup> /h - 236 l/s Length 1,5m; Width 0,6m; Height 0,72m Wooden crate packing required (650D019A)
<b>800</b>	Qmin=50 m <sup>3</sup> /h - 13,9 l/sec; Qmax=1400 m <sup>3</sup> /h - 389 l/s Length 2m; Width 0,8m; Height 0,90m Wooden crate packing required (650D020A)
<b>101</b>	Qmin=60 m <sup>3</sup> /h - 16,6 l/sec; Qmax=2250 m <sup>3</sup> /h - 625 l/s Length 2,5m; Width 1m; Height 1m Wooden crate packing required (650D021A)
<b>x00</b>	Couple of lateral restrictions for channels Length 2,5m; width 0,3m; height 1m
Construction materials	
<b>P</b>	Polypropilene (PP)
<b>Z</b>	Special
Accessories	
<b>A</b>	None
<b>Z</b>	Special



# Analytical

Analysis of water is essential in ensuring the safety, quality and sustainability of water resources, both for human consumption and for industrial processes. Technological advances have resulted in digital sensors becoming firmly established as a reliable and effective solution for measuring key parameters such as pH, conductivity, turbidity, suspended solids, dissolved oxygen and redox. These instruments are used particularly in water treatment plants and are a step forward in the accuracy and reliability in analysis, opening up new opportunities in many diverse fields.

Digital sensors provide more accurate measurements than conventional analogue instruments. Their advanced technology makes them less susceptible to environmental interference and temperature variations, delivering more stable, reliable data even in the harshest of water environments. Results of measurements are displayed directly on digital control units, which simplifies data reading, interpretation and management.

Depending on the parameters that need to be measured, SGM-Lektra delivers optimal solutions to meet plant and monitoring requirements.



	<b>104C pH</b>	<b>114C conductivity</b>	<b>114CH high conductivity</b>	<b>164CH high turbidity</b>
<b>Materials</b>	Electrode body in Glass and PPS PPS probe holder Viton® O-Rings Teflon® electrode diaphragm	Probe body in PVC Graphite electrodes	Electrode body in Epoxy and PPS PPS probe holder O-Rings in Viton®	Probe body in PVC Special glass optic with oleo-pho- bic treatment OR in Silicone and NBR
<b>Measurement method</b>	Electrolyte gel	conductive with two electrodes	Conduktivita a 4 elettrodi in grafite	90 ° scattering of light
<b>Thread</b>	3/4 "NPT on both sides	1" GAS BSP	3/4" NPT	1" GAS
<b>Measuring range</b>	0÷14pH	0,00÷20000 µS	1 µS/cm ÷ 200mS/cm (K=0.55 nominal)	0÷1000NTU
<b>Accuracy</b>	±0,05pH	± 0.5 µS f.s 20 µS ± 5 µS f.s 200 µS ± 50 µS f.s 2000 µS ± 500 µS f.s. 20000 µS	± 1 µS/cm	±2% range 0÷10 NTU (± 0,2 NTU) ±5% range 0÷100 NTU (± 5 NTU) ±10% range 0÷1000NTU(± 100NTU)
<b>Temperature probe</b>	NTC 30K	With internal NTC sensor	With internal NTC sensor	-
<b>Operating temperature</b>	0÷ +100°C	0÷50 °C	-5÷100 °C	0÷50 °C
<b>Mechanical protection</b>	IP68	IP68	IP68	IP68
<b>Protocol</b>	MODBUS RTU	MODBUS RTU	MODBUS RTU	MODBUS RTU
<b>Std. cable length</b>	10m	10m	10m	10m
<b>Power supply</b>	24Vdc	12÷24Vdc	12÷24Vdc	12÷24Vdc

	<b>MCA800</b>
<b>Max. sensors</b>	2
<b>Housing material</b>	ABS
<b>Mechanical installation</b>	Wall, pipe or DIN rail mounting
<b>Protection degree</b>	IP66
<b>Keyboard</b>	5 push buttons
<b>Display</b>	320x240 matrix color LCD with backlight
<b>Working temperature</b>	-20 + +60°C
<b>Power supply</b>	85÷265 Vac; 20÷30Vdc
<b>Analog output</b>	n.2 configurable isolated 4÷20mA
<b>Relays output</b>	N.5 FULLY CONFIGURABLE RELAY (5A 250VAC)
<b>Digital output</b>	n.2 open collector (max. 24Vdc 50mA)
<b>Digital communication</b>	MODBUS RTU
<b>Datalogger</b>	On Pen Drive USB; max.32GB (FAT32)



	<b>164CL low turbidity</b>	<b>164CU suspended solids</b>	<b>324C dissolved oxygen</b>	<b>604C Redox</b>
<b>Materials</b>	"Probe body in PVC Special glass optic with oleo-phobic treatment OR in Viton and Silicone	Body in SS316 (optional in PVC) Windows in epoxy resin OR in Viton	Probe body in SS316 (PVC body opt) Special optical glasses NBR and Silicone O-Rings	Electrode body in Glass and PPS PPS probe holder Viton® O-Rings Teflon® electrode diaphragm
<b>Measurement method</b>	90 ° scattering of light	Absorption of light	Luminescence optic	Electrolyte gel
<b>Thread</b>	1" GAS	1" GAS	3/4" BSP	3/4 "NPT on both sides
<b>Measuring range</b>	"0÷10NTU 0÷100NTU "	0-30 gr/l	0,00÷20,00 mg/L	-1500mV ÷ +1500mV
<b>Accuracy</b>	±1% range 0÷10NTU ±2% range 0÷50NTU ±5% range 0÷100NTU	± 0.3 gr/l	± 0,2 mg/L when < 5mg/L ± 0,3 mg/L when > 5mg/L	± 5mV
<b>Temperature probe</b>	-	-	With internal NTC sensor	NTC 30K
<b>Operating temperature</b>	0÷50 °C	0÷50 °C	0÷50 °C	0÷ +100°C
<b>Mechanical protection</b>	IP68	IP68	IP68	IP68
<b>Protocol</b>	MODBUS RTU	MODBUS RTU	MODBUS RTU	MODBUS RTU
<b>Std. cable length</b>	10m	10m	10m	10m
<b>Power supply</b>	12÷24Vdc	12÷24Vdc	12÷24Vdc	24Vdc



## MCA800

Unit for the measurement of pH, Redox, turbidity, suspended solids, conductivity, dissolved oxygen

2 independent Analytical measurements

2 analog output 4+20mA

5 fully configurable relay

2 open collector digital output

Datalogger via Pen Drive USB (optional)

MCA800 unit suitable for Analytical in wastewater plants. MCA800 can be connected to SGM-LEKTRA digital Analytical sensors for the measurement of pH, Redox, turbidity, suspended solids, conductivity, dissolved oxygen. MCA800 is suitable for direct connection of up to 2 digital Analytical sensors via MODBUS RTU.

### Technical Feature

#### Housing material

ABS

#### Mechanical installation

Wall, pipe or DIN rail mounting

#### Protection degree

IP66

#### Keyboard

5 push buttons

#### Display

320x240 matrix color LCD with backlight

#### Electrical connection

Internal connectors

#### Working temperature

-20 + +60°C

#### Power supply

85÷265 Vac; 20÷30Vdc

#### Power consumption

Max. 10W

#### Analog output

n.2 configurable isolated 4+20mA

#### Relays output

n.5 fully configurable relay (5A 250Vac)

#### Digital output

n.2 open collector (max. 24Vdc 50mA)

#### Digital communication

MODBUS RTU

#### Datalogger

on Pen Drive USB; max.32GB (FAT32)

#### Matching sensors

104C - PH

114C - Conductivity

114CH - High Conductivity

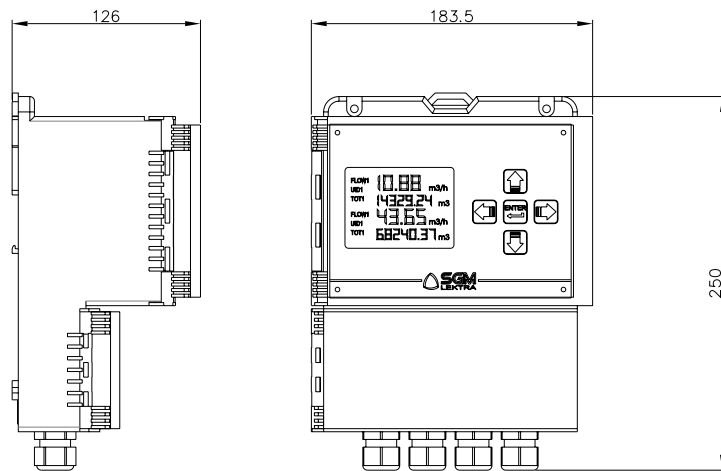
164CH - High Turbidity

164CL - Low Turbidity

164CU - Suspended Solids

324C - Dissolved Oxygen

604C - Redox



**MCA800**

Control unit for analytical digital probes

- Can accept up to 2 MODBUS RTU sensors [pH, Redox, turbidity, suspended solids (only 1), conductivity, dissolved oxygen]
- Matrix 320 x 240 backlit color LCD display
- 5 calibrating push-buttons
- 5 relays with change over contact (SPDT)
- Wall or DIN rail mounting
- Output: 2 optoisolated 4=20mA + 2 optoisolated open collector
- Slave MODBUS RTU port for data transmission
- IP66 mechanical protection - temperature range : -20 ÷ +60°C

Version	
<b>A</b>	Standard with data logger
<b>B</b>	Neutral (no SGM logo) with data logger
<b>C</b>	Standard without data logger
<b>D</b>	Neutral (no SGM logo) without data logger
<b>Z</b>	Special
Power supply	
<b>1</b>	85÷265Vac 50÷60Hz
<b>4</b>	20÷30Vdc/Vac (not for the connection with 164CU - Suspended Solids)



## 104C PH sensor

Measurement accuracy:  $\pm 0.5\%$   
 Digital measurement method  
 Measurement range 0÷14pH  
 Integrated temperature sensor  
 Max operating temperature 100°C  
 Max pressure 11bar  
 Measurement transmission via RS485  
 Porous Teflon® septum  
 MODBUS RTU digital communication  
 Combine with MCA800 control unit

Sensor for measuring pH and temperature in pure water, wastewater treatment plants, processes with suspended solids, processes with pollutants, galvanic processes. The 104C sensor, connected to the MCA800, is suitable for pH measurements in various applications. The porous Teflon® septum resists encrustations and chemical attack. The new capillary temperature sensor design places the NTC sensor behind the pH sensitive membrane for very accurate temperature measurement and compensation.

### Technical Feature

#### Materials

Electrode body in Glass and PPS  
 PPS probe holder  
 Viton® O-Rings  
 Teflon® electrode diaphragm

#### Electrolyte

Electrolyte gel

#### Probe holder thread

$\frac{3}{4}$  "NPT male

#### Probe threads

PG13.5 male

#### Dimensions (LxHxP)

27x213x27mm

#### Measuring range

0÷14pH

#### Method of measurement

Digital

#### Resolution

0,01 pH

#### Accuracy

$\pm 0,05\text{pH}$

#### Repeatability

$\pm 0.05 \text{ pH}$

#### Response time

pH 4..7<30s

#### Temperature probe

NTC 30K

#### Temperature Resolution

0.1°C

#### Temperature Accuracy

$\pm 0.5^\circ\text{C}$

#### Operating temperature

0÷ +100°C

#### Maximum operating pressure

11bar

#### Minimum operating conductivity

50 $\mu\text{S/cm}$

#### Protocol

MODBUS RTU

#### Cable length

10m integral with the sensor (others on request)

#### Electric absorption

<1W

#### Power supply

24Vdc

**104C**

pH digital sensor

For the connection to MCA800 via MODBUS RTU  
Glass electrode and PPS bodies - Probe holder in PPS  
NTC 30K temperature sensor built-in  
Measuring range: 0÷14pH  
Resolution: 0,05 pH; Accuracy: ± 0.05 pH  
Operating temperature: 0÷100°C (212°F)  
Minimum conductivity: 50 µS/cm  
Thread: 3/4" NPT M (probe holder)  
Mechanical protection: IP68 sensor+cable

Cable length	
1	Standard 10m
9	Special

Probe holder	
A	None
B	Immersion style in PP. Dim.: (Ø x l) 42 x 570 mm.
C	Immersion style in PP. Dim.: (Ø x l) 42 x 1070 mm.
D	Immersion style in PP. Dim.: (Ø x l) 42 x 1570 mm.
E	Immersion style in PP. Dim.: (Ø x l) 42 x 2070 mm.
F	Immersion style in PP. Dim.: (Ø x l) 42 x 2570 mm.
G	For by-pass installation - 2 bar max. , 40 °C, transparent beaker in PMMA - Inlet-Outlet dimensions: 8x12mm
Z	Special

Accessories	
1	None
2	Kit for automatic electrode rinsing - SS body (only for immersion probe holders)



## 114C Digital conductivity sensor

Measurement accuracy  $\pm 0.5\mu\text{S}$  to  $\pm 500\mu\text{S}$   
 Two-electrode measurement method with temperature compensation.  
 Measurement range from  $20\mu\text{S}$  to  $20000\mu\text{S}$   
 Max operating temperature  $50^\circ\text{C}$   
 Max pressure 10 bar  
 Measurement transmission via RS485  
 MODBUS RTU digital communication  
 Combine with MCA800 control unit

The 114C sensor, connected to the MCA800, is used for conductivity measurement in pure and process water. Reliable two-electrode conductive measurement method thanks to the use of graphite electrodes with temperature compensation.

### Technical Feature

#### Materials

Probe body in PVC  
 Graphite electrodes

#### Threads

1" GAS BSP

#### Measurement intervals

0.0  $\mu\text{S}$  to 20,000  $\mu\text{S}$

#### Method of measurement

conductive with two electrodes

#### Calibration method

on 1 point with certified standard  
 conductive solutions

#### Accuracy

$\pm 0.5\mu\text{S}$  f.s  $20\mu\text{S}$   
 $\pm 5\mu\text{S}$  f.s  $200\mu\text{S}$   
 $\pm 50\mu\text{S}$  f.s  $2000\mu\text{S}$   
 $\pm 500\mu\text{S}$  f.s.  $20000\mu\text{S}$

#### Resolution

0.01  $\mu\text{S}$  f.s  $20\mu\text{S}$   
 0.1  $\mu\text{S}$  f.s  $200\mu\text{S}$   
 1  $\mu\text{S}$  f.s  $2000\mu\text{S}$   
 10  $\mu\text{S}$  f.s.  $20000\mu\text{S}/\text{L}$

#### Repeatability

$\pm 0.1\mu\text{S}$  f.s  $20\mu\text{S}$ ,  
 $\pm 0.5\mu\text{S}$  f.s  $200\mu\text{S}$ ,  
 $\pm 5\mu\text{S}$  f.s  $2000\mu\text{S}$ ,  
 $\pm 50\mu\text{S}$  f.s.  $20000\mu\text{S}$  mg/L

#### Response time

T90<60s

#### Maximum refresh time

<1 second

#### Operating temperature

0÷50 °C

#### Maximum operating pressure

10 bar

#### Electric absorption

2W

#### Mechanical protection

IP68 Sensor + cable

#### Cable length

10m integral with the sensor (others  
 on request)

#### Power supply

12÷24Vdc

#### Protocol

MODBUS RTU

#### Temperature Compensation

With internal NTC sensor

#### Diameter of the luminophore

10mm

#### Dimensions (LxHxP)

33x220x33mm



**114C** Conductivity digital sensor

For the connection to MCA800 via MODBUS RTU  
Method of measurement: with two conductive electrodes  
NTC temperature sensor built-in  
PVC body - Graphite electrodes  
Measuring range: 0.00...20/200/ 2000/ 20000  $\mu$ S  
Resolution: 0.01/ 0.1/ 1/ 10 (range 0...20/ 200/ 2000/ 20000)  $\mu$ S  
Accuracy:  $\pm$  2.5 % f.s.  
Operating temperature: 0÷50°C (122°F)  
Thread: 1"G  
Mechanical protection: IP68 sensor+cable

Cable length	
<b>1</b>	Standard 10m
<b>9</b>	Special

Immersion probe holder	
<b>A</b>	None
<b>B</b>	PP body. Dim.: ( $\varnothing$ x l) 63 x 570 mm. With terminal flange for electrode protection.
<b>C</b>	PP body. Dim.: ( $\varnothing$ x l) 63 x 1070 mm. With terminal flange for electrode protection.
<b>D</b>	PP body. Dim.: ( $\varnothing$ x l) 63 x 1570 mm. With terminal flange for electrode protection.
<b>E</b>	PP body. Dim.: ( $\varnothing$ x l) 63 x 2070 mm. With terminal flange for electrode protection.
<b>F</b>	PP body. Dim.: ( $\varnothing$ x l) 63 x 2570 mm. With terminal flange for electrode protection.
<b>Z</b>	Special

Accessories	
<b>0</b>	None
<b>1</b>	Kit for automatic electrode rinsing - SS body





## 114CH Digital high conductivity sensor

Measurement accuracy  $\leq 4\%$  on the reading point  
 Four-electrode measurement method with temperature compensation  
 Measurement range from  $1\mu\text{S} / \text{cm}$  to  $200\text{mS} / \text{cm}$   
 Max. operating temperature  $100^\circ\text{C}$   
 Maximum pressure 5 bar  
 Measurements transmission via RS485  
 MODBUS RTU digital communication  
 Combine with MCA800 control unit

The 114CH sensor, connected to the MCA800 unit, is used for conductivity measurement in waste, industrial and recirculating water. Reliable 4-electrode conductive measurement method thanks to the use of graphite electrodes with compensation of temperature.

### Technical Feature

#### Materials

Electrode body in Epoxy and PPS  
 PPS probe holder  
 Viton® O-ring  
 Graphite electrodes

#### Probe holder thread

$\frac{3}{4}$  "NPT male

#### Probe threads

PG13.5 male

#### Measurement intervals

$1\mu\text{S} / \text{cm}$  to  $200\text{mS} / \text{cm}$  ( $K = 0.55$  nominal)

#### Measurement method

conductive with 4 electrodes

#### Calibration method

on 1 point or 2 points with certified standard conductive solutions

#### Accuracy

$\leq 4\%$  on the reading point

#### Resolution

$1\mu\text{S} / \text{cm}$

#### Repeatability

$\leq 0.2\%$  on the measuring point

#### Response time

5s

#### Maximum refresh time

1 second

#### Operating temperature

$-5 \div 100^\circ\text{C}$  in non-frozen water

#### Maximum operating pressure

5 bar

#### Temperature sensor

PT100

#### Electric absorption

$< 250\text{mW}$

#### Mechanical protection

IP68 Sensor + cable

#### Cable length

10m integral with the sensor (others on request)

#### Powe supply

$12 \div 24\text{Vdc}$

#### Protocol

MODBUS RTU

#### Dimensions (LxHxP)

27x213x27mm



**114CH** High conductivity digital sensor  
For the connection to MCA800 via MODBUS RTU  
PPS and Epoxy electrode body  
Probe holder in PPS  
PT100 temperature sensor built-in  
Measuring range: 1  $\mu$ S/cm - 200 mS/cm  
Resolution: 1  $\mu$ S/cm - Accuracy: 4%  
Operating temperature: -5  $\pm$  100°C (212°F)  
Max operating pressure: 5bar  
Thread: 3/4" NPT M (probe holder)  
Mechanical protection: IP68 sensor+cable

Cable length	
1	Standard 10m
9	Special

Probe holder	
A	None
B	Immersion style in PP. Dim.: ( $\varnothing$ x l) 42 x 570 mm.
C	Immersion style in PP. Dim.: ( $\varnothing$ x l) 42 x 1070 mm.
D	Immersion style in PP. Dim.: ( $\varnothing$ x l) 42 x 1570 mm.
E	Immersion style in PP. Dim.: ( $\varnothing$ x l) 42 x 2070 mm.
F	Immersion style in PP. Dim.: ( $\varnothing$ x l) 42 x 2570 mm.
G	For by-pass installation - 2 bar max., 40 °C, transparent beaker in PMMA. Inlet-Outlet dim. 8x12mm (SP517A)
Z	Special

Accessories	
0	None
1	Kit for automatic electrode rinsing (SP515P) - SS body (only for immersion probe holders)



## 164CH High turbidity sensor

Sensor for the measurement of turbidity in pure and process water up to 4000 NTU.

Measurement accuracy  $\pm 2\%$  to  $\pm 10\%$

90 ° light scattering measurement method

Measurement range 1000÷4000 NTU

Max operating temperature 75°C

Max pressure 4 bar

Measurement transmission via RS485

MODBUS RTU digital communication

Combine with MCA800 control unit

The 164CH sensor, connected to the MCA800, is used for the measurement of turbidity in pure and drinking water, in primary water, industrial and recirculating water. The measurement is performed using 90 ° light scattering, as per ISO 7027 / EN 27027.

### Technical Feature

#### Materials

Probe body in PVC | SS316  
Special glass optic with oleo-phobic treatment  
OR in Silicone and NBR

#### Threads

1" GAS

#### Measuring ranges

0÷1000NTU | 0÷4000NTU

#### Method of measurement

90 ° scattering of light

#### Calibration method

1 point per straight

#### Accuracy

$\pm 2\%$  at the measuring point range

0-1000NTU( $\pm 100$  NTU)

$\pm 5\%$  at the measuring point range

0-4000NTU( $\pm 100$  NTU)

#### Resolution

0,01 NTU

#### Repeatability

$\pm 5$  NTU range 1000NTU

$\pm 20$  NTU range 4000NTU

#### Operating temperature

0÷50 °C | 0÷75 °C in SS316

#### Maximum operating pressure

4 bar

#### Electric absorption

3W

#### Mechanical protection

IP68 Sensor + cable

#### Cable length

10m integral with the sensor

#### Power supply

12÷24Vdc

#### Protocol

MODBUS RTU

#### Dimensions (LxHxP)

42x231x42mm



**164CH** High concentration Turbidity digital sensor

For the connection to MCA800 via MODBUS RTU  
Measuring principle: 90°scattering light, infrared pulsed method  
Measuring range: 0÷1000 NTU / 0÷4000 NTU (opt.)  
Resolution: 0,01 NTU  
Accuracy: ±2% for range 0÷1000 NTU; ±5% for range 0÷4000 NTU  
Operating temperature: 0÷50°C (122°F) - 0÷75°C (167°F) with SS316  
Thread: 1"G  
Mechanical protection: IP68 sensor+cable

Sensor material	
1	SS316 + PVC
2	Completely in SS316

Installation method	
A	Immersion
B	Insertion (with probe holder H)

Cable length	
1	Standard 10m
9	Special

Probe holder	
A	None
B	Immersion style - PP material. Dim.: (Ø x l) 42 x 570 mm
C	Immersion style - PP material. Dim.: (Ø x l) 42 x 1070 mm
D	Immersion style - PP material. Dim.: (Ø x l) 42 x 1570 mm
E	Immersion style - PP material. Dim.: (Ø x l) 42 x 2070 mm
F	Immersion style - PP material. Dim.: (Ø x l) 42 x 2570 mm
H	Insertion style - Ball valve assembly DN40 with safety lock, stainless steel material, Viton O-ring
Z	Special

Accessories	
0	None
1	Kit for automatic electrode rinsing - SS body (only for immersion probe holders)



## 164CL Low turbidity sensor

Sensor for the measurement of turbidity in pure and process water up to 100 NTU.

Measurement accuracy  $\pm 1\%$  to  $\pm 5\%$

90 ° light scattering measurement method

Measurement range from 10NTU to 100NTU

Max operating temperature 50 ° C

Max pressure 4 bar

Measurement transmission via RS485

MODBUS RTU digital communication

Combine with MCA800 control unit

The 164CL sensor, connected to the MCA800, is used for the measurement of turbidity in pure and drinking water, in primary water, industrial and recirculating water.

The measurement is performed using 90 ° light scattering, as per ISO 7027 / EN 27027.

### Technical Feature

#### Materials

Probe body in PVC  
Special glass optic with oleo-phobic treatment  
OR in Viton and Silicone

#### Threads

1" GAS

#### Measuring ranges

0÷10NTU

0÷100NTU

#### Method of measurement

90 ° scattering of light

#### Calibration method

1 point and / or 2 points per scale

#### Accuracy

$\pm 1\%$  at the measuring point range\_0-10 NTU

$\pm 2\%$  at the measuring point range\_0-50 NTU

$\pm 5\%$  at the measuring point range\_0-100 NTU

#### Resolution

0,01 NTU range\_0-10NTU(0.001NTU up to9,999NTU)

0,1 NTU range\_0-100NTU

#### Repeatability

$\pm 0.05$  NTU f.s 10NTU

$\pm 0.5$  NTU f.s 100NTU

#### Response time

T90<60s

#### Operating temperature

0÷50 °C

#### Maximum operating pressure

4 bar

#### Electric absorption

3W

#### Mechanical protection

IP68 Sensor + cable

#### Cable length

10m integral with the sensor

#### Power supply

12÷24Vdc

#### Protocol

MODBUS RTU

#### Dimensions (LxHxP)

42x231x42mm



**164CL** Low concentration Turbidity digital sensor

For the connection to MCA800 via MODBUS RTU  
Measuring principle: 90°scattering light, infrared pulsed method  
Measuring range: 0÷10 NTU / 0÷100 NTU  
Resolution: 0,01 NTU / 0,1 NTU  
Accuracy: ±1% f 0÷10 NTU; ±5% 0÷100 NTU  
Operating temperature: 0÷50°C (122°F)  
Thread: 1"G  
Mechanical protection: IP68 sensor+cable

Sensor material	
1	PVC
2	SS316 (for insertion mounting)

Installation method	
A	Immersion
B	Insertion (with probe holder H)
C	By-pass

Cable length	
1	Standard 10m
9	Special

Probe holder	
A	None
B	Immersion style - PP material. Dim.: (Ø x l) 42 x 570 mm
C	Immersion style - PP material. Dim.: (Ø x l) 42 x 1070 mm
D	Immersion style - PP material. Dim.: (Ø x l) 42 x 1570 mm
E	Immersion style - PP material. Dim.: (Ø x l) 42 x 2070 mm
F	Immersion style - PP material. Dim.: (Ø x l) 42 x 2570 mm
G	For by-pass installation - 2 bar max. , 40 °C, black beaker in PP - Inlet-Outlet dimensions: 8x12mm
H	Insertion style - Ball valve assembly DN40 with safety lock, stainless steel material, Viton O-ring
Z	Special

Accessories	
0	None
1	Kit for automatic electrode rinsing - SS body (only for immersion probe holders)



## 164CU

### Suspended solids turbidity sensor

Sensor for optical measurement of suspended solids in industrial and process waters up to 30 g/l.

Measurement accuracy  $\pm 0.3\text{gr/l}$

Light absorbing measurement method

Measurement range  $0 \div 30 \text{ gr/l}$

Max operating temperature  $50^\circ \text{C}$

Max pressure 4 bar

Measurement transmission via RS485

MODBUS RTU digital communication

Combine with MCA800 control unit

The 164CU sensor, connected to the MCA800, is used for the optical measurement of suspended solids in industrial and process water up to 30 g / l.

The probe uses the light absorbing measurement method.

### Technical Feature

#### Materials

Body in AISI 316 (optional in PVC)

Windows in epoxy resin

OR in Viton

#### Threads

1" GAS

#### Measuring ranges

0-30 gr/l

#### Method of measurement

Absorption of light

#### Dimensions (LxHxP)

42x231x42mm

#### Calibration method

by points

#### Accuracy

$\pm 0.3 \text{ gr/l}$

#### Resolution

0.1 gr/l

#### Repeatability

$\pm 0.5 \text{ gr/l}$

#### Response time

T90<60s

#### Operating temperature

$0 \div 50^\circ \text{C}$

#### Maximum operating pressure

4 bar

#### Electric absorption

3W

#### Mechanical protection

IP68 Sensor + cable

#### Cable length

10m integral with the sensor

#### Power supply

$12 \div 24\text{Vdc}$

#### Protocol

MODBUS RTU



**164CU** Suspended Solids digital sensor  
For the connection to MCA800 via MODBUS RTU  
Measuring principle: light absorption, infrared pulse light method  
Measuring range: 0÷30 g/l normal sludge  
Resolution: 0.1 g/l - Accuracy: ± 0.3 g/l  
Operating temperature: 0÷50°C (122°F)  
Thread: 1"G  
Mechanical protection: IP68 Sensor+cable

Sensor material	
1	PVC
2	SS316

Installation method	
A	Immersion
B	Insertion (with probe holder H)

Cable length	
1	Standard 10m
9	Special

Probe holder	
A	None
B	Immersion style - PP material. Dim.: (Ø x l) 42 x 570 mm
C	Immersion style - PP material. Dim.: (Ø x l) 42 x 1070 mm
D	Immersion style - PP material. Dim.: (Ø x l) 42 x 1570 mm
E	Immersion style - PP material. Dim.: (Ø x l) 42 x 2070 mm
F	Immersion style - PP material. Dim.: (Ø x l) 42 x 2570 mm
H	Insertion style - Ball valve assembly DN40 with safety lock, stainless steel material, Viton O-ring
Z	Special

Accessories	
0	None
1	Kit for automatic electrode rinsing - SS body (only for immersion probe holders)





## 324C Dissolved oxygen sensor

Sensor for optical measurement of dissolved Oxygen in wastewater, primary, industrial and recirculation water treatment plants.

Measurement accuracy:  $\pm 0,2/0,3$  mg/l

Optical luminescence measurement method

Measurement range from 0.00 mg / L to 20.00 mg / L

Max operating temperature 50°C

Max pressure 5 bar

Measurement transmission via RS485

MODBUS RTU digital communication

Combine with MCA800 control unit

The 324C sensor, connected to the MCA800, is used for the optical measurement of oxygen in pure and process water. The measuring principle is based on the dynamic reduction of luminescence by molecular oxygen..

### Technical Feature

#### Materials

Probe body in AISI 316 (PVC body optional)

Special optical glasses

NBR and Silicone O-Rings

#### Thread

3/4" BSP

#### Measurement intervals

From 0.00 mg / L to 20.00 mg / L

#### Method of measurement

Luminescence optic

#### Calibration method

Calibration in the air:

1-point calibration, 100% oxygen saturated water

Calibration with sample: comparison with a std instrument.

Calibration on 0% O<sub>2</sub> solution:

1 point calibration, specific solution at 0% oxygen

#### Accuracy

$\pm 0.2$  mg / L when  $<5$ mg / L

$\pm 0.3$  mg / L when  $> 5$ mg / L

#### Resolution

0,01 mg/L

#### Repeatability

$\pm 0,1$  mg/L

#### Response time

T90<60s

#### Maximum refresh time

< 1 second

#### Operating temperature

0÷50 °C

#### Maximum operating pressure

5 bar

#### Electric absorption

2W

#### Mechanical protection

IP68 Sensor + cable

#### Cable length

10m integral with the sensor (others on request)

#### Power supply

12÷24Vdc

#### Protocol

MODBUS RTU

#### Movement of water

Unnecessary

#### Temperature Compensation

With internal NTC sensor

#### Diameter of the luminophore

10mm

#### Dimensions (LxHxP)

33,4x196,3x33,4mm

**324C**

Dissolved Oxygen digital sensor

For the connection to MC800 via MODBUS RTU

Measuring method: dynamic luminescence

NTC temperature sensor built-in

Measuring range: 0÷20 mg/l

Accuracy: ± 0,2 mg/l when &lt; 5mg/L / ± 0,3 mg/l when &gt; 5mg/L

Operating temperature: 0÷50°C (122°F)

Thread: 3/4"G

Mechanical protection: IP68 sensor+cable

Sensor material	
1	SS316
2	PVC

Cable length	
A	Standard 10m
Z	Special

Immersion probe holder	
A	None
B	PP body Dim.: (Ø x l) 42 x 570 mm. Complete with PVC 45° fittings
C	PP body Dim.: (Ø x l) 42 x 1070 mm. Complete with PVC 45° fittings
D	PP body Dim.: (Ø x l) 42 x 1570 mm. Complete with PVC 45° fittings
E	PP body Dim.: (Ø x l) 42 x 2070 mm. Complete with PVC 45° fittings
F	PP body Dim.: (Ø x l) 42 x 2570 mm. Complete with PVC 45° fittings
Z	Special

Accessories	
0	None
1	Kit for automatic electrode rinsing - SS body



## 604C Redox sensor

Sensor for ORP and temperature measurement in pure water, wastewater treatment plants, processes with suspended solids, processes with pollutants, galvanic processes.

Measurement accuracy:  $\pm 5\text{mV}$

Digital measurement method

Measue range  $-1500\text{mV} \div +1500\text{mV}$

Integrated temperature sensor

Max operating temperature  $100^{\circ}\text{C}$

Max pressure 11bar

Measurement transmission via RS485

Porous Teflon<sup>®</sup> septum

MODBUS RTU digital communication

Combine with MCA800 control unit

The 604C sensor, connected to the MCA800, is suitable for Redox measurements in various applications. The porous Teflon<sup>®</sup> septum resists encrustations and chemical attack. The new capillary temperature sensor design places the NTC sensor behind the ORP sensitive membrane for very precise temperature measurement and compensation.

### Technical Feature

#### Materials

Electrode body in Glass and PPS  
PPS probe holder  
Viton<sup>®</sup> O-Rings  
Teflon<sup>®</sup> electrode diaphragm

#### Electrolyte

Electrolyte gel

#### Probe holder thread

$\frac{3}{4}$  "NPT male

#### Probe threads

PG13.5 male

#### Measuring range

$-1500\text{mV} \div +1500\text{mV}$

#### Method of measurement

Digital

#### Resolution

1mV

#### Dimensions (LxHxP)

27x213x27mm

#### Accuracy

$\pm 5\text{mV}$

#### Repeatability

$\pm 1\text{mV}$

#### Response time

<30s

#### Temperature sensor

NTC 30K

#### Temperature Resolution

0.1 $^{\circ}\text{C}$

#### Temperature Accuracy

$\pm 0.5^{\circ}\text{C}$

#### Operating temperature

0 $\div$  +100 $^{\circ}\text{C}$

#### Maximum operating pressure

11bar

#### Minimum operating conductivity

50 $\mu\text{S}/\text{cm}$

#### Protocol

MODBUS RTU

#### Cable length

10m integral with the sensor (others on request)

#### Electric absorption

<1W

#### Power supply

24Vdc

**604C**

## Redox (ORP) digital sensor

For the connection to MCA800 via MODBUS RTU  
Glass electrode and PPS bodies - Probe holder in PPS  
NTC 30K temperature sensor built-in  
Measuring range: -1500.....+1500 mV  
Resolution: 1mV - Accuracy:  $\pm 5$  mV  
Operating temperature: 100°C (212°F)  
Minimum conductivity: 50  $\mu$ S/cm  
Thread: 3/4" NPT M (probe holder)  
Mechanical protection: IP68 sensor+cable

Cable length	
<b>1</b>	Standard 10m
<b>9</b>	Special

Probe holder	
<b>A</b>	None
<b>B</b>	Immersion style in PP. Dim.: ( $\varnothing$ x l) 42 x 570 mm.
<b>C</b>	Immersion style in PP. Dim.: ( $\varnothing$ x l) 42 x 1070 mm.
<b>D</b>	Immersion style in PP. Dim.: ( $\varnothing$ x l) 42 x 1570 mm.
<b>E</b>	Immersion style in PP. Dim.: ( $\varnothing$ x l) 42 x 2070 mm.
<b>F</b>	Immersion style in PP. Dim.: ( $\varnothing$ x l) 42 x 2570 mm.
<b>G</b>	For by-pass installation - 2 bar max. , 40 °C, transparent beaker in PMMA - Inlet-Outlet dimensions: 8x12mm
<b>Z</b>	Special

Accessories	
<b>0</b>	None
<b>1</b>	Kit for automatic electrode rinsing - SS body (only for immersion probe holders)

# Pressure

Pressure measurement is a major consideration in many industrial sectors and technological applications. The ability to accurately and reliably measure the pressure of liquids or gases is essential in process monitoring, safety and operation control.

Pressure measurement has applications in a number of sectors, such as the chemical industry, the integrated water cycle, industrial automation, and the food and beverage industry. Pressure measurement is critical in production processes and day-to-day operations to ensure efficiency and product quality.

SGM-Lektra provides a range of absolute, negative and differential pressure transmitters that guarantee quality, accuracy, trouble-free installation and integration with automation and control systems.



	KPT	CPT
<b>Measuring range</b>	-1 ÷ 400 bar	50 mbar ÷ 40 bar
<b>Temperature of fluid in contact</b>	-30 ÷ +120°C	-40 ÷ +85°C
<b>Materials parties wet parties</b>	SS316L	Ceramic / SS316L
<b>Accuracy</b>	± 0,25%	± 0,2%
<b>Power supply</b>	12 ÷ 42 Vdc	12 ÷ 30 Vdc
<b>Connections to process</b>	Male or Female threaded, NPT or Gas, Sanitary Clamp, vacuum	Male threaded G1"; G1 1/2"
<b>Analog output</b>	4 ÷ 20 mA	4 ÷ 20 mA
<b>Digital communication</b>	no	Hart
<b>Display</b>	yes (opt.)	yes (opt.)
<b>Certifications</b>	no	no
<b>IP rating</b>	IP65	IP65



	SPT	SDT
<b>Measuring range</b>	6 mbar ÷ 600 bar	1 mbar ÷ 20 bar
<b>Temperature of fluid in contact</b>	-40 ÷ +85°C	-40 ÷ +85°C
<b>Materials parties wet parties</b>	SS316L / Hastelloy C	SS 316L / Hastelloy C / Tantalum
<b>Accuracy</b>	± 0,075%	± 0,075%
<b>Power supply</b>	12 ÷ 42 Vdc	12 ÷ 42 Vdc
<b>Connections to process</b>	Male or Female threaded, NPT or Gas, vacuum	¼" NPT
<b>Analog output</b>	4 ÷ 20 mA	4 ÷ 20 mA
<b>Digital communication</b>	Hart	Hart
<b>Display</b>	yes (opt.)	yes (opt.)
<b>Certifications</b>	ATEX	ATEX
<b>IP rating</b>	IP67	IP67



## KPT Compact pressure transmitter

± 0,25% accuracy  
 Best quality / price ratio  
 Threaded, sanitary type or for vacuum process connections

KPT is suitable for continuous liquids level measurement. Typical application are waste water and deep wells. KPT is a pressure transmitter which can be used for liquids, gases, and vapors measurement. The small size pressure transducer offers maximum operational reliability. KPT is a cheap solution for many different applications in all industrial process control.

### Technical Feature

**Power supply**

12÷42Vdc (2-wires)

**Measure range**

Gauge pressure

Max. 0 ÷ 400bar (0 ÷ 40MPa);

Min. 0 ÷ 0.1bar (0 ÷ 10kPa)

Absolute pressure

Max. 0 ÷ 25bar (0 ÷ 2,5MPa);

Min. 0 ÷ 1bar (0 ÷ 100kPa)

Negative pressure

Max. -1 ÷ +39bar (-0.1 ÷ 3,9MPa);

Min. -0.2 ÷ 0,2bar (-20 ÷ 20kPa)

**Output**

4÷20mA

**Overload**

1.5 times the F.S

**Accuracy**

±0.25%

**Stability**

> ±0.1%FS

**Working temperature**

-30° ÷ +120°C

**IP rating**

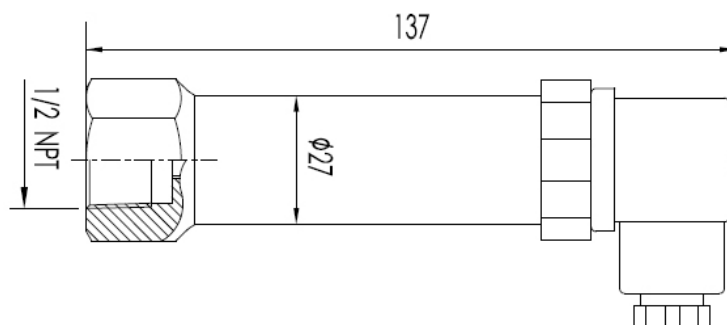
IP65

**Temperature compensation**

-10° ÷ +80°C

**Display**

LCD





**KPT** Pressure transmitter

Protection: IP65 - Working temperature:  $-30 \div 120^{\circ}\text{C}$   
 Power supply:  $12 \div 42\text{Vdc}$  - Wire-loop connection (2 wires)  
 Output:  $4 \div 20\text{mA}$  - Sealed material: viton (FPM)  
 Accuracy:  $\pm 0,25\%$

Version	
<b>D</b>	Standard
<b>E</b>	With flat membrane
<b>S</b>	With sanitary connection
<b>Z</b>	Special

Measure range	
<b>B1</b>	$0 \div 10\text{KPa}$ ( $0 \div 0,1\text{bar}$ ) gauge pr.
<b>C1</b>	$0 \div 25\text{KPa}$ ( $0 \div 0,25\text{bar}$ ) gauge pr.
<b>C2</b>	$0 \div 40\text{KPa}$ ( $0 \div 0,4\text{bar}$ ) gauge pr.
<b>C3</b>	$0 \div 60\text{KPa}$ ( $0 \div 0,6\text{bar}$ ) gauge pr.
<b>D1</b>	$0 \div 100\text{KPa}$ ( $0 \div 1\text{bar}$ ) gauge pr.
<b>D2</b>	$0 \div 160\text{KPa}$ ( $0 \div 1,6\text{bar}$ ) gauge pr.
<b>D3</b>	$0 \div 250\text{KPa}$ ( $0 \div 2,5\text{bar}$ ) gauge pr.
<b>F1</b>	$0 \div 400\text{KPa}$ ( $0 \div 4\text{bar}$ ) gauge pr.
<b>F2</b>	$0 \div 600\text{KPa}$ ( $0 \div 6\text{bar}$ ) gauge pr.
<b>F3</b>	$0 \div 1,0\text{MPa}$ ( $0 \div 10\text{bar}$ ) gauge pr.
<b>F4</b>	$0 \div 1,6\text{MPa}$ ( $0 \div 16\text{bar}$ ) gauge pr.
<b>F5</b>	$0 \div 2,5\text{MPa}$ ( $0 \div 25\text{bar}$ ) gauge pr.
<b>F6</b>	$0 \div 3,0\text{MPa}$ ( $0 \div 30\text{bar}$ ) gauge pr.
<b>F7</b>	$0 \div 4,0\text{MPa}$ ( $0 \div 40\text{bar}$ ) gauge pr. - not available for sanitary versions
<b>G1</b>	$0 \div 6,0\text{MPa}$ ( $0 \div 60\text{bar}$ ) gauge pr. - not available for sanitary versions
<b>G2</b>	$0 \div 10\text{MPa}$ ( $0 \div 100\text{bar}$ ) gauge pr. - not available for sanitary versions
<b>H1</b>	$0 \div 16\text{MPa}$ ( $0 \div 160\text{bar}$ ) gauge pr. - not available for sanitary versions
<b>H2</b>	$0 \div 25\text{MPa}$ ( $0 \div 250\text{bar}$ ) gauge pr. - not available for sanitary versions
<b>H3</b>	$0 \div 40\text{MPa}$ ( $0 \div 400\text{bar}$ ) gauge pr. - not available for sanitary versions
<b>SG</b>	Special gauge pressure
<b>B2</b>	$-20\text{KPa} \div +20\text{KPa}$ ( $-0,2 \div +0,2\text{bar}$ ) gauge pr.
<b>C5</b>	$-100\text{KPa} \div 0\text{KPa}$ ( $-1 \div 0\text{bar}$ ) gauge pr.
<b>D4</b>	$-100\text{KPa} \div +60\text{KPa}$ ( $-1 \div 0,6\text{bar}$ ) gauge pr.
<b>D5</b>	$-100\text{KPa} \div +160\text{KPa}$ ( $-1 \div 1,6\text{bar}$ ) gauge pr.
<b>F8</b>	$-100\text{KPa} \div +300\text{KPa}$ ( $-1 \div +3\text{bar}$ ) gauge pr.
<b>F9</b>	$-100\text{KPa} \div +500\text{KPa}$ ( $-1 \div +5\text{bar}$ ) gauge pr.
<b>FA</b>	$-100\text{KPa} \div +900\text{KPa}$ ( $-1 \div +9\text{bar}$ ) gauge pr.
<b>FB</b>	$-100\text{KPa} \div +1,5\text{MPa}$ ( $-1 \div +15\text{bar}$ ) gauge pr.
<b>FC</b>	$-100\text{KPa} \div +2,4\text{MPa}$ ( $-1 \div +24\text{bar}$ ) gauge pr.
<b>FD</b>	$-100\text{KPa} \div +2,9\text{MPa}$ ( $-1 \div +29\text{bar}$ ) gauge pr.
<b>FE</b>	$-100\text{KPa} \div +3,9\text{MPa}$ ( $-1 \div +39\text{bar}$ ) gauge pr. - not available for sanitary versions
<b>M1</b>	$0 \div 100\text{KPa}$ ( $0 \div 1\text{bar}$ ) absolute pr.
<b>M2</b>	$0 \div 160\text{KPa}$ ( $0 \div 1,6\text{bar}$ ) absolute pr.
<b>M3</b>	$0 \div 250\text{KPa}$ ( $0 \div 2,5\text{bar}$ ) absolute pr.
<b>O1</b>	$0 \div 400\text{KPa}$ ( $0 \div 4\text{bar}$ ) absolute pr.
<b>O2</b>	$0 \div 600\text{KPa}$ ( $0 \div 6\text{bar}$ ) absolute pr.
<b>O3</b>	$0 \div 1,0\text{MPa}$ ( $0 \div 10\text{bar}$ ) absolute pr.
<b>O4</b>	$0 \div 1,6\text{MPa}$ ( $0 \div 16\text{bar}$ ) absolute pr.
<b>O5</b>	$0 \div 2,5\text{MPa}$ ( $0 \div 25\text{bar}$ ) absolute pr.
<b>SA</b>	Special absolute pressure

Membrane / filling liquid	
<b>A</b>	AISI316L / silicone oil
<b>X</b>	AISI316L / vegetable oil
<b>Z</b>	Special

Process connection	
<b>0</b>	Special
<b>1</b>	$\frac{1}{2}$ " NPT female thread SS316
<b>2</b>	$\frac{1}{2}$ " NPT male thread with $\frac{1}{4}$ " NPT female threaded hole SS316
<b>3</b>	M20 x 1,5 male thread SS316
<b>4</b>	$\frac{1}{2}$ " G male thread SS316
<b>5</b>	KF16 ISO 2861 vacuum connection (max 2.5bar)
<b>6</b>	$\frac{1}{4}$ " NPT male thread
<b>7</b>	1" G male thread SS316
<b>8</b>	$\frac{3}{4}$ " G male thread SS316
<b>A</b>	Sanitary: CLAMP DIN 32676 DN25 / ISO 2852 DN25 (max 30bar) SS316
<b>B</b>	Sanitary: CLAMP DIN 32676 DN40 / ISO 2852 DN38 (max 30bar) SS316
<b>C</b>	Sanitary: CLAMP DIN 32676 DN50 / ISO 2852 DN51 SS316 - only for range B - C - D - M

Accessories	
<b>0</b>	None
<b>X</b>	LCD display
<b>Y</b>	LCD display with 2 switch limited points
<b>Z</b>	Special





## CPT Compact pressure transmitter

- ± 0,25% accuracy
- Best quality / price ratio
- Threaded process connections
- Capacitive sensor with ceramic membrane
- High mechanical resistance to overpressures

CPT is a compact transmitter suitable for applications in the water supply sector and water treatment.

### Technical Feature

**Power supply**

12÷30Vdc (2-wires)  
16,5÷55Vdc (Hart)

**Output**

4÷20mA; HART

**IP rating**

IP65

**Accuracy**

±0.2%

**Working temperature**

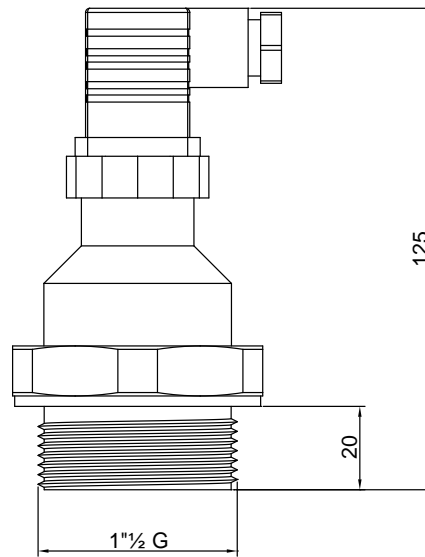
-40° ÷ +85°C

**Membrane material**

ceramic

**Display**

LCD (optional)



**CPT** Capacitive pressure transmitter  
 With ceramic diaphragm - Protection: IP65  
 Working temperature range: -40 ÷ +85°C  
 Accuracy: ±0,2% - O-ring in FKM

Version	
1	Standard (DIN43650)
Measure range	
A	0 ÷ 5 KPa (0 ÷ 40 mbar) - Max overload 4 bar
B	0 ÷ 10 KPa (0 ÷ 100 mbar) - Max overload 4 bar
C	0 ÷ 20 KPa (0 ÷ 200 mbar) - Max overload 6 bar
D	0 ÷ 40 KPa (0 ÷ 400 mbar) - Max overload 6 bar
E	0 ÷ 100 KPa (0 ÷ 1 bar) - Max overload 10 bar
F	0 ÷ 200 KPa (0 ÷ 2 bar) - Max overload 15 bar
G	0 ÷ 400 KPa (0 ÷ 4 bar) - Max overload 25 bar
H	0 ÷ 1 MPa (0 ÷ 10 bar) - Max overload 40 bar
I	0 ÷ 2 MPa (0 ÷ 20 bar) - Max overload 40 bar
L	0 ÷ 4 MPa (0 ÷ 40 bar) - Max overload 60 bar
Z	Special
Output	
1	4 ÷ 20mA 2-wire
2	4 ÷ 20mA + HART 2-wire
Process connection / Material	
A	Thread G 1/2" male with ø 8 mm hole / SS316
B	Thread G 1 1/2" male with flat membrane / SS316
Z	Special
Accessories	
0	None
1	LCD display
2	LCD display with 2 switch limited points
9	Special



**SPT**  
Smart pressure transmitter

Accuracy  $\pm 0.075\%$

Measurement of relative and absolute pressure

Process connections: male or female threaded, type or for vacuum

Two wires with HART communication

Matrix backlight display

Fast time responsive self-diagnostics

ATEX

SPT is a pressure transmitter designed for use in industrial processes, very flexible in its use due to the high rangeability and the various process connections available. Thanks to its innovative technology the measurement is particularly stable over time and accurate. The internal temperature sensor corrects deviations of the measurement due to thermal variations in the process.

**Technical Feature**

**Power supply**

12÷42Vdc (2-wires)

**Analog output resolution**

15 bit

**Communication protocol**

HART

**IP rating**

IP67

**Zero and span calibration**

onboard buttons

**Data display**

backlit alphanumeric display

**Accuracy**

$\pm 0.075\%$

**Stability**

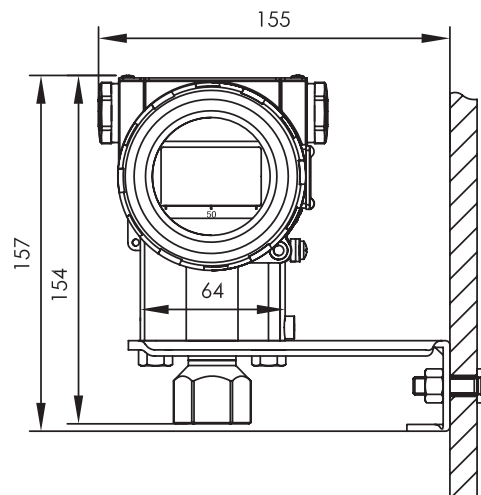
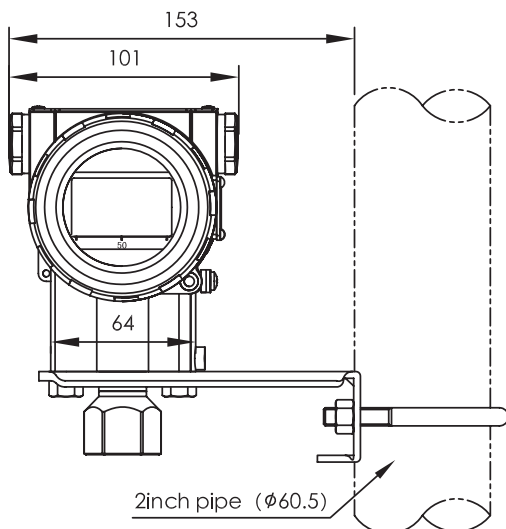
$> \pm 0.1\%FS$

**Working temperature**

$-40^{\circ}\div+85^{\circ}C$

**Certification**

Atex

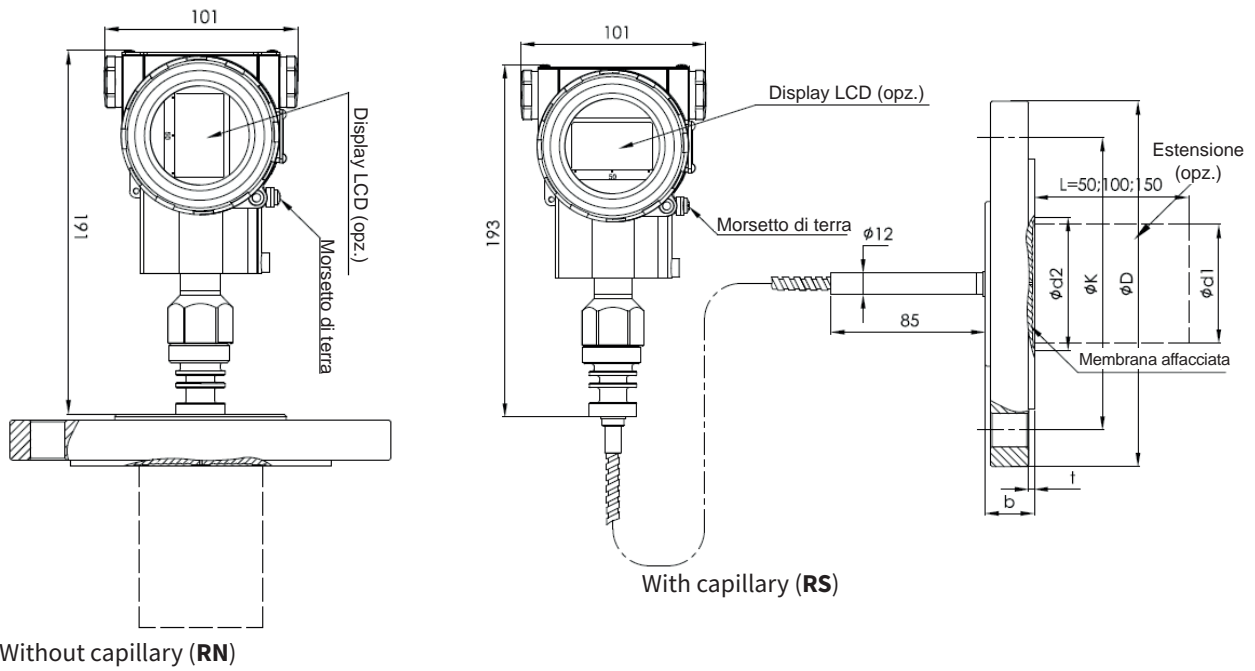




**SPT** HART pressure transmitter  
 IP67 - Working temperature range: -40 ÷ +85°C  
 Power supply: 12÷42Vdc (2-wire)  
 4÷20mA HART - Fully sealed welding

Accuracy	
<b>H</b>	± 0,075%
Measure range	
<b>B</b>	0 - 0,6kPa ÷ 6kPa (0 - 6 ÷ 60mbar) gauge p. / Max overload 0,2bar Range limits -6 ÷ +6kPa (-60 ÷ +60 mbar)
<b>C</b>	0 - 2kPa ÷ 40kPa (0 - 20 ÷ 400mbar) gauge p. / Max overload 10bar Range limits -40 ÷ +40kPa (-400 ÷ +400mbar)
<b>D</b>	0 - 2,5kPa ÷ 250kPa (0 - 25 ÷ 2500mbar) gauge p. / Max overload 40bar Range limits -100 ÷ +250kPa (-1000 ÷ +2500mbar)
<b>F</b>	0 - 30kPa ÷ 3MPa (0 - 0,3 ÷ 30bar) gauge p. / Max overload 150b Range limits -0,1 ÷ +3MPa (-1 ÷ +30bar)
<b>G</b>	0 - 0,1MPa ÷ 10MPa (0 - 1 ÷ 100bar) gauge p. / Max overload 200bar Range limits -0,1 ÷ +10MPa (-1 ÷ +100bar)
<b>H</b>	0 - 0,21MPa ÷ 21MPa (0 - 2,1 ÷ 210bar) gauge p. / Max overload 500bar Range limits -0,1 ÷ +21MPa (-1 ÷ +210bar)
<b>I</b>	0 - 0,4MPa ÷ 40MPa (0 - 4 ÷ 400bar) gauge p. / Max overload 500bar Range limits -0,1 ÷ +40MPa (-1 ÷ +400bar)
<b>J</b>	0 - 0,6MPa ÷ 60MPa (0 - 6 ÷ 600bar) gauge p. / Max overload 700bar Range limits -0,1 ÷ +60MPa (-1 ÷ +600bar)
<b>L</b>	0 - 2kPa ÷ 40kPa (0 - 20 ÷ 400mbar) absolute p. / Max overload 10bar Range limits 0 ÷ 40kPa (0 ÷ 400mbar)
<b>M</b>	0 - 2,5kPa ÷ 250kPa (0 - 25 ÷ 2500mbar) absolute p. / Max overload 40bar Range limits 0 ÷ 250kPa (0 ÷ 2500mbar)
<b>O</b>	0 - 30kPa ÷ 3MPa (0 - 0,3 ÷ 30bar) absolute p. / Max overload 150bar Range limits 0 ÷ 3MPa (0 ÷ 30bar)
<b>Z</b>	Special
Housing / membrane / filling liquid	
<b>A</b>	Aluminum / SS316L / silicone oil
<b>B</b>	Aluminum / SS316L / fluorinated oil
<b>C</b>	Aluminum / Hastelloy C / silicone oil
<b>D</b>	Aluminum / Hastelloy C / fluorinated oil
<b>E</b>	SS316L / SS316L / silicone oil
<b>F</b>	SS316L / SS316L / fluorinated oil
<b>G</b>	SS316L / Hastelloy C / silicone oil
<b>H</b>	SS316L / Hastelloy C / fluorinated oil
Process connection	
<b>1</b>	½" NPT female SS316 thread
<b>2</b>	½" NPT male SS316 thread (inner ¼" NPT female)
<b>3</b>	M20 x 1,5 male SS316
<b>4</b>	½" G male SS316 thread
<b>5</b>	Vacuum connection ISO 2861 SS316 (max 2,5bar)
<b>6</b>	¼" NPT male SS316 thread
<b>9</b>	Special
Special functions	
<b>N</b>	None
<b>O</b>	Degrease cleansing treatment (just with fluorinated oil)
<b>P</b>	Anti-lightning
Fixing bracket for panel and pipe mounting (2")	
<b>1</b>	SS304
<b>2</b>	Galvanized carbon steel
<b>N</b>	None
Display	
<b>2</b>	Backlit LCD
<b>N</b>	None
Certification	
<b>A</b>	Intrinsically safe ATEX II 1/2G Ex ia IIC T4 Ga/Gb
<b>D</b>	Explosion proof ATEX II 2 G D Ex db IIC T4/T5/T6 Gb Ex tb IIIC T80°C/T90°C/T130°C - Ta = -40°C ÷ +60°C
<b>N</b>	None

**PRF**  
Remote flanges for pressure transmitters



Flange	Working pressure	ΦD (mm)	ΦK (mm)	Φd1 (mm)	Φd2 (mm)	Φd3 (mm)	t (mm)	b (mm)	Bolt	
				With extension	Without extension					
DN 50 - DIN 2501 (Sealing DIN 2526E)	PN1.6/4MPa	165	125	48.3	57	102	3 <sup>+0.5</sup>	20	4	M16
	PN 6.4MPa	18	135	48.3	57	102	3 <sup>+0.5</sup>	26	4	M20
	PN 10MPa	195	145	48.3	57	102	3 <sup>+0.5</sup>	28	4	M20
DN 80 - DIN 2501 (Sealing DIN 2526E)	PN1.6/4MPa	200	160	76	75	138	3 <sup>+0.5</sup>	24	8	M16
	PN 6.4MPa	215	170	76	75	138	3 <sup>+0.5</sup>	28	8	M20
	PN 10MPa	230	180	76	75	138	3 <sup>+0.5</sup>	32	8	M24
DN 2" (ANSI B 16.5 RF)	150psi	152.4	120.6	48.3	57	92.1	3 <sup>+0.5</sup>	17.4	4	M18
	300psi	165.1	127.0	48.3	57	92.1	3 <sup>+0.5</sup>	20.6	8	M18
	600psi	165.1	127.0	48.3	57	92.1	6.35	31.75	8	M18
DN 3" (ANSI B 16.5 RF)	150psi	190.5	152.4	76	75	127	3 <sup>+0.5</sup>	22.2	4	M16
	300psi	209.5	168.3	76	75	127	3 <sup>+0.5</sup>	27.0	8	M20
	600psi	209.5	168.3	76	75	127	6.35	38.05	8	M20
DN 4" (ANSI B 16.5 RF)	150psi	229	191	89	89	157	3 <sup>+0.5</sup>	30	8	M18
	300psi	255	200	89	89	157	3 <sup>+0.5</sup>	32	8	M18



PRF Remote flanges for pressure transmitters

Version	
RN	Without capillary
RS	With capillary

Process connection / Diaphragm material	
A	DN50 DIN2501 E DN2526 flange / SS316L
B	DN50 DIN2501 E DN2526 flange / Hastelloy C
C	DN50 DIN2501 E DN2526 flange / Tantalum
H	DN80 DIN2501 E DN2526 flange / SS316L
I	DN80 DIN2501 E DN2526 flange / Hastelloy C
G	DN80 DIN2501 E DN2526 flange / Tantalum
D	2" ANSI B 16.5 RF flange / SS316L
E	2" ANSI B 16.5 RF flange / Hastelloy C
F	2" ANSI B 16.5 RF flange / Tantalum
K	3" ANSI B 16.5 RF flange / SS316L
L	3" ANSI B 16.5 RF flange / Hastelloy C
M	3" ANSI B 16.5 RF flange / Tantalum
N	4" ANSI B 16.5 RF flange / SS316L
O	4" ANSI B 16.5 RF flange / Hastelloy C
P	4" ANSI B 16.5 RF flange / Tantalum
Z	Special

Working pressure	
1	PN10 / 40 - for DIN2501
2	PN64 - for DIN2501
3	PN100 - for DIN2501
6	150psi - for ANSI B 16.5
7	300psi - for ANSI B 16.5
8	600psi - for ANSI B 16.5 (4" excluded)

Extension / Material	
F	None
H	50mm / SS316L
I	100mm / SS316L
G	150mm / SS316L
L	50mm / Hastelloy C
M	100mm / Hastelloy C
N	150mm / Hastelloy C
Z	Special

Filling liquid	
S	Silicone oil (-30 ÷ +200°C)
H	Silicone oil for high temperature (-10 ÷ +350°C)
U	Silicone oil for super high temperature (-10 ÷ +400°C)
V	Vegetable oil (0 ÷ 250°C)

Capillary	
0	None
1	1 m
2	2 m
3	3 m
4	4 m
5	5 m
6	6 m
8	8 m
9	Special

Capillary protection	
N	None
P	PVC coating

Diaphragm protection (only for SS316L)	
0	None
1	EFP plating (up to 180°C)
2	PFA plating (up to 260°C)
3	PTFE coating (up to 200°C)



## SDT Differential pressure transmitter

- Accuracy max  $\pm 0.075\%$
- Range 1 mbar  $\div$  20 bar
- Hart communication
- LCD backlight display
- Settings via display
- Fast time responsive self-diagnostics
- ATEX

SDT is a differential pressure transmitter with performance at the top of the range and is designed for specific installations in processes where accuracy and stability over time are essential characteristics. Thanks to its technology it measures very low differential pressures from 1 mbar (10 mm H<sub>2</sub>O). The SDT is fully programmable by means of two external watertight buttons and a matrix backlight display. The programming or modification of the measurement parameters can be carried out in heavy duty ambient conditions without having access to the internal instrument parts thus maintaining the degree of protection IP67.

### Technical Feature

#### Measure range

Differential pressure Max. 0  $\div$  20bar (0  $\div$  2Mpa); Min. 0  $\div$  0.001bar (0  $\div$  100Pa)

#### Accuracy

$\pm 0.075$ ;  $\pm 0.1$  for range A

#### Analog output resolution

15 bit

#### Power supply

12  $\div$  42Vdc (2-wires)

#### Communication protocol

HART

#### Zero and span calibration

onboard buttons

#### Data display

backlit alphanumeric display

#### IP rating

IP67

#### Stability

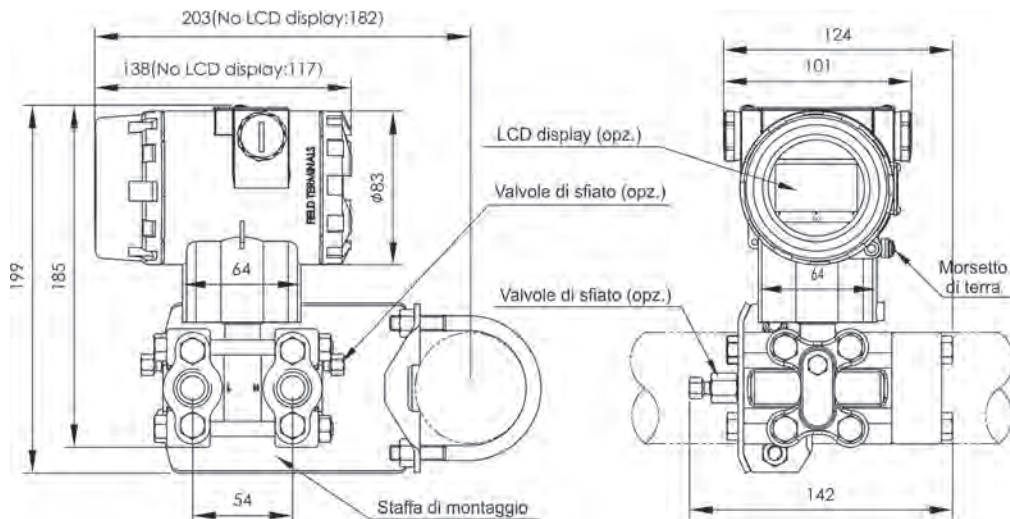
$> \pm 0.1\%$ FS

#### Working temperature

-40  $\div$  +85°C

#### Certificazione

Atex





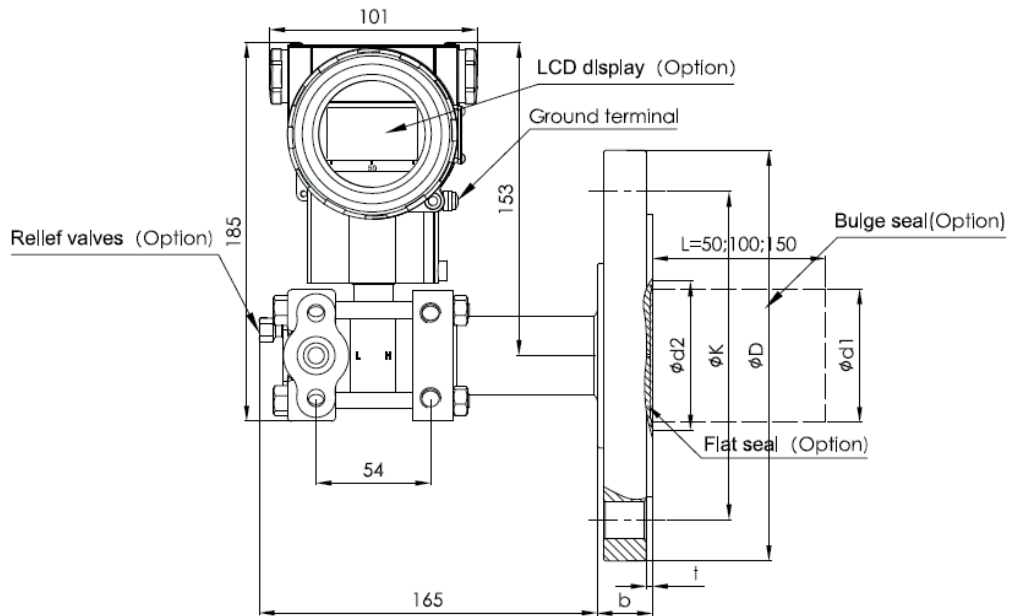
**SDT** Differential pressure transmitter  
 IP67 - Operation temperature: -40 ÷ +85°C  
 Power supply: 12÷42Vdc (2-wire)  
 4÷20mA HART

Accuracy	
<b>H</b>	± 0,075% (for range A ± 0,1%)
Measure range	
<b>A</b>	0 - 100Pa ÷ 1kPa ( 0 - 1 ÷ 10mbar) (0 - 10 ÷ 100 mmH <sub>2</sub> O) - accuracy ± 0,1%
<b>B</b>	0 - 200Pa ÷ 6kPa ( 0 - 2 ÷ 60mbar) (0 - 20 ÷ 600 mmH <sub>2</sub> O)
<b>C</b>	0 - 400Pa ÷ 40kPa ( 0 - 4 ÷ 400mbar) (0 - 40 ÷ 4000 mmH <sub>2</sub> O)
<b>D</b>	0 - 2,5kPa ÷ 250kPa ( 0 - 25 ÷ 2500mbar) (0 - 0,25 ÷ 25 mH <sub>2</sub> O)
<b>E</b>	0 - 20kPa ÷ 2MPa ( 0 - 0,2 ÷ 20bar) (0 - 2 ÷ 200 mmH <sub>2</sub> O)
Membrane / filling liquid	
<b>A</b>	SS316L / silicone oil
<b>B</b>	SS316L / fluorinated oil
<b>C</b>	Hastelloy C / silicone oil
<b>D</b>	Hastelloy C / fluorinated oil
<b>E</b>	SS316L gold plated / silicone oil
<b>F</b>	SS316L gold plated/ fluorinated oil
<b>G</b>	SS316L EFP plated / silicone oil
<b>T</b>	Tantalum / silicone oil
Working pressure	
<b>1</b>	16MPa (range A = 7MPa)
<b>2</b>	25MPa (not for range A)
<b>3</b>	40MPa (not for range A)
Process connection	
<b>B</b>	¼" - 18 NPT female SS316 thread with relief valves at the end of the flange
<b>D</b>	¼" - 18 NPT female SS316 thread with relief valve on the lower part of the flange side
<b>N</b>	¼" - 18 NPT female SS316 thread without relief valves
<b>U</b>	¼" - 18 NPT female SS316 thread with relief valve on the upper part of the flange side
<b>Z</b>	Special
Sealed material	
<b>F</b>	Viton (FKM)
<b>N</b>	Perbunan (NBR)
<b>P</b>	Teflon (PTFE)
Special functions	
<b>N</b>	None
<b>O</b>	Degrease cleansing treatment ( just with fluorinated oil and Viton seal, max 60°C)
<b>P</b>	Line noise filter
Fixing bracket for panel and pipe mounting (2")	
<b>1</b>	SS304
<b>2</b>	Galvanized carbon steel
<b>N</b>	None
Process connection accessories	
<b>1</b>	SS316 oval-shaped flange with ½" NPT female thread
<b>2</b>	SS316 D-shaped connector with M20x1.5 male thread ( welded connection)
<b>N</b>	None
Display	
<b>2</b>	Backlit LCD
<b>N</b>	None
Certification	
<b>A</b>	Intrinsically Safe ATEX II 1/2G Ex ia IIC T4 Ga/Gb
<b>D</b>	Explosion proof ATEX II 2 G D Ex db IIC T4/T5/T6 Gb Ex tb IIIC T80°C/T90°C/T130°C - Ta = -40°C ÷ +60°C
<b>N</b>	None



## DRF

### Remote flanges for differential pressure transmitters



Flange	Working pressure	$\Phi D$ (mm)	$\Phi K$ (mm)	$\phi d1$ (mm)	$\Phi d2$ (mm)	$\Phi d3$ (mm)	t (mm)	b (mm)	Bolt	
				With extension	Without extension					
DN 50 - DIN 2501 (Sealing DIN 2526E)	PN1.6/4MPa	165	125	48.3	57	102	3 <sup>+0.5</sup>	20	4	M16
	PN 6.4MPa	18	135	48.3	57	102	3 <sup>+0.5</sup>	26	4	M20
	PN 10MPa	195	145	48.3	57	102	3 <sup>+0.5</sup>	28	4	M20
DN 80 - DIN 2501 (Sealing DIN 2526E)	PN1.6/4MPa	200	160	76	75	138	3 <sup>+0.5</sup>	24	8	M16
	PN 6.4MPa	215	170	76	75	138	3 <sup>+0.5</sup>	28	8	M20
	PN 10MPa	230	180	76	75	138	3 <sup>+0.5</sup>	32	8	M24
DN 2" (ANSI B 16.5 RF)	150psi	152.4	120.6	48.3	57	92.1	3 <sup>+0.5</sup>	17.4	4	M18
	300psi	165.1	127.0	48.3	57	92.1	3 <sup>+0.5</sup>	20.6	8	M18
	600psi	165.1	127.0	48.3	57	92.1	6.35	31.75	8	M18
DN 3" (ANSI B 16.5 RF)	150psi	190.5	152.4	76	75	127	3 <sup>+0.5</sup>	22.2	4	M16
	300psi	209.5	168.3	76	75	127	3 <sup>+0.5</sup>	27.0	8	M20
	600psi	209.5	168.3	76	75	127	6.35	38.05	8	M20
DN 4" (ANSI B 16.5 RF)	150psi	229	191	89	89	157	3 <sup>+0.5</sup>	30	8	M18
	300psi	255	200	89	89	157	3 <sup>+0.5</sup>	32	8	M18

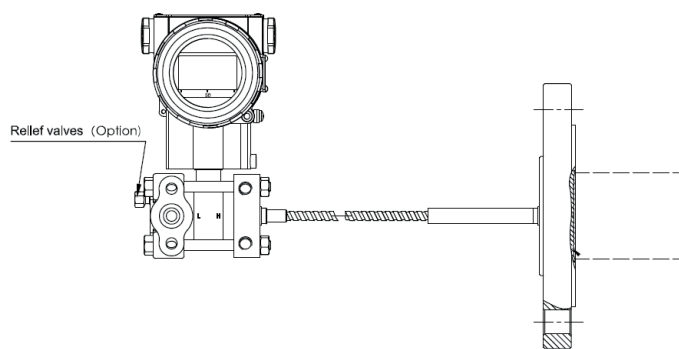
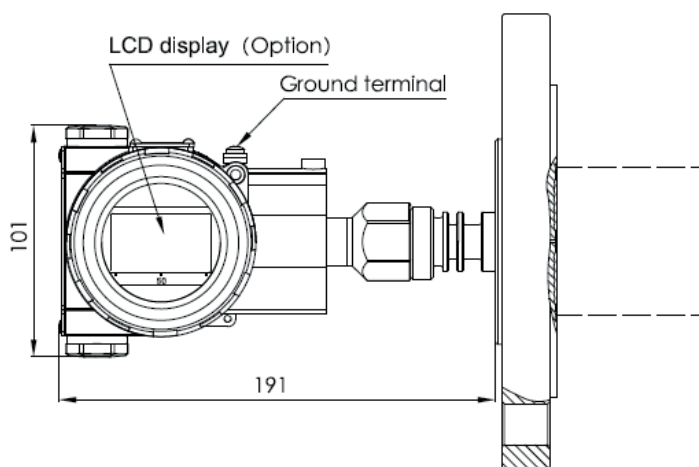


**DRF** Remote flanges for diff. pressure transmitters

Process connection / Diaphragm material	
<b>A</b>	DN50 DIN2501 E DN2526 flange / SS316L
<b>B</b>	DN50 DIN2501 E DN2526 flange / Hastelloy C
<b>C</b>	DN50 DIN2501 E DN2526 flange / Tantalum
<b>H</b>	DN80 DIN2501 E DN2526 flange / SS316L
<b>I</b>	DN80 DIN2501 E DN2526 flange / Hastelloy C
<b>G</b>	DN80 DIN2501 E DN2526 flange / Tantalum
<b>D</b>	2" ANSI B 16.5 RF flange / SS316L
<b>E</b>	2" ANSI B 16.5 RF flange / Hastelloy C
<b>F</b>	2" ANSI B 16.5 RF flange / Tantalum
<b>K</b>	3" ANSI B 16.5 RF flange / SS316L
<b>L</b>	3" ANSI B 16.5 RF flange / Hastelloy C
<b>M</b>	3" ANSI B 16.5 RF flange / Tantalum
<b>N</b>	4" ANSI B 16.5 RF flange / SS316L
<b>O</b>	4" ANSI B 16.5 RF flange / Hastelloy C
<b>P</b>	4" ANSI B 16.5 RF flange / Tantalum
<b>Z</b>	Speciale
Working pressure	
<b>1</b>	PN10 / 40 - for DIN2501
<b>2</b>	PN64 - for DIN2501
<b>3</b>	PN100 - for DIN2501
<b>6</b>	150psi - for ANSI B 16.5
<b>7</b>	300psi - for ANSI B 16.5
<b>8</b>	600psi - for ANSI B 16.5 (4" excluded)
<b>9</b>	Special
Extension / Material	
<b>F</b>	None
<b>H</b>	50mm / SS316L
<b>I</b>	100mm / SS316L
<b>G</b>	150mm / SS316L
<b>L</b>	50mm / Hastelloy C
<b>M</b>	100mm / Hastelloy C
<b>N</b>	150mm / Hastelloy C
<b>Z</b>	Special
Filling liquid	
<b>S</b>	Silicone oil (-30 ÷ +200°C)
<b>V</b>	Vegetable oil (0 ÷ 250°C)
Diaphragm protection (only for SS316L)	
<b>0</b>	None
<b>1</b>	EFP plating (up to 180°C)
<b>2</b>	PFA plating (up to 260°C)
<b>3</b>	PTFE coating (up to 200°C)

## DCP

### Remote flange with capillary for differential pressure transmitter



One separator version

Two separators version

Flange	Working pressure	ΦD (mm)	ΦK (mm)	Φd1 (mm)	Φd2 (mm)	Φd3 (mm)	t (mm)	b (mm)	Bolt	
				With extension	Without extension					
DN 50 - DIN 2501 (Sealing DIN 2526E)	PN1.6/4MPa	165	125	48.3	57	102	3 <sup>+0.5</sup>	20	4	M16
	PN 6.4MPa	18	135	48.3	57	102	3 <sup>+0.5</sup>	26	4	M20
	PN 10MPa	195	145	48.3	57	102	3 <sup>+0.5</sup>	28	4	M20
DN 80 - DIN 2501 (Sealing DIN 2526E)	PN1.6/4MPa	200	160	76	75	138	3 <sup>+0.5</sup>	24	8	M16
	PN 6.4MPa	215	170	76	75	138	3 <sup>+0.5</sup>	28	8	M20
	PN 10MPa	230	180	76	75	138	3 <sup>+0.5</sup>	32	8	M24
DN 2" (ANSI B 16.5 RF)	150psi	152.4	120.6	48.3	57	92.1	3 <sup>+0.5</sup>	17.4	4	M18
	300psi	165.1	127.0	48.3	57	92.1	3 <sup>+0.5</sup>	20.6	8	M18
	600psi	165.1	127.0	48.3	57	92.1	6.35	31.75	8	M18
DN 3" (ANSI B 16.5 RF)	150psi	190.5	152.4	76	75	127	3 <sup>+0.5</sup>	22.2	4	M16
	300psi	209.5	168.3	76	75	127	3 <sup>+0.5</sup>	27.0	8	M20
	600psi	209.5	168.3	76	75	127	6.35	38.05	8	M20
DN 4" (ANSI B 16.5 RF)	150psi	229	191	89	89	157	3 <sup>+0.5</sup>	30	8	M18
	300psi	255	200	89	89	157	3 <sup>+0.5</sup>	32	8	M18

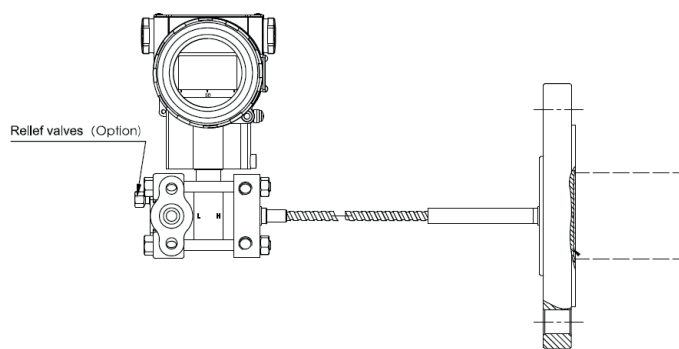
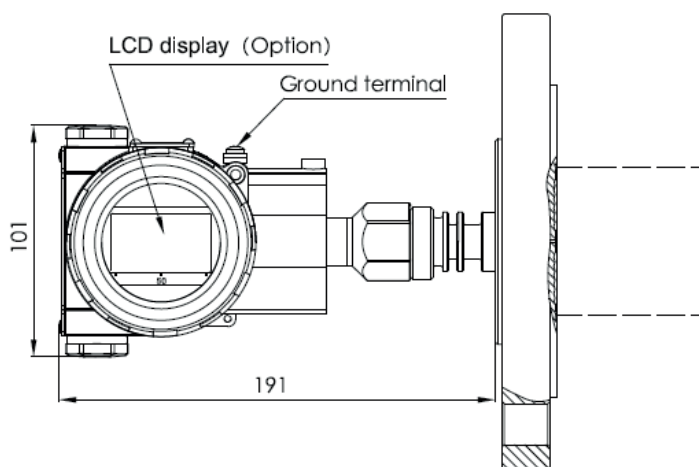


DCP Remote flange with capillary on positive side

Process connection / Diaphragm material	
<b>A</b>	DN50 DIN2501 E DN2526 flange / SS316L
<b>B</b>	DN50 DIN2501 E DN2526 flange / Hastelloy C
<b>C</b>	DN50 DIN2501 E DN2526 flange / Tantalum
<b>H</b>	DN80 DIN2501 E DN2526 flange / SS316L
<b>I</b>	DN80 DIN2501 E DN2526 flange / Hastelloy C
<b>G</b>	DN80 DIN2501 E DN2526 flange / Tantalum
<b>D</b>	2" ANSI B 16.5 RF flange / SS316L
<b>E</b>	2" ANSI B 16.5 RF flange / Hastelloy C
<b>F</b>	2" ANSI B 16.5 RF flange / Tantalum
<b>K</b>	3" ANSI B 16.5 RF flange / SS316L
<b>L</b>	3" ANSI B 16.5 RF flange / Hastelloy C
<b>M</b>	3" ANSI B 16.5 RF flange / Tantalum
<b>N</b>	4" ANSI B 16.5 RF flange / SS316L
<b>O</b>	4" ANSI B 16.5 RF flange / Hastelloy C
<b>P</b>	4" ANSI B 16.5 RF flange / Tantalum
<b>Z</b>	Special
Working pressure	
<b>1</b>	PN10 / 40 - for DIN2501
<b>2</b>	PN64 - for DIN2501
<b>3</b>	PN100 - for DIN2501
<b>6</b>	150psi - for ANSI B 16.5
<b>7</b>	300psi - for ANSI B 16.5
<b>8</b>	600psi -for ANSI B 16.5 (4" excluded)
Extension / Material	
<b>F</b>	None
<b>H</b>	50mm / SS316L
<b>I</b>	100mm / SS316L
<b>G</b>	150mm / SS316L
<b>L</b>	50mm / Hastelloy C
<b>M</b>	100mm / Hastelloy C
<b>N</b>	150mm / Hastelloy C
<b>Z</b>	Special
Filling liquid	
<b>S</b>	Silicone oil (-30 ÷ +200°C)
<b>H</b>	Silicone oil for high temperature (-10 ÷ +350°C)
<b>U</b>	Silicone oil for super high temperature (-10 ÷ +400°C)
<b>V</b>	Vegetable oil (0 ÷ 250°C)
Capillary	
<b>1</b>	1 m
<b>2</b>	2 m
<b>3</b>	3 m
<b>4</b>	4 m
<b>5</b>	5 m
<b>6</b>	6 m
<b>8</b>	8 m
<b>9</b>	Special
Capillary protection	
<b>N</b>	None
<b>P</b>	PVC coating
Diaphragm protection (only for SS316L)	
<b>0</b>	None
<b>1</b>	EFP plating (up to 180°C)
<b>2</b>	PFA plating (up to 260°C)
<b>3</b>	PTFE coating (up to 200°C)

## DCN

### Remote flange with capillary for differential pressure transmitter



One separator version

Two separators version

Flange	Working pressure	ΦD (mm)	ΦK (mm)	Φd1 (mm)	Φd2 (mm)	Φd3 (mm)	t (mm)	b (mm)	Bolt	
				With extension	Without extension					
DN 50 - DIN 2501 (Sealing DIN 2526E)	PN1.6/4MPa	165	125	48.3	57	102	3 <sup>+0.5</sup>	20	4	M16
	PN 6.4MPa	18	135	48.3	57	102	3 <sup>+0.5</sup>	26	4	M20
	PN 10MPa	195	145	48.3	57	102	3 <sup>+0.5</sup>	28	4	M20
DN 80 - DIN 2501 (Sealing DIN 2526E)	PN1.6/4MPa	200	160	76	75	138	3 <sup>+0.5</sup>	24	8	M16
	PN 6.4MPa	215	170	76	75	138	3 <sup>+0.5</sup>	28	8	M20
	PN 10MPa	230	180	76	75	138	3 <sup>+0.5</sup>	32	8	M24
DN 2" (ANSI B 16.5 RF)	150psi	152.4	120.6	48.3	57	92.1	3 <sup>+0.5</sup>	17.4	4	M18
	300psi	165.1	127.0	48.3	57	92.1	3 <sup>+0.5</sup>	20.6	8	M18
	600psi	165.1	127.0	48.3	57	92.1	6.35	31.75	8	M18
DN 3" (ANSI B 16.5 RF)	150psi	190.5	152.4	76	75	127	3 <sup>+0.5</sup>	22.2	4	M16
	300psi	209.5	168.3	76	75	127	3 <sup>+0.5</sup>	27.0	8	M20
	600psi	209.5	168.3	76	75	127	6.35	38.05	8	M20
DN 4" (ANSI B 16.5 RF)	150psi	229	191	89	89	157	3 <sup>+0.5</sup>	30	8	M18
	300psi	255	200	89	89	157	3 <sup>+0.5</sup>	32	8	M18



DCN Remote flange with capillary on negative side

Process connection / Diaphragm material	
A	DN50 DIN2501 E DN2526 flange / SS316L
B	DN50 DIN2501 E DN2526 flange / Hastelloy C
C	DN50 DIN2501 E DN2526 flange / Tantalum
H	DN80 DIN2501 E DN2526 flange / SS316L
I	DN80 DIN2501 E DN2526 flange / Hastelloy C
G	DN80 DIN2501 E DN2526 flange / Tantalum
D	2" ANSI B 16.5 RF flange / SS316L
E	2" ANSI B 16.5 RF flange / Hastelloy C
F	2" ANSI B 16.5 RF flange / Tantalum
K	3" ANSI B 16.5 RF flange / SS316L
L	3" ANSI B 16.5 RF flange / Hastelloy C
M	3" ANSI B 16.5 RF flange / Tantalum
N	4" ANSI B 16.5 RF flange / SS316L
O	4" ANSI B 16.5 RF flange / Hastelloy C
P	4" ANSI B 16.5 RF flange / Tantalum
Z	Special
Working pressure	
1	PN10 / 40 - for DIN2501
2	PN64 - for DIN2501
3	PN100 - for DIN2501
6	150psi - for ANSI B 16.5
7	300psi - for ANSI B 16.5
8	600psi - for ANSI B 16.5 (4" excluded)
Extension / Material	
F	None
H	50mm / SS316L
I	100mm / SS316L
G	150mm / SS316L
L	50mm / Hastelloy C
M	100mm / Hastelloy C
N	150mm / Hastelloy C
Z	Speciale
Filling liquid	
S	Silicone oil (-30 ÷ +200°C)
H	Silicone oil for high temperature (-10 ÷ +350°C)
U	Silicone oil for super high temperature (-10 ÷ +400°C)
V	Vegetable oil (0 ÷ 250°C)
Capillary	
1	1 m
2	2 m
3	3 m
4	4 m
5	5 m
6	6 m
8	8 m
9	Special
Capillary protection	
N	None
P	PVC coating
Diaphragm protection (only for SS316L)	
0	None
1	EFP plating (up to 180°C)
2	PFA plating (up to 260°C)
3	PTFE coating (up to 200°C)

# Display, Totalizers and Data Transmission







## VLW90M

### Level control, flow rates

- 6 independent level measurements
- 2 open channel flow measurements
- 2 volume measurements
- 1 differential level measurement
- pumps control (raising) up to 5 immersed pumps
- 2 analog output 4÷20mA
- 1 modbus slave output
- 5 fully configurable relay
- 2 open collector digital output
- 2 analog input 4÷20mA
- 2 digital input (max. 24Vdc 10mA)
- Datalogger via Pen Drive USB (optional)

VLW90M, a single unit suitable for different applications. Level measurements, difference between levels, open channel flow (hydraulic jump) and pumps control. Different measurement functions directly settable via the keyboard. VLW90M can be connected to ultrasonic sensors and/or to 4÷20mA level transmitters. VLW90M has been developed for the connection to 1 or 2 MODBUS sensors, but it can support up to 8 PTU, METER, RPL81 or KTU units if externally powered. A remarkable note is the data logger on removable pen-drive, which enables the total traceability of the measurements. It is particularly suitable for the Analytical of the flow rate timing in open channel applications.

### Technical Feature

#### Housing material

ABS

#### Mechanical installation

Wall, pipe or DIN rail mountin

#### Protection degree

IP66

#### Keyboard

5 push buttons

#### Display

320x240 matrix color backlit LCD

#### Electrical connection

Internal connectors

#### Working temperature

-20 ÷ +60°C

#### Power supply

85÷265Vac; 20÷30Vac/Vdc

#### Power consumption

Max. 10W

#### Analog output

n.2 configurable isolated 4÷20mA

#### Relays output

n.5 fully configurable relay (5A 250Vac)

#### Digital output

n.2 open collector (max. 24Vdc 50mA)

#### Analog input

n.2 4÷20mA

#### Digital input

n.2 (max. 24Vdc 10mA)

#### Digital communication

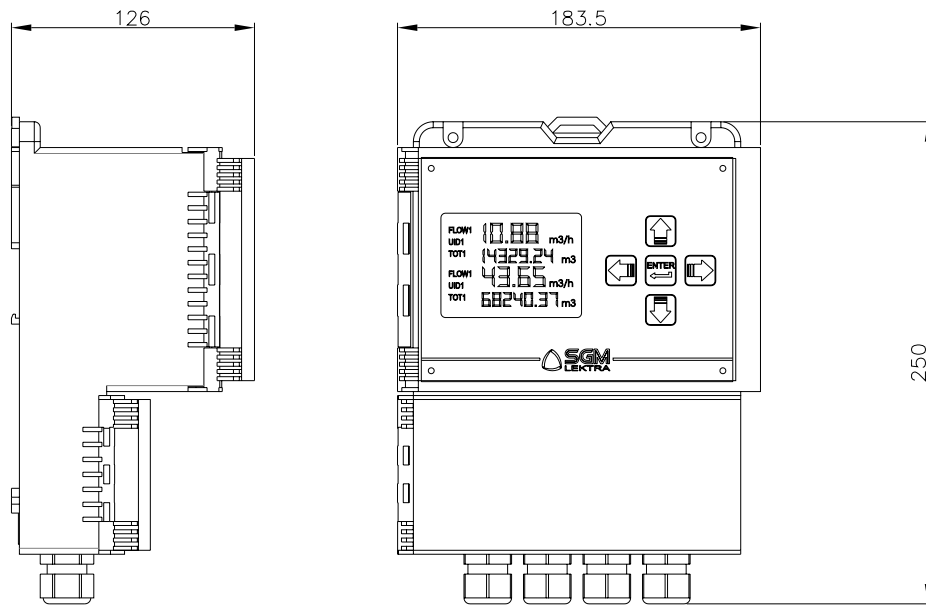
MODBUS RTU

#### Datalogger

on Pen Drive USB; max.32GB (FAT32)

#### Power supply for analog transmitters

24Vdc; 200mA max



**VLW90M**

Level, open channels flow and pumps control unit

Directly connectable to SGM ultrasonic/radar sensors (4-wire) via MODBUS RTU.  
 Can accept max. 2 analogic sensors 4÷20mA  
 Matrix 320 x 240 backlit color LCD display  
 Wall or DIN rail mounting  
 5 calibrating push-buttons  
 IP66 mechanical protection; temperature range : -20 ÷ +60°C

Version	
2	Standard with data logger
3	Neutral (no SGM logo) with data logger
4	Standard without data logger
5	Neutral (no SGM logo) without data logger
9	Special
Relay	
C	5 Relays with change over contact (SPDT)
Power supply	
1	85÷265Vac 50÷60Hz
4	20÷30Vdc/Vac
Output	
B	n.2 optoisolated 4÷20mA + n.2 optoisolated open collector
Field Bus	
1	MODBUS RTU
9	Special
Accessories	
A	None
C	Wall mount protection plate in SS304



## VLW60T Display and configuration unit

Display and configuration for modbus level transmitters

4.3 “touch screen display

Up to 5 simultaneous level measurements

Graphical display of the levels

Display indication of the relay status on board  
METER, KTU, RPL81 transmitter

Unit display and configuration for Modbus SGM-LEKTRA level transmitters through a 4.3-inch color touchscreen. Connection for up to 5 transmitters, fully programmable via a simple and intuitive menu. Level display in metric units or percentage. Display indication of the relay status on the transmitter. Level measurements are displayed based on a user-selected configuration with manual or automatic scrolling through display pages.

### Technical Feature

#### Display

4.3 “TFT LCD color resistive touch, resolution 480 x 272, LED backlighting (Life Time > 30000h)

#### Supply

“A” version 24Vdc  $\pm$  20%

“B” version 85-265Vac (50/60Hz)

#### Consumption

“A” version Max 500mA, 12W @ 24Vdc

“B” version Max 15W

#### Dimensions l x h x p (mm)

“A” version 128x102x32

“B” version 183.5x250x126

#### Mounting dimensions (mm)

119x93

#### Mounting

Panel “A” version

Wall-mounted “B” version, on a pole or on a DIN rail, with ABS case and transparent cover

#### IP rating

“A” version IP65 / NEMA4

“B” IP66 version

#### Storage temperature

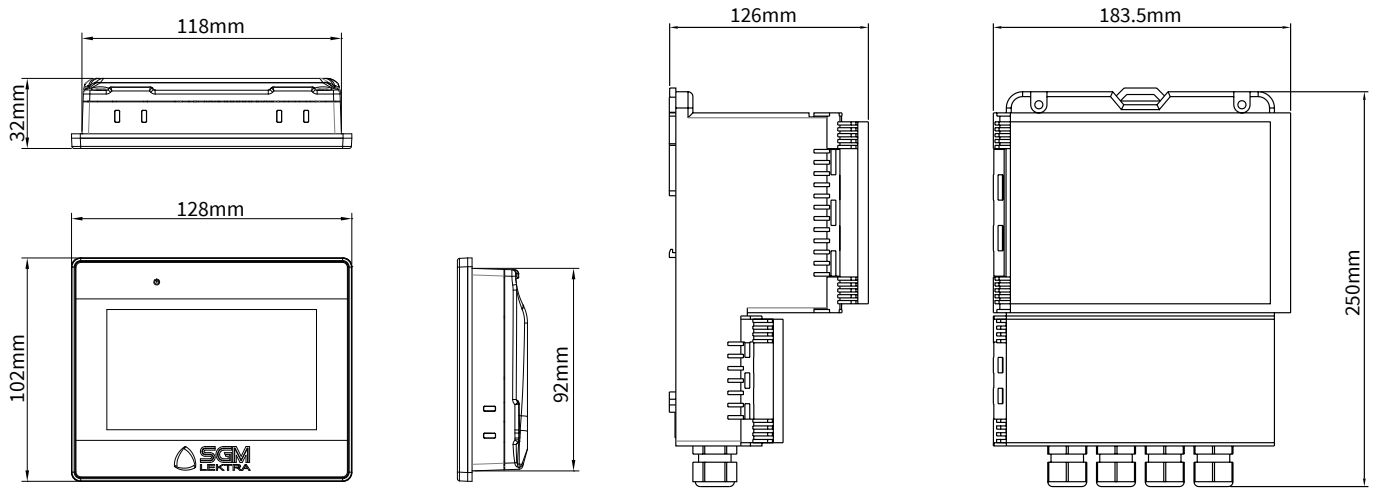
-20 °  $\div$  60 ° C

#### Working temperature

0  $\div$  50 ° C

#### Relative humidity

10 to 90% (without condensation)



**VLW60T**

Display and configuration unit

Suitable for PTU5x., KTU5, METER, RPL75 and RPL81  
 Direct MODBUS RTU connection with max. 3 sensors  
 4.3" touch screen display  
 Graphic level display of liquids or solids

Version	
<b>A</b>	Front panel mounting IP65 (terminal IP40)
<b>B</b>	Wall or DIN rail mounting - IP66 enclosure
<b>C</b>	Front panel mounting IP65 (terminal IP40) + external module with 4 relays output
<b>D</b>	Wall or DIN rail mounting - IP66 enclosure + external module with 4 relays output
<b>Z</b>	Special
Power supply	
<b>1</b>	24Vdc
<b>2</b>	85÷265Vac, 50/60 Hz (only for version B)
<b>9</b>	Special



## VLW602 Display and configuration unit

Suitable for PTU ultrasonic level transmitters  
Keyboard with LCD display  
IP66  
Power supply of 24Vdc transmitters

Suitable for applications where the level transmitter is installed in uncomfortable location. VLW602 is a good solution for the matched compact level transmitters remote viewing and configuration:  
VLW602 module allows you to power and configure all the compatible transmitters without the use of other devices. VLW602 can be installed outdoors near the transmitter installation area, this is made possible by the VLW601 small size and the IP66 mechanical protection. The VLW602 unit ensures the galvanic separation between the power line and the 4÷20mA signal, in the AC power supply case (85÷265Vac)

### Technical Feature

**Housing material**

Aluminium

**Mechanical installation**

wall mounting

**Protection degree**

IP66

**Keyboard**

4 buttons

**Display**

LCD display

**Electrical connection**

terminals

**Working temperature**

-25 ÷ +70°C

**VLW602 power supply**

85÷265Vac; 10÷30Vdc

**Transmitters power supply**

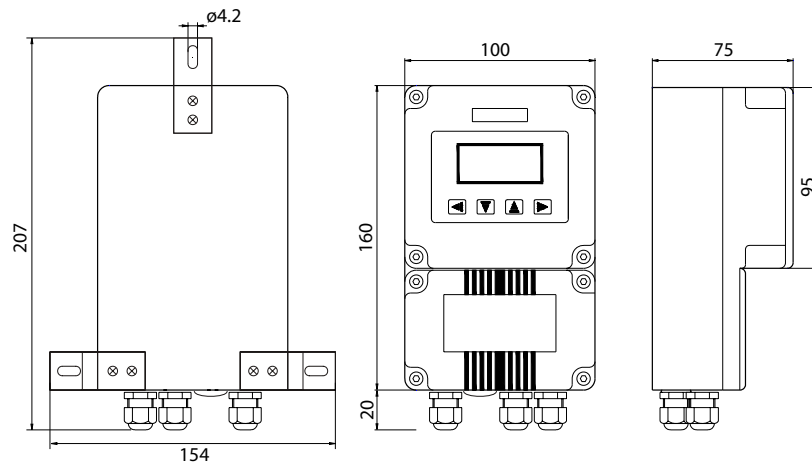
24Vdc

**Consumption**

2W

**Communication with sensor**

Modbus



**VLW602**      Display and configuration unit  
 IP66 protection  
 For connection to PTU50/51/56 transmitters  
 Communication with MODBUS sensor

Version	
<b>A</b>	Standard
<b>D</b>	With male connector in SS316 for PTU cable + 5m cable for probe connection - Only with 24Vdc supply
<b>Z</b>	Special
Power supply	
<b>2</b>	85-265Vac - 50-60Hz
<b>4</b>	24Vdc (necessary for version D)
Accessories	
<b>A</b>	None
<b>Z</b>	Special



**VL401**  
4÷20mA display

Zero and span settings by means of pushbuttons  
Open collector output threshold  
Panel mounting 72 x 36  
IP40



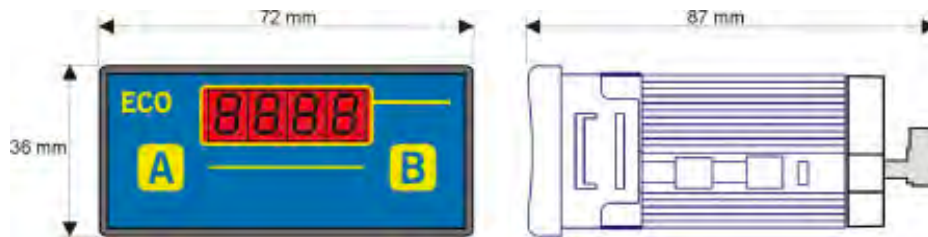
**VL402**  
4÷20mA display

Zero and span settings by means of pushbuttons  
Open collector output threshold  
Panel mounting 96 x 48  
IP40



**VL401** 4÷20mA loop powered digital display  
4 digit LED - Configuration by front keyboard  
Zero and Span setting by two buttons  
Alarm threshold with PNP open collector output  
Panel mounting std 72x36mm, IP40 front - IP20 terminal side

Accessories	
<b>A</b>	None
<b>Z</b>	Special



**VL402** 4÷20mA loop powered digital display  
4 digit LED + 1 fixed zero - Configuration by front keyboard  
Zero and Span setting by two buttons  
Alarm threshold with PNP open collector output  
Panel mounting std 96x48mm, IP40 front - IP20 terminal side

Accessories	
<b>A</b>	None
<b>B</b>	Enclosure for external mounting IP66
<b>Z</b>	Special





## **SLA2X**

### **Display and control unit**

**Suitable for any transmitter 4-20mA**

**Wide versions range**

**Front panel mounting**

**24Vdc, 24/115/230/Vac power supply**

**IP40; IP54; IP66**

**MODBUS / RS232**

**4 relays**

**Output 0-10V / 4-20mA**

SLA2X is an unit suitable for the connection with capacitance and ultrasonic level transmitters. It displays the input analog variable and depending of model, it can provide 2 or 4 relays. Each threshold can be programmed with different kinds of hysteresis. Two analog exit 0÷10V and 4÷20mA, and RS232 or MODBUS serial port are available, depending of the model. It is specially used to be directly connected to TC22, TC26 e TC30 capacitance level transmitters, or to power METER ultrasonic transmitters (2-wire). A special function allows a remote self-calibration; it can memorize empty-situation by acting on a push-button and the level-condition (from 20 to 100%) by acting on another one. The level measurement can be converted into volumes or weights, and an optional linearization system can convert to engineering units a level not commensurated with the volume.

**SLA2X**

Display and control unit for panel mounting

5 ½ digit led display, suitable to be connected to analogic transmitters  
24Vdc power supply (max.40mA) for analog transmitters  
4 frontal push-buttons for calibration; level auto-calibration available  
Working temperature -10, +50°C, Front panel mounting 48 x 96  
IP40 frontal mechanical protection

Power supply	
0	115Vac 50÷60Hz
1	230Vac 50÷60Hz
2	24Vac 50÷60Hz
3	24Vdc

Relay	
0	None
2	2 Relays
4	4 Relays

Output	
A	None
D	RS485 MODBUS
R	RS232
T	4÷20mA / 0÷10V

Linearization	
A	None
L	With up to 20 programmable segments

Input galvanic insulation	
A	Standard - for versions with Vac supply
D	Input galvanic insulation - for verion 3 (24Vdc supply)

Accessories	
A	None
M	Frontal window IP54
N	Enclosure for external mounting IP66
Z	Special



**SLM2X**  
Total flow indicator

For 4÷20 mA or 0÷10V transmitters  
 24VDC power supply for the transmitters  
 6-digit display  
 Maximum scale totalizer 999999  
 Frontal reset (can be disabled) and remote  
 From panel 96x48 mm (depth 100 mm)

SLM2X connected to a flow transmitter (4÷20mA or other scale defined in the order), allows the remotely volume totalization. The maximum input range is  $\pm 0.1 \dots 40$  mA (default 4÷20mA) or  $\pm 0.1 \dots 40$ V. The display shows the total flow values in a range from 0 to 999999.



**SLM2XH3**  
Total flow indicator

For 4÷20 mA or 0÷10V transmitters  
 24VDC power supply for the transmitters  
 2 independent displays for the totalizer (6 digits)  
 and for the flow rate (4 digits)  
 Maximum scale totalizer 999999  
 Frontal reset (can be disabled) and remote  
 From panel 96x48 mm (depth 100 mm)

SLM2XH3 connected to a flow transmitter (4-20mA or other scale defined in the order), allows the remotely volume totalization and the instantaneous flow rate displaying. The SLM2XH3 configuration is via a removable keyboard (optional). The maximum input range is  $\pm 0.1 \dots 40$  mA (default 4÷20mA) or  $\pm 0.1 \dots 40$ V. The display shows the of total flow values in a range from 0 to 999999.



**SLM2X** Total flow indicator with analog input  
Suitable to be connected to analogic transmitters  
4÷20mA or 0÷10Vdc  
4 frontal push-buttons for calibration  
Data stored in EEPROM  
Working temperature: -10° ÷ +50°C  
Front panel mounting (dimA 92x45) IP54

Power supply	
<b>00</b>	115Vac
<b>10</b>	230Vac
<b>20</b>	24Vac
<b>30</b>	24Vdc

Version	
<b>S206</b>	6 digit totalizer display

**SLM2XH3** Total/instant. flow rate indicator with analog in.  
4÷20mA analog input  
Removable 4 frontal push-buttons for calibration (optional)  
Working temperature: -10° ÷ +50°C  
Front panel mounting (dimA 92x45) IP54  
Accuracy: 0,005% ±1 digit  
Linearization: 0,005% ±1 digit

Power supply	
<b>00</b>	115Vac
<b>10</b>	230Vac
<b>20</b>	24Vac
<b>30</b>	24Vdc

Version	
<b>S206</b>	N.2 Display., 8 digit totalizer, 4 digits instantaneous flow rate

Accessories	
<b>A</b>	None
<b>P</b>	Removable 4 frontal push-buttons for calibration



## SGM BT Multisensor Application

Useful for calibration and display of SGM-Lektra sensors \*

For PTU51 / 56, RPL75 / 81, Meter6 / 10m level transmitters and RPlmag flow meter

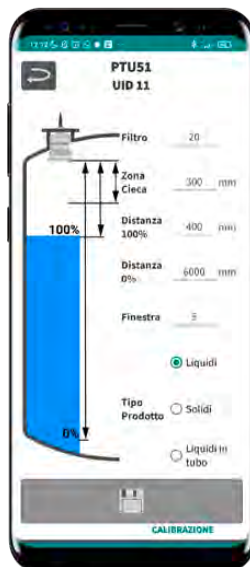
Compatible with Android 5 or higher devices

Connection via Bluetooth

SGM BT App lets you configure/calibrate your properly equipped SGM meter/transmitter right from your Android compatible smartphone/tablet, allowing a remote real-time reading of the levels/flows (max 10m in open-air). It has an intuitive, easy-to-use design and can be downloaded for free from Play Store.

\*The SGM LEKTRA instruments which are available with BLUETOOTH option are:

- METER/PTU51/PTU56 ultrasonic level transmitters
- RPL75/RPL81 80GHz radar level transmitters
- RPMAG/RSMAG/RKMAG electromagnetic flow meters
- FLOWMETER and FLOW51 ultrasonic flow meter





## 010F105A Modbus Software

Specific for the configuration via MODBUS of the Meter series level transmitters; PtU; ktU; Rpl81; Rpl75.



**WTR05**  
RS485 wireless antenna

- Suitable for MODBUS RTU digital transmission
- 2" GAS M threaded connection
- IP67 protection
- 24Vdc power supply
- Max distance transmission 100m

WTR05 is an access point of the wired RS485 network and allows to transmit MODBUS RTU data, or any digital transmission via RS485, without the need to lay cables between the different sectors of a system. WTR05 can be combined with 1 or more WTR05 to create a wireless data network.

**Technical Feature**

**Housing material**

PP

**Process connection**

2" GAS M

**IP rating**

IP67

**Cable gland**

2 x M16

**Electrical connection**

Removable terminal blocks

**Working temperature**

-20° ÷ +60°C

**Power supply**

10÷30Vdc

**Power consumption**

1W

**Serial communication**

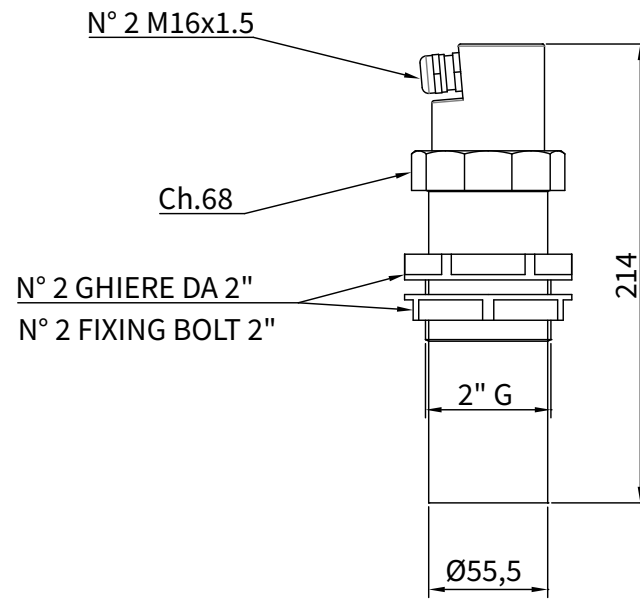
RS485 (Modbus RTU)

**Max distance between antennas**

100m

**Transmission frequency**

433MHz



**WTR05**

RS485 wireless antenna

Antenna for wireless data reception and transmission via RS485  
Possibility of connection with 1 or more WTR05 antennas  
Maximum transmission distance in free air 100m  
Baud rate 9600

Version	
A	Standard
Z	Special

Power supply	
4	10÷30Vdc

Accessories	
A	None
Z	Special



# Monitoring Systems for Stored Cereals

The silos or sheds used for the storage of cereals, flour or rice must maintain a cool temperature and a low degree of environmental humidity inside them in order to maintain the characteristics of the product unaltered, avoid the attack of parasites, the development of molds and prevent fires due to fermentation.

The display and monitoring of temperatures is therefore of fundamental importance.

SGM-Lektra, national leader in the sector for 40 years, produces Agritherm System, a range of complete systems for monitoring of temperature, level and humidity detected inside silos or sheds used for the conservation of cereals and grains.

The Agritherm range consists of control and display units which are able to manage the values detected by the TT multipoint digital probes for temperature measurement, by RPL58 radar probes for displaying the product level and by TU humidity probes.



	TT	TM
<b>Measurement</b>	temperature	
<b>Materiale fune</b>	SS304	
<b>Measurement range</b>	-30 ÷ +125°C	
<b>Process connection</b>	½" GM / flange PN6 DN40 under roof fixing	
<b>IP rating</b>	IP66	IP67
<b>Max probe length</b>	50 m	
<b>Max measurement points</b>	12	50
<b>ATEX</b>	yes	

	TU
<b>Measurement</b>	humidity
<b>Stem material</b>	SS
<b>Sensor filter material</b>	Sintered in SS
<b>Process connection</b>	M25x1.5
<b>Humidity meas. range</b>	0÷100%rh
<b>Temp. measurement range</b>	-20÷80°C
<b>IP rating</b>	IP66
<b>ATEX</b>	yes

	RPL58
<b>Measurement</b>	level
<b>Frequency</b>	26 GHz K Band
<b>Range</b>	70 m
<b>Antenna material</b>	PTFE / AISI 316 L
<b>Process connection</b>	G 1½" / flange DN 50 ÷ 250
<b>Process connection material</b>	SS 316 / PP / PTFE
<b>IP rating</b>	IP67
<b>Atex</b>	yes

The display and control units have been created in several versions suitable for the different complexity of the systems to be monitored and for the functions required by the customer.

We therefore pass from the small manual display unit to the more complex control system based on a Personal Computer or integrated into the management system of the entire plant.



	MUX	MUXM
<b>Certification</b>	ATEX II 2 (1) D IP66 T125°C	ATEX Zone 22 self certification
<b>Power supply</b>	230 Vac	85÷230 Vac
<b>IP rating</b>	IP66	IP66
<b>Probes max.</b>	8 TT	32 TM
<b>Housing material</b>	aluminium	aluminium
<b>Display</b>	internal 2x8 digits display	extractable module VL701 with O-LED display
<b>Communication</b>	RS485	MODBUS RTU



	AGRITHERMT5	AGRITHERMT60   T60P	AGRITHERM50
<b>Viewing and monitoring</b>	temperature	temperature   level   humidity	temperature
<b>Display</b>	touch screen 4,3"	touch screen 7" (T60) touch screen 9.7" (T60PLUS)	monitor PC
<b>Relays</b>	modular	modular	n° 5
<b>Installation</b>	front panel   IP66 enclosure	front panel	software PC
<b>Power supply</b>	24Vac/24 Vdc o 85÷230Vac	24Vdc	-
<b>IP rating</b>	IP65 front panel; IP66	IP65 front panel	-
<b>Requirements</b>	-	-	O.S. Windows 7 / 8 / 10
<b>Datalogger</b>	-	via USB Pen Drive	yes
<b>Remote access</b>	-	Via App	-
<b>Communication</b>	-	MODBUS TCP/IP	-



**TM**  
**Multipoint temperature probe for MUXM**

**MODBUS RTU communication**  
**Up to 50 digital temperature sensors**  
**Reduced tractive effort during unloading, suitable for installation on tin roofs**  
**Atex**

Multipoint thermometric probe with SS304 sheat, with digital sensors, for the temperature control inside silos or sheds (cereals and derivatives).Our probes have a high response speed due to the optimal combination of a low specific heat, combined with a high thermal conductivity and are therefore able to provide an early warning in case of fire in the empty part of the deposit.

**Technical Feature**

**Housing material**  
 epoxy coated aluminum

**Process connections**  
 1/2" G SS304; DN40 flanged; hook for under roof fixing

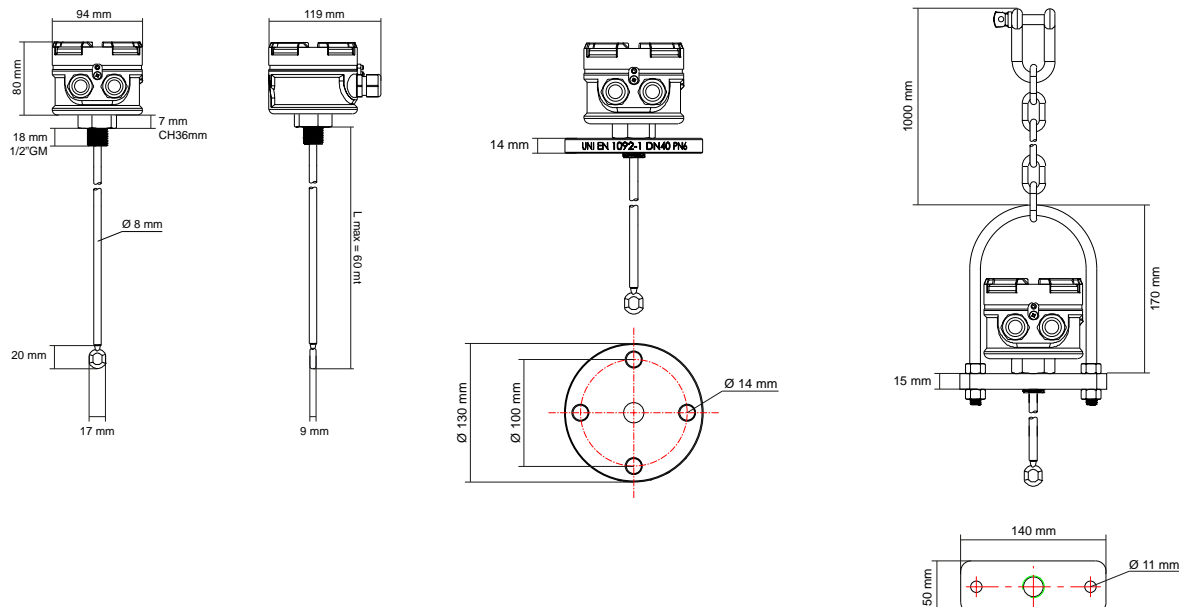
**IP rating**  
 IP67

**Detection points**  
 n° 1 ÷ xx (max n°50)

**Measure range**  
 -30 ÷ +125°C

**Accuracy**  
 ±0,5°C (-10°C ÷ +85°C)

**Certification**  
 ATEX II 1 D Ex ta IIIC T92°C Da / II 2D Ex tb IIIC T67°C Db - IP66  
 Tamb: -20°C ÷ 60°C





# TEMPERATURE PROBES | MONITORING SYSTEMS FOR STORED CEREALS

**TM** Digital multipoints temp. rope probe  
 IP67 aluminum varnished connection head  
 IP68 thermometric well in SS304 Ø8mm  
 Measurement range -30 to +125°C  
 Accuracy +/- 0,5°C da -10 a +85°C

Version	
1	Standard
9	Special

Process connection	
A	Thread 1/2" GM in SS304
B	Under roof fixing with 1m chain and accessories and DN40 PN6 carbon steel flange
C	1/2" SS304 thread with DN40 PN6 galvanized carbon steel flange
E	1/2" SS304 thread with DN40 PN6 polypropylene flange
Z	Special

Well, length	
0L	L= _____ meters
99	Special

Temperature sensor n.	
00	None
01	1
02	2
03	3
04	4
05	5
06	6
07	7
08	8
09	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
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30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
45	45
46	46
47	47
48	48
49	49
50	50
99	Special

Certification	
A	None
B	ATEX II 1 D Ex ta IIIC T92°C Da / II 2D Ex tb IIIC T67°C Db - IP66 Tamb: -20°C ÷ 60°C

Accessories	
0	None
2	Sensor mounted into the connection head
9	Speciale



**TT**  
**Multipoint temperature probe for MUX**

Up to 12 digital temperature sensors  
 Reduced tractive effort during unloading, suitable for installation on tin roofs  
 Atex

The TT probes find their main application inside silos for the storage of cereals, seeds or flours in order to ensure proper monitoring of product temperatures. The digital temperature sensors, positioned inside a semi-flexible sheath in AISI 304 and placed every 2.5 / 3 meters along the entire length of the probe, guarantee a measuring diameter of 7 meters (variable data depending on the measured product ).

**Technical Feature**

**Housing material**

alluminum DIN-B

**Process connections**

1/2" G SS304; DN40 flanged; hook for under roof fixing

**IP rating**

IP67

**Detection points**

n° 1 ÷ xx (max n°12)

**Measure range**

-30 ÷ +125°C

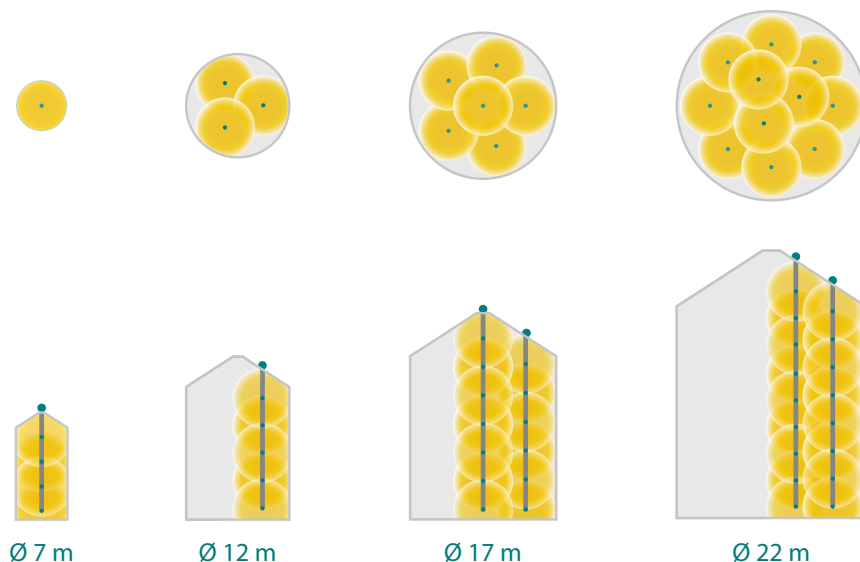
**Accuracy**

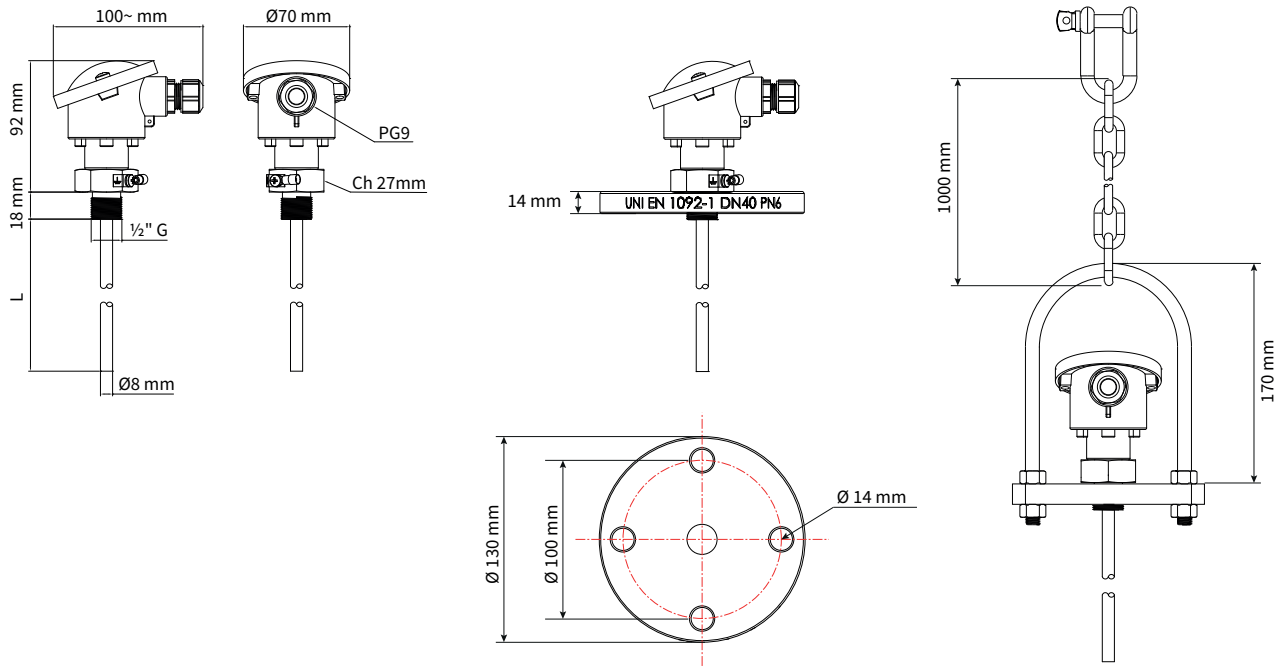
±0,5°C (-10°C ÷ +85°C)

**Certification**

ATEX II 1 D IP66 T125°C -

Tamb: -30°C ÷ 125°C





**TT** Digital multipoints temp. rope probe  
 IP66 aluminum varnished connection head  
 IP68 thermometric well in SS304 Ø8mm  
 Measurement range -30 to +125°C  
 Accuracy +/- 0,5°C da -10 a +85°C

Version	
<b>1</b>	Standard
<b>9</b>	Special
Process connection	
<b>A</b>	1/2" SS304 threaded
<b>B</b>	Under roof fixing with 1m chain and accessories and DN40 PN6 carbon steel flange
<b>C</b>	1/2" SS304 thread with DN40 PN6 galvanized carbon steel flange
<b>E</b>	1/2" SS304 thread with DN40 PN6 polypropylene flange
<b>Z</b>	Special
Well, length	
<b>0L</b>	L = ____meters
<b>99</b>	Special
Temperature sensor n.	
<b>00</b>	None
<b>01</b>	1
<b>02</b>	2
<b>03</b>	3
<b>04</b>	4
<b>05</b>	5
<b>06</b>	6
<b>07</b>	7
<b>08</b>	8
<b>09</b>	9
<b>10</b>	10
<b>11</b>	11
<b>12</b>	12
<b>13</b>	13
<b>99</b>	Special
Certification	
<b>A</b>	None
<b>B</b>	ATEX II 1 D IP66 T125°C - Tamb: -30°C ÷ 125°C
Accessories	
<b>0</b>	None
<b>2</b>	1 sensor mounted into the connection head
<b>9</b>	Special



## MUXM Multiplexer concentrator for TM probes

Extractable module VL701 with O-LED display  
Ambient temperature  $-20^{\circ} \div +70^{\circ}\text{C}$   
Connection of up to 32 probes mod. TM

MUXM multiplexer is a concentrator for temperature probes TM and humidity probes TU. At each MUXM you can be connected up to max. 32 probes TM + TU. In case of TM 32 probes each having max. 50 measuring points you get a total of 1600 controllable points. The electrical connection between probes and MUXM was made by shielded cable, while connection between MUXM and AGRITHERM-50 control unit was made by bipolar shielded cable for communication data. MUXM configuration was made via removable module VL701 and operations are displayed by O-LED display. The serial network can connect up to 63 MUXM.

### Technical Feature

**Housing material**

aluminium

**Installation**

wall mounting

**Programming**

via VL701 removable module with display and 4 buttons (opt.)

**Display**

OLED 57 x 30 digit alphanumeric

**Electrical connections**

removable terminals

**Power supply**

$85 \div 250\text{Vac } 50 \div 60\text{Hz}$

**Consumption**

3.5 VA

**Measuring inputs**

No. 4 x 8 TM or TU probes

**Conversion Resolution**

$0.1^{\circ}\text{C}$

**Maximum expansion system**

n°63 MUXM

**TM probes per MUXM unit**

max n°32

**Communication protocol**

MODBUS RTU

**Working temperature**

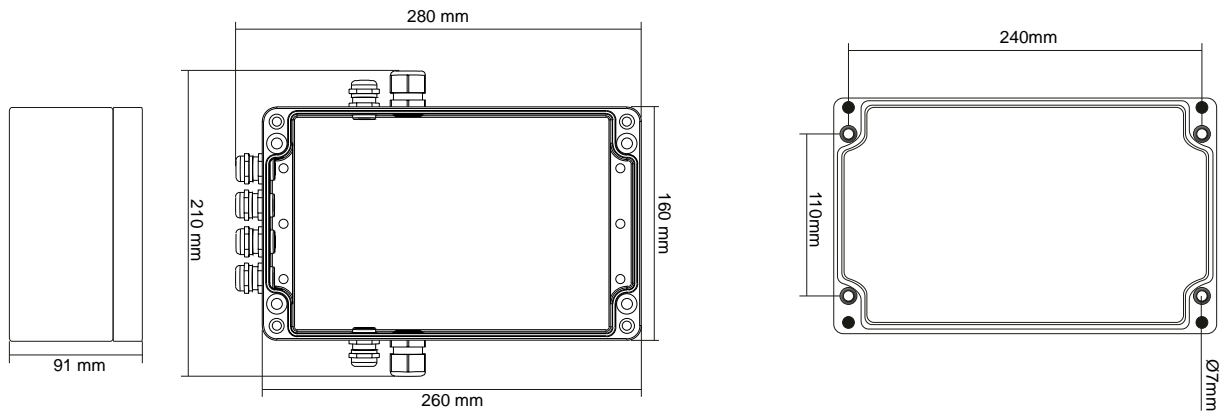
$-20^{\circ}\text{C} \div +70^{\circ}\text{C}$

**IP rating**

IP66

**Ex-proof**

ATEX Zone 22 self certification



**MUXM**

Concentrator for up to 32 TM probe

MODBUS port for system data transmission  
 Power supply : 85÷250Vac  
 Visualization ON-BOARD plug-in (optional)

Version	
02	IP66 aluminum enclosure with cable glands
99	Special
Certification	
AA	None
AC	ATEX Zone 22 self-certification
Accessories	
0	None
1	Display O-LED VL701 for configuration and visualization





## **MUX** Multiplexer concentrator for TT probes

Atex

Ambient temperature  $-20^{\circ} \div +70^{\circ}\text{C}$

Connection of up to 8 probes mod. TT

The multiplexer MUX is a concentrator of the signals coming from the temperature probes. At each MUX can be connected up to 8 probes, each having 12 measuring points, for a total of 96 controllable points. The electrical connection between the probe and the MUX is made with a FTP (24AWG) cable, while the connection between the Mux and the control unit Agritherm is realized with FTP (22AWG) cable suitable for digital data communication in RS485 serial network. The configuration of the MUX and the connected probes self-acquisition is done via the 3 buttons on board and operations are shown on the internal display. In serial network can connect up to 63 MUX. The communication protocol of the MUX is compatible with earlier detection, control and display temperature systems previously supplied by SGM LEKTRA.

### **Technical Feature**

**Housing**

wall mounting; IP66;

**Housing material**

aluminum

**Keyboard**

3 buttons

**Display**

2 x 8 digit alphanumeric

**LED**

green "power on"; red "RX/TX"

**Electrical connections**

removable terminals

**Power supply**

230V 50Hz

**Measuring inputs**

n.8 in 1-WIRE-BUS

**Conversion Resolution**

0,5°C

**Maximum expansion system**

n.63 units MUX02

**TT probes per MUX unit**

max n°8

**Communication**

RS485

**Working temperature**

$-20^{\circ}\text{C} \div +70^{\circ}\text{C}$

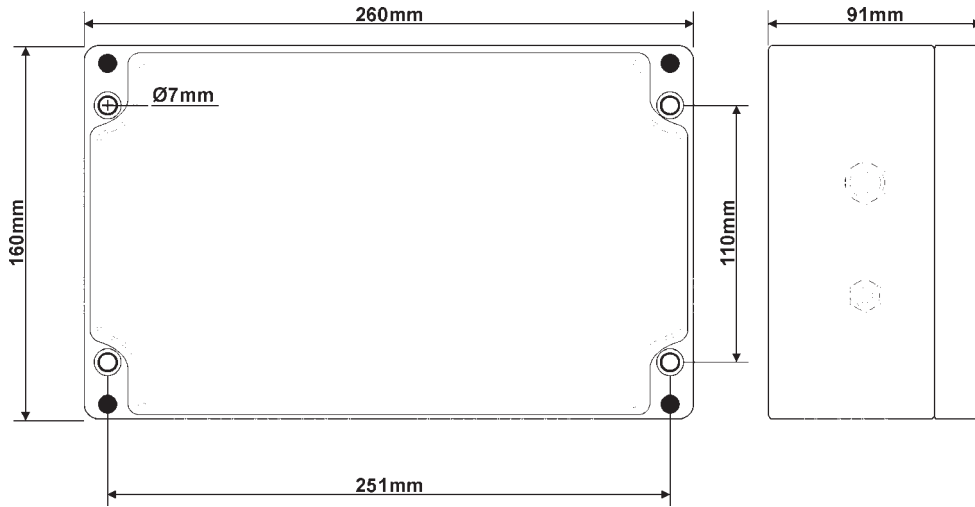
**IP rating**

IP66

**Ex-proof**

ATEX II 2(1) D IP66 T125°C

Tamb  $-20^{\circ}\text{C} \div 70^{\circ}\text{C}$



**MUX** Concentrator for up to 8 TT rope probe  
 RS485 for system modules communication  
 Power supply : 230V 50Hz  
 ON-BOARD visualization

Version	
<b>02</b>	IP66 aluminum enclosure with cable glands
<b>99</b>	Special
Certification	
<b>AA</b>	None
<b>Ex</b>	ATEX II 2(1) D IP66 T125°C Tamb -20°C ÷ 70°C



## TU Humidity and temperature probe

Suitable for use in the presence of powders  
 IP66 enclosure protection  
 2 outputs 4 ÷ 20mA  
 Atex certification

TU sensors are used to measure relative humidity and ambient temperature even in areas at risk of explosion and / or in places with flammable dusts. The probe comprises a sensor part with a sintered filter mounted on a robust die-cast aluminum housing (transmitter part), both made of stainless steel.

The specific sintered filter and ATEX certification make the TU transmitter particularly suitable for measuring humidity and ambient temperature inside silos for the storage of cereals.

The transmission of the measured values takes place via 2 galvanically separated 4 ÷ 20mA analog signals.

### Technical Feature

**Housing material**

Aluminum

**Sensor rod material**

AISI

**Sintered filter material**

AISI

**Mechanical installation**

M25x1.5

**Degree of protection**

IP66

**Working temperature**

-40 ° ÷ + 80 ° C

**Electrical connection**

Terminal blocks

**Power supply**

13 ÷ 24Vdc

**Absorbed power**

Max. 780mW

**Analog output**

N.1 4 ÷ 20mA - humidity transmission

N.1 4 ÷ 20mA - temperature transmission

**Humidity measurement range**

0 ÷ 100% rh

**Temperature measurement range**

-20 ÷ 80 ° C

**Accuracy of humidity measurement**

± 2% rh

**Accuracy of temperature measurement**

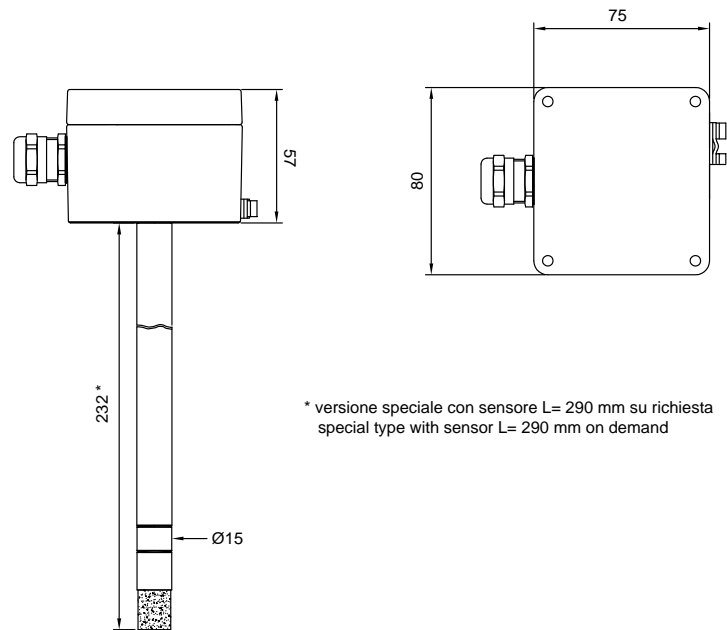
± 0.2 ° C

**ATEX**

II 1 / 2G Ex ia IIC T4

II 2D Ex tb IIIC T95 ° C

-40 ° C ≤ Ta ≤ + 80 ° C



**TU**

Humidity and temperature probe

Relative humidity range 0÷100%rh - Accuracy  $\pm 2\%$ rh  
 Temperature range  $-20^{\circ} \div +80^{\circ}\text{C}$  - Accuracy  $\pm 0,2^{\circ}\text{C}$   
 Nr. 2 4÷20mA output  
 Die-cast aluminium housing IP66 - Stainless Steel sensor  
 Sintered filter in Stainless steel for humidity sensor  
 Power supply 13÷24Vdc  
 Working temperature  $-40^{\circ} \div +80^{\circ}\text{C}$

Probe length	
1	Standard, L=232mm
2	Extended, L=290mm
9	Special
Process connection	
B	M25x1,5 mounting kit
Z	Special
Certification	
1	Atex II 1/2G Ex ia IIC T4 / II 2D Ex tb IIIC T95°C / $-40^{\circ}\text{C} \div \text{Ta} \div +80^{\circ}\text{C}$



## AGRITHERMT5 Temperature display unit

- 4.3 “touch screen display
- Direct connection to TM probes
- Connection to TT probes via MUX concentrator
- Graphical indication of alarms
- Relay module
- Versions:
  - A - IP65 front panel installation
  - B - Wall installation in IP66 enclosure
- 24Vdc; 85÷265Vac power supply

AGRITHERMT5 has a 4.3 “touch screen display on which it is possible to view internal temperatures in storage silos or warehouses. Its highly readable graphic allows you to view any average and / or maximum temperature alarms of the TT and TM multipoint thermometric probes. A simple and intuitive menu allows a quick setting of the average and / or maximum temperature values. The temperature of the probes are automatically displayed cyclically on the display, with the possibility of performing a manual scroll.

### Technical Feature

#### Display

4.3 “TFT LCD color resistive touch, resolution 480 x 272, LED backlighting (Life Time > 30000h)

#### Supply

“A” Version 24Vdc ±20%  
“B” Version 85-265Vac (50/60Hz)

#### Consumption

“A” version Max 500mA (10-point display + 10 TM), 12W @ 24Vdc  
“B” version Max 14W (10-point display + 5 TM)

#### Mounting dimensions (mm)

119x93

#### mounting

“A” version panel  
“B” version Wall-mounted, on a pole or on a DIN rail, with ABS case and transparent cover

#### Frontal protection

“A” version IP65 / NEMA4  
“B” version IP66

#### Storage temperature

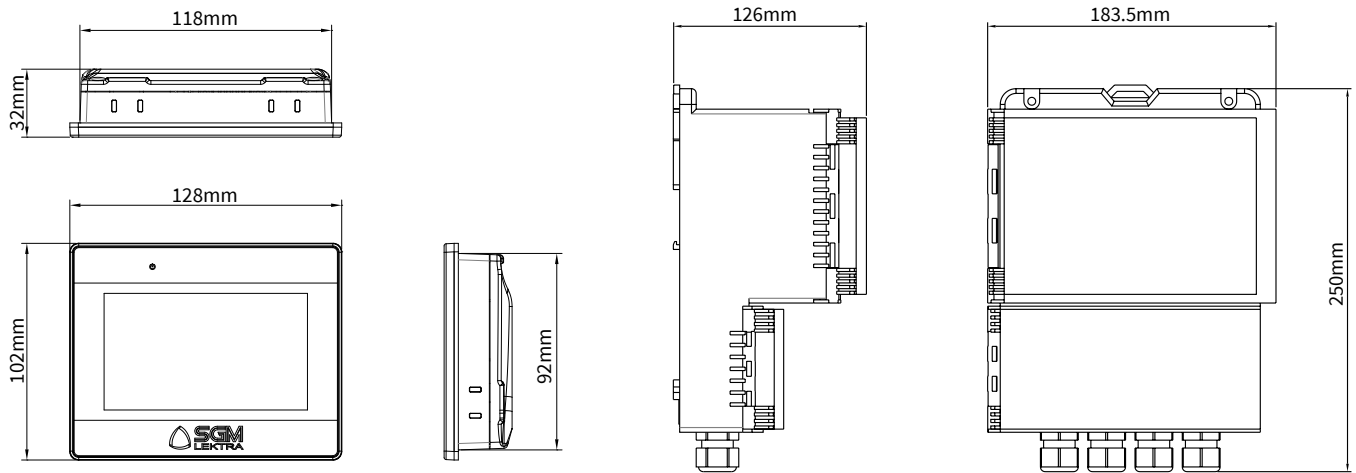
-20 ° ÷ 60 ° C

#### Working temperature

0 ÷ 50 ° C

#### Relative humidity

10 to 90% (without condensation)



**AGRITHERMT5** Temperature display unit for small plants  
 Suitable for small plants  
 4.3" touch screen display  
 Manual or automatic sequential display of temperature values

Version	
<b>A</b>	Front panel mounting IP65 (terminal IP40)
<b>B</b>	Wall mounting with IP66 enclosure + TM supply module
<b>Z</b>	Special
Power supply	
<b>1</b>	24Vdc
<b>2</b>	85-265Vac, 50/60 Hz (only for version B)
<b>9</b>	Special
Technical support	
<b>A</b>	Configuration/tagging on customer's plant layout
<b>Z</b>	Special
Relay outputs	
<b>0</b>	None
<b>1</b>	External module with 5 relay outputs for version A
<b>2</b>	Module 3 relay outputs for version B
<b>3</b>	External module with 10 relay outputs for version A
<b>4</b>	External module with 15 relay outputs for version A
<b>5</b>	External module with 20 relay outputs for version A
<b>9</b>	Special
Accessories	
<b>A</b>	None
<b>B</b>	Head terminal + 2 slot bus system for relay modules fast mounting for version A
<b>C</b>	2 slot bus system for relay modules fast mounting for version A
<b>Z</b>	Special



## AGRITHERMT60

### Temperature level and moisture display and control unit

7" Touch screen display

Alarm alert via display, email or relay

Display of temperature values/trends

Level measurement

Moisture measurement

Panel mount installation in control room

Remote control on Android/iOS/Windows devices

Remote assistance

Power supply 24Vdc

4.0 Industry Ready

AGRITHERMT60 is a unit for managing temperatures in silos or sheds for the storage of cereals. Through a 7" touch screen display it is possible to view the conditions of the TM or TT multipoint thermometric probes, connected to it by means of a MUXM or MUX02 concentrator, and the relative measured temperatures. A simple and intuitive menu allows quick setting of average and maximum temperature values and other system settings ensuring precise and effective monitoring of the entire system. The alarm signaling can be freely configured by setting visual alarms, automatic sending of alerts via e-mail or by controlling the relay outputs. The trend of the measurements taken and any alarms are available for reading via the display and stored on a USB memory unit, thus creating a historical archive of the measurements.

It is also possible to use it remotely on Android / iOS / Windows smartphones and tablets with special Apps.

AGRITHERMT60 is the gateway to INDUSTRY 4.0 thanks to the MODBUS server function via TCP / IP and the possibility of remote assistance.

### Technical Feature

#### Display

7" LCD touch 800 x 480

#### Pocessor

32 bit 600MHz

#### Memory

Flash 128MB RAM 128MB

#### Digital communication ports

Nr 2 MODBUS RTU via RS485(2W)

For data acquisition/management

from MUXM and relay module (opt)

Nr 1 MODBUS via TCP/IP for re-transmission of temperature data

#### USB port

Nr 1 for 8GB pen drive

#### Power supply

24Vdc  $\pm 20\%$

#### Consumption

Max 350mA

#### Dimensions (l x h x w) mm

200,3 x 146 x 34

#### Drilling template for panel mounting (mm)

192 x 138

#### Frontal protection

IP65 / NEMA4

#### Working temperature

0÷50°C

#### Relay module supply (opt)

20,4÷28,8Vdc

#### Relay module consumption (opt)

2,5W

#### Relay module mounting (opt)

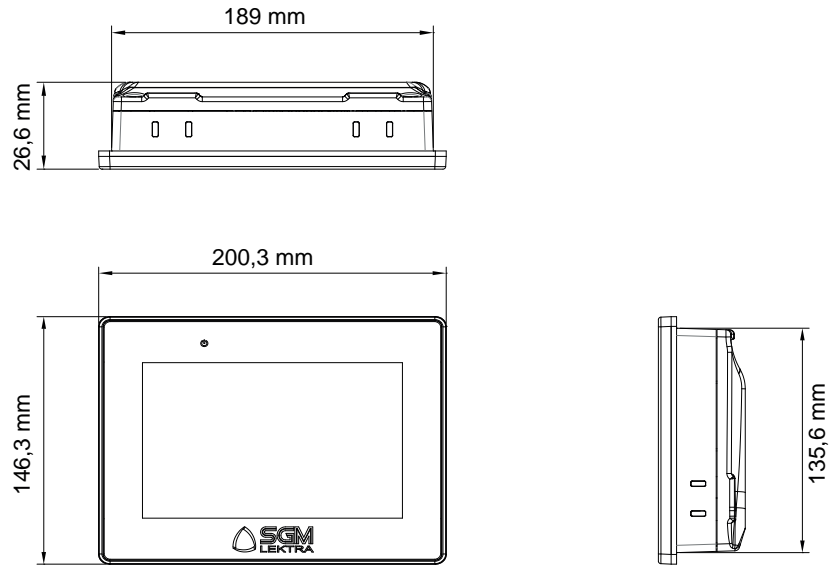
On DIN rail

#### Relay module output contacts (opt)

>250Vac, 30Vdc – 2A for single contact

#### Relay module working temperature (opt)

5÷55°C

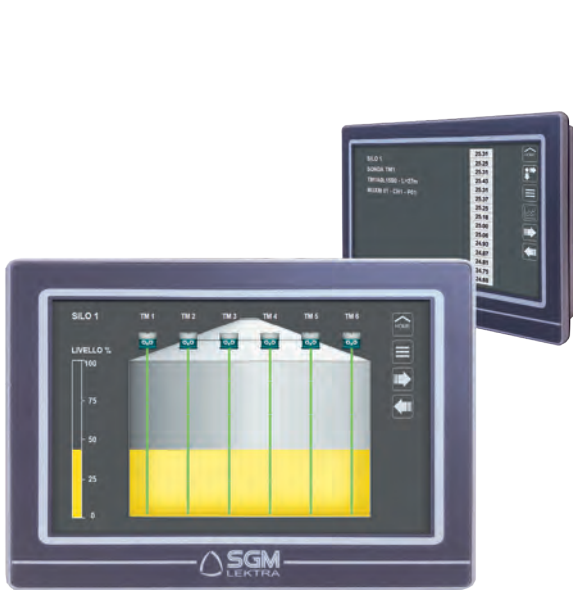


**AGRITHERMT60** Display and control unit

Touch display 7" TFT 800x480  
 Processor 32 bit 600MHz - Flash Memory 128MB - RAM 128MB  
 App Android / iOS / Windows (PC) for remote display via web  
 Power supply 24Vdc - Consumption 425mA - Working temperature 0-50°C  
 Master MODBUS RTU port on RS485 for MUX connection  
 Slave MODBUS TCP/IP port on Ethernet LAN1 10/100/1000 Base-T x 1  
 USB port with 8GB pen drive for temperature trend storage  
 Dimensions L x H x P (mm): 200.3 x 146.3 x 35.0 - Panel mounting  
 Frontal protection IP65 / NEMA4  
 Industry 4.0 ready

Version	
<b>A</b>	Standard (temperature monitoring)
<b>L</b>	Standard with level display
<b>U</b>	Standard with moisture display
<b>W</b>	Standard with level and moisture display
<b>Z</b>	Special
Technical support	
<b>0</b>	None
<b>1</b>	Configuration on customer's plant layout (up to 2 MUX)
<b>9</b>	Special
Extra technical support	
<b>A</b>	None
<b>B</b>	Configuration on customer's plant layout (for each MUX in addition to the first 2 )
<b>Z</b>	Special
Relay outputs	
<b>0</b>	None
<b>1</b>	External module with 5 relay outputs
<b>3</b>	External module with 10 relay outputs
<b>4</b>	External module with 15 relay outputs
<b>5</b>	External module with 20 relay outputs
<b>9</b>	Special
Analog inputs	
<b>A</b>	None
<b>B</b>	External module with 4 analog inputs
<b>C</b>	External module with 8 analog inputs
<b>D</b>	External module with 12 analog inputs
<b>E</b>	External module with 16 analog inputs
<b>F</b>	External module with 20 analog inputs
<b>Z</b>	Special
Accessories	
<b>0</b>	None
<b>2</b>	SGM LEKTRA remote assistance
<b>3</b>	Head terminal + 2 slot bus system for relay modules fast mounting
<b>4</b>	2 slot bus system for relay modules fast mounting
<b>9</b>	Special





## AGRITHERMT60P

### Temperature level and moisture display and control unit

9.7" Touch screen display

Alarm alert via display, email or relay

Display of temperature values/trends

Level measurement

Moisture measurement

Panel mount installation in control room

Remote control on Android/iOS/Windows devices

Remote assistance

Power supply 24Vdc

4.0 Industry Ready

AGRITHERMT60P is a unit for managing temperatures in silos or sheds for the storage of cereals. Through a 9.7" touch screen display it is possible to view the conditions of the TM or TT multipoint thermometric probes, connected to it by means of a MUXM or MUX02 concentrator, and the relative measured temperatures. A simple and intuitive menu allows quick setting of average and maximum temperature values and other system settings ensuring precise and effective monitoring of the entire system. The alarm signaling can be freely configured by setting visual alarms, automatic sending of alerts via e-mail or by controlling the relay outputs. The trend of the measurements taken and any alarms are available for reading via the display and stored on a USB memory unit, thus creating a historical archive of the measurements.

It is also possible to use it remotely on Android / iOS / Windows smartphones and tablets with special Apps.

AGRITHERMT60P is the gateway to INDUSTRY 4.0 thanks to the MODBUS server function via TCP / IP and the possibility of remote assistance.

### Technical Feature

#### Display

9.7" LCD touch 1024 x 768

#### Pocessor

32 bit 1GHz

#### Memory

Flash 512MB RAM 256MB

#### Digital communication ports

Nr 2 MODBUS RTU via RS485(2W)

For data acquisition/management

from MUXM and relay module (opt)

Nr 1 MODBUS via TCP/IP for re-transmission of temperature data

#### USB port

Nr 1 for 8GB pen drive

#### Power supply

24Vdc  $\pm 20\%$

#### Consumption

Max 350mA

#### Dimensions (l x h x w) mm

260.6x203.1x36.5

#### Drilling template for panel mounting (mm)

250x192

#### Frontal protection

IP65 / NEMA4

#### Working temperature

0÷50°C

#### Relay module supply (opt)

20,4÷28,8Vdc

#### Relay module consumption (opt)

2,5W

#### Relay module mounting (opt)

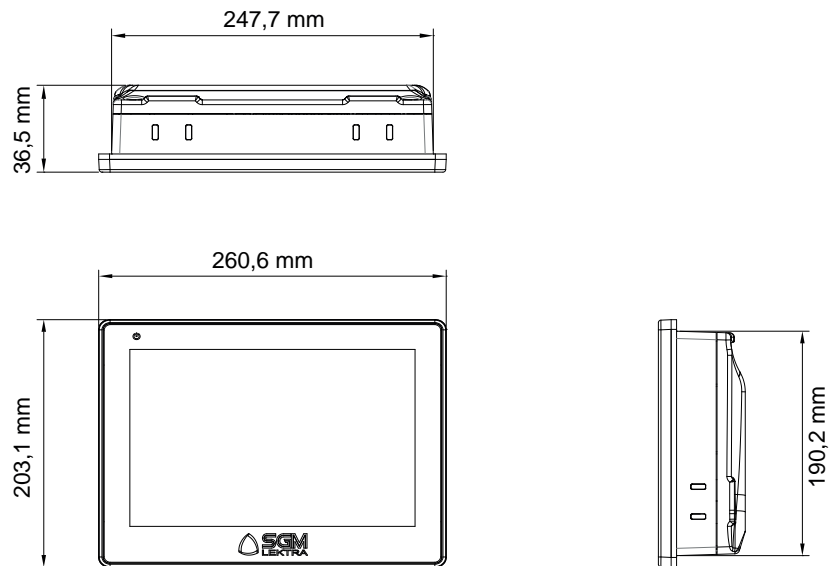
On DIN rail

#### Relay module output contacts (opt)

>250Vac, 30Vdc – 2A for single contact

#### Relay module working temperature (opt)

5÷55°C



**AGRITHERMT60P** Display and control unit

Touch display 9,7" TFT 1024x768  
 Processor 32 bit 1GHz - Flash Memory 512MB - RAM 256MB  
 App Android / iOS / Windows (PC) for remote display via web  
 Power supply 24Vdc - Consumption 425mA - Working temperature 0-50°C  
 Master MODBUS RTU port on RS485 for MUX connection  
 Slave MODBUS TCP/IP port on Ethernet LAN1 10/100/1000 Base-T x 1  
 USB port with 8GB pen drive for temperature trend storage  
 Dimensions L x H x P (mm): 260.6 x 203.1 x 36.5 - Panel mounting  
 Frontal protection IP65 / NEMA4  
 Industry 4.0 ready

Version	
<b>A</b>	Standard (temperature monitoring)
<b>L</b>	Standard with level display
<b>U</b>	Standard with moisture display
<b>W</b>	Standard with level and moisture display
<b>Z</b>	Special
Technical support	
<b>0</b>	None
<b>1</b>	Configuration on customer's plant layout (up to 2 MUX)
<b>9</b>	Special
Extra technical support	
<b>A</b>	None
<b>B</b>	Configuration on customer's plant layout (for each MUX in addition to the first 2)
<b>Z</b>	Special
Relay outputs	
<b>0</b>	None
<b>1</b>	External module with 5 relay outputs
<b>3</b>	External module with 10 relay outputs
<b>4</b>	External module with 15 relay outputs
<b>5</b>	External module with 20 relay outputs
<b>9</b>	Special
Analog inputs	
<b>A</b>	None
<b>B</b>	External module with 4 analog inputs
<b>C</b>	External module with 8 analog inputs
<b>D</b>	External module with 12 analog inputs
<b>E</b>	External module with 16 analog inputs
<b>F</b>	External module with 20 analog inputs
<b>Z</b>	Special
Accessories	
<b>0</b>	None
<b>2</b>	SGM LEKTRA remote assistance
<b>3</b>	Head terminal + 2 slot bus system for relay/input modules fast mounting
<b>4</b>	2 slot bus system for relay/input modules fast mounting
<b>9</b>	Special



## **AGRITHERM50**

### **Software for displaying and monitoring temperatures**

**Displaying and monitoring system**

**All reading points continuous refreshed**

**Alarm relay overcoming average and maximum temperature**

**Export data to Excel® or Access® format**

**Database for traceability**

**E-mail alert automatic sending**

**Security password**

Agritherm50 is a software specifically designed for the complete monitoring of the environmental parameters in storage plants. Its layout, highly customizable, allows the immediate display of the temperature profile inside each silo / warehouse, with the evidence of those measuring points that may have exceeded the set alarm thresholds. The software also allows the storing of the readings in Excel files, or in a database specifically created to accomplish a historical record of the temperatures and possibly of the alarm occurred. It is possible to configure the system to send e-mail messages in the presence of temperature alarms in the monitored system. The Agritherm50 is capable of interfacing, via RS485 serial lines, with SGM-LEKTRA temperature monitoring systems: MUXM / TM probes, MUX / TT probes, analog concentrators and PT100 / Ni10 / Ni100 probes. Agritherm 50 can be interfaced with management systems implant more complex as the Intellidatamonitor and AirControl, which allow the monitoring and implementation of all the controls to maintain the optimum storage conditions (fans, vacuum cleaners, refrigerators, automatic loading and unloading of the product).



**AGRITHERM50** Software for temperature display and control

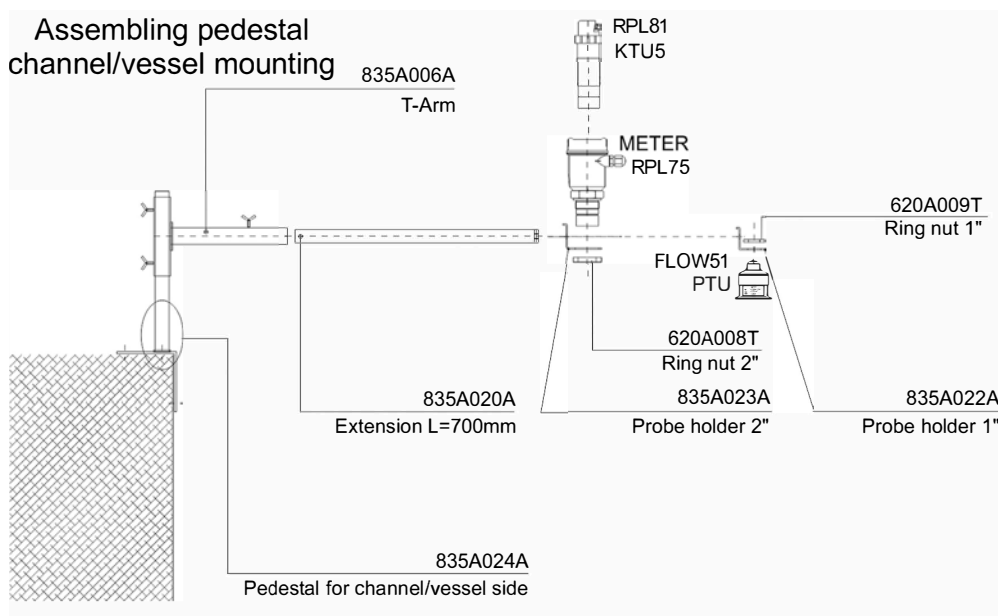
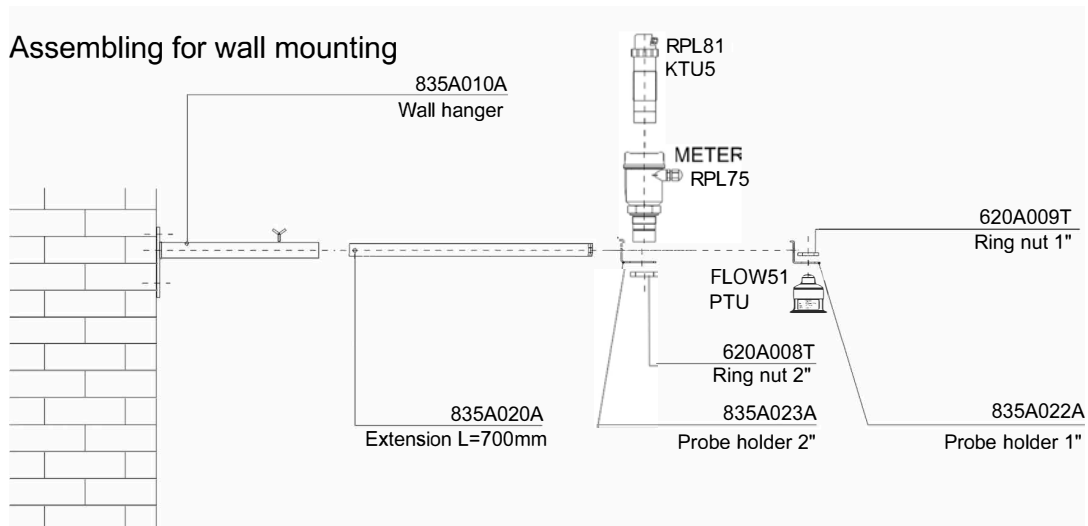
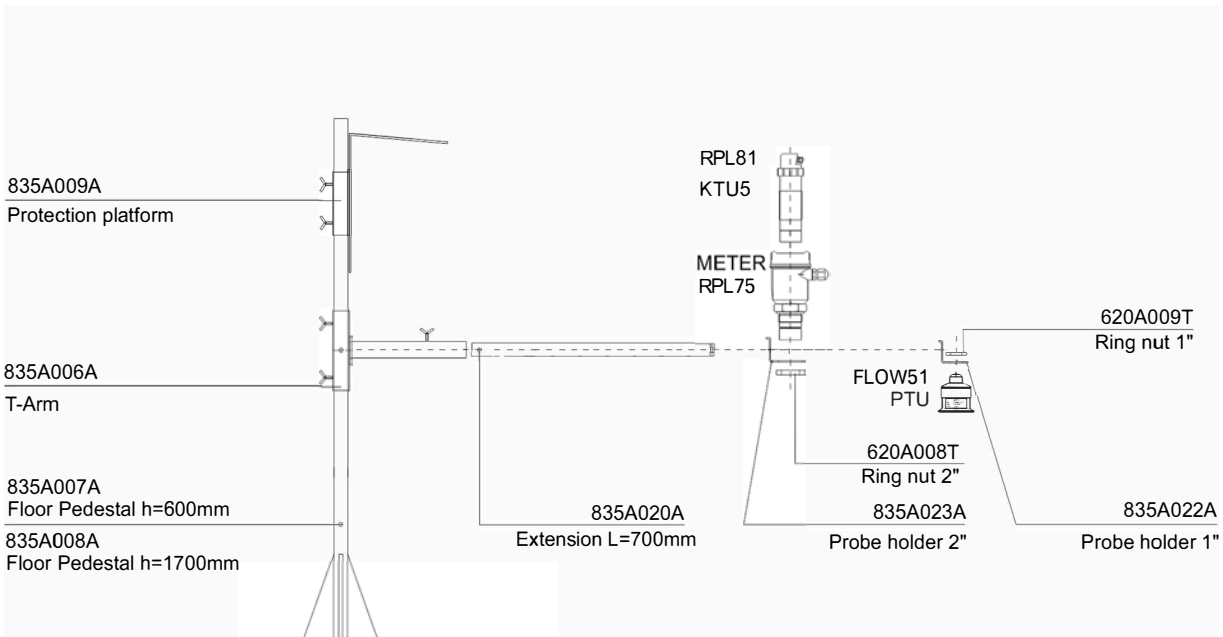
Suitable for MUX / MUXM connection  
 Possibility to: manual or automatic scans; synoptic planning; graphic print;  
 export data to Excel® or Access®; datalogger; sending warning e-mail.  
 Video pages temperature and alarms display  
 PC keyboard and long distance communication converter RS232/RS485  
 Programmable configuration of: MUX..., transducers, measur.point, alarms, etc.

Version	
<b>A</b>	Standard
<b>B</b>	Installed on a PC: RAM - 8GB - SS D250GB Operating System Windows 10 USB mouse and keyboard LED Monitors 22 "widescrenn, 1920x1080 resolution
<b>C</b>	Standard with external 5 relays output module (694A006A)
<b>D</b>	Installed on a PC with external 5 relays output module (694A006A): RAM - 8GB - SSD250GB Operating System Windows 10 USB mouse and keyboard LED Monitors 22 "widescrenn, 1920x1080 resolution
<b>Z</b>	Special
Accessories	
<b>0</b>	None
<b>1</b>	USB/RS485 converter module (694A004A)
<b>2</b>	Nr. 2 USB/RS485 converter modules (694A004A) for C and D versions
<b>9</b>	Special
Technical support	
<b>A</b>	None
<b>B</b>	Configuration/tagging on customer's plant layout for up to 2 MUXM
<b>Z</b>	Special
Extra technical support	
<b>0</b>	None
<b>1</b>	Configuration/tagging on customer's plant layout for each MUXM in addition to the first 2
<b>9</b>	Special

# Accessories and Spare Parts

UA Ultrasonic system accessories

Accessories	
010F105A	MODBUS RTU communication S/W for METER/PTU50-51-56/KTU
010F119A	MODBUS RTU communication S/W for FLOWMETER
120A003A	Electronic insert for METER version 4 (4-wire - 6m - 2 relays - MODBUS)
120A004A	Electronic insert for METER version 8 (4-wire - 10m - 2 relays - MODBUS)
120A108B	Electronic assembly for VLW90M 85÷265Vac
120A123B	Electronic assembly for VLW90M 20÷30Vdc/Vac
120A125A	Electronic insert for METER version 1 (2-wire - 6m)
120B108B	Electronic assembly for VLW90M 85÷265Vac - NO USB
120B123B	Electronic assembly for VLW90M 20÷30Vdc/Vac - NO USB
120B125A	Electronic insert for METER version 5 (2-wire - 10m)
290A015T	Extension for PTU5x L=250mm in PP + DN100 flange
290A016J	Adjustable extension for PTU5x Lmax=800mm in PP + DN100 flange in PP
397A014Z	Frontal panel + display for VLW90M
420A108B	VLW90M complete board 85÷250Vac + frontal panel
490A046C	Complete housing for VLW90M
490A052C	PC complete housing model "F" with anticondensation filter (transparent cover)
490A073C	PC complete housing model "L" with anticondensation filter (blind cover)
490B074C	Junction box in PC 6 way IP65
510A005A	Wireless MODBUS RS485 transceiver
540Z004A	PTU transmitters IP67 8-pin female connector to be wired
540Z071B	IP67female connector in SS316 + 5m 8 wires cable for PTU50-51-56, FLOW51 and KTU5
540Z072B	IP67 female connector in SS316 + 10m 8 wires cable for PTU50-51-56, FLOW51 and KTU5
540Z073B	IP67female connector in SS316 + 15m 8 wires cable for PTU50-51-56, FLOW51 and KTU5
540Z074B	IP67 female connector in SS316 + 20m 8 wires cable for PTU50-51-56, FLOW51 and KTU5
540Z075B	IP67 female connector in SS316 + 25m 8 wires cable for PTU50-51-56, FLOW51 and KTU5
540Z080B	IP67 female connector in SS316 + 50m 8 wires cable for PTU50-51-56, FLOW51 and KTU5
540Z089B	IP67 female connector in plastic + 5m 8 wires cable for PTU50-51-56
546A070N	Transparent cap for PC housing "F"
546A076N	Grey cap for PC housing "F"
600J001T	PP DN80 PN6 UNI 1092-1 flange
600K001T	PP DN100 PN6 UNI 1092-1 flange
620A008T	2" PP ring nut for METER/FLOWMETER/KTU5
620A009T	1" PP ring nut for PTU/FLOW51
694A007A	USB/RS485 conversion module for sensors setup
835A006A	Lateral SS316 fixing-bracket for vertical pedestal
835A007A	h=600mm vertical SS316 pedestal
835A008A	h=1700mm vertical SS316 pedestal
835A009A	SS316 sun protector plate, for vertical pedestal mounting (835A007A/835A008A)
835A010A	Wall mounting Vessel/channel lateral SS316 fixing-bracket
835A014A	Ø42 pipe SS316 holder
835A015A	Ø63 pipe SS316 holder
835A020A	Extension L=700mm
835A022A	PTU/FLOW51 SS316 holder
835A023A	METER/FLOWMETER/KTU5 SS316 holder
835A024A	Vertical SS316 pedestal channel/basin edge mounting
835A027R	PTU50/51 holder in PVC for "PALMER BOWLUS"
835A040A	Wall mount protection plate in SS304 for VLW90M
835B027R	FLOWMETER holder in PVC for "PALMER BOWLUS"
900A001A	Wall mounting kit for PTU (835A010A - 835A020A - 835A022A)
900A002A	Basin edge mounting kit for PTU (835A006A - 835A020A - 835A022A - 835A024A)
900A004A	Pedestal mounting kit for CA400 (835A006A+ 835A008A + 835A009A + 835A020A + 835A022A)
900A006A	Wall mounting kit for METER/FLOWMETER (835A010A - 835A020A - 835A023A)
VL601SGM	Keyboard/display module VL601 for METER
VL620SGM	Keyboard/display module VL620 for KTU5 IP67, complete with 1 m cable + USB connector
VL621SGM	Keyboard/display module VL621 for KTU5 IP67, complete with 1 m cable + M12 connector



Spare parts	
105A087A	TL41R electronic insert 24Vac/dc 36Vac configurable via VL601SGM display (not included)
105A087B	TL41R electronic insert 85÷230Vac configurable via VL601SGM display (not included)
105A088A	RSL200 electronic insert 24Vac/dc 36Vac configurable via VL601SGM display (not included)
105A088B	RSL200 electronic insert 85÷230Vac configurable via VL601SGM display (not included)
400A002B	TC20, 4÷20mA, "C", Calibration with dip-switches, 24Vdc; Out 4÷20mA
400A026B	TC7.3R local calibration, 24Vdc, 3 relays out for 3 adjustable set-points
400A050B	TC21, 4÷20mA, Calibration with dip-switches and trim, 24Vdc, "C"
400A055B	TC30, 4÷20mA, 2 push-buttons calibration, 2 wires, 10÷30 Vdc
400A061B	LV1 preamplifier insert for RSL200 vibration probe, relay output
400A072B	TC22, 4÷20mA, calibration by 2 push-buttons or via RS485, 24Vdc.
400A073B	TC23, 4÷20mA, calibration by 2 push-buttons or via RS485, 24Vac.
400A074B	TC24, 4÷20mA, calibration by 2 push-buttons or via RS485,115Vac.
400A075B	TC25, 4÷20mA, calibration by 2 push-buttons or via RS485, 230Vac.
400A076B	TC26, 4÷20mA, calibration by 2 push-buttons or via RS485,1relay, 24Vdc
400A077B	TC27, 4÷20mA, calibration by 2 push-buttons or via RS485,1relay, 24Vac
400A078B	TC28, 4÷20mA, calibration by 2 push-buttons or via RS485,1relay,115Vac
400A079B	TC29, 4÷20mA, calibration by 2 push-buttons or via RS485,1relay, 230Vac
410A001B	Interconnection printed-board for remote version (CLT,CLS and conductive)
490A001C	PC polycarbonate loaded head connection with nr. 1 cable gland + accessories mod. "B"
490A004C	DIN A aluminum head connection
490A007C	DIN B PA (poliammide) head connection
490A052C	PC complete housing model "F" with anticondensation filter (transparent cover)
490A067C	Aluminum complete housing
490A073C	PC complete housing model "L" with anticondensation filter (blind cover)
490B034C	PC complete housing for CLS_ remote versions mod "B" with nr. 1 cable gland
490B035C	PC complete housing for CLT_ remote versions mod "F" with M8 threaded connection
490C030C	RSL200 compact version mechanic without preamplifier insert
490S024C	TC/TL41 aluminum adapter without flange
490S025C	PC polycarbonate head (mod H) + aluminum adapter with 4 holes square flange
545A099N	Plastic enclosure + undecal plug
546A070N	Transparent cap for PC housing "F"
715A013A	IP66 gland PG13,5 for 8-13mm cable
715A018A	M20x1,5 gland for 10-14mm cable
810A003F	Washer + grounding cable for electronic insert fixing
810A011F	Bayonet bolt
899F001A	UNDECAL socket + fixing spring

CRA

Capacitive, conductive and vibration accessories

Accessories	
010D029A	RS485 communication software for TC22/30
306A008A	Coaxcable with double shielding + butting. Max. 70°C - L=2m
400A001C	SS316 L=1m threaded rod extension Ø10 mm for CLS
400A002C	Carbon-steel rope L = 1m Ø6mm with threaded connection and counter-weight - price each add. m €18,00
400A080C	SS316 rod L = 1m Ø6mm for RL3
400A081C	SS316 rod L = 2m Ø6mm for RL3
400A082C	SS316 rod L = 3m Ø6mm for RL3
400B001C	StainlessSteelwith brass ring welded, holes top/botton L=1000mm
410A001B	Interconnection printed-board for remote version (CLT,CLS and conductive)
525A001F	Coax. cable for separate version TC serie (price per meter)
525A003E	Coaxcable with double shielding. Max. 120°C with external sheath in EPDM; price per meter (max. 3m)
540Z085A	M12 female 5-pole connector for RSL100
585B005P	PTFE spreader for rods
585B005R	PVC spreader for rods
585B045P	PVC spacer for RL3
618A001A	Wing-nut for CLAMP 1" or 1 1/2" in SS304
618A002A	Wing-nut for CLAMP 2" in SS304
640C001A	Gasket Viton / PTFE for CLAMP 1" and 1 1/2"
640C002A	Gasket Viton / PTFE for CLAMP 2"
822A001C	Sensitized for Ø15mm SS316 Electrode
845A007A	Plug for CLAMP 1 1/2" in SS304
845A008C	Plug for CLAMP 2" in SS316
850A002B	Customer code identification label 18 characters SS316
886A001A	Fixing pipe for CLAMP 1" or 1 1/2" in SS304
886A001C	Fixing pipe for CLAMP 1 1/2" in SS316
886A002A	Fixing pipe for CLAMP 2" in SS304
886A002C	Fixing pipe for CLAMP 2" in SS316
902B008A	Calibration certificate with 5% water in biodegradable oil (PANOLIN)
902C008A	Calibration certificate with 5% water in mineral oil
VL601SGM	Keyboard/display module VL601
VL602SGM	Keyboard/display module VL602 for CLS5



**RA** Radar system accessories

Accessories	
<b>175A001A</b>	Electronic preamplifier 4-wire MODBUS 20÷30Vdc for RPL75
<b>490B074C</b>	Junction box in PC 6 way IP65
<b>835B026Z</b>	PP fixing bracket for RPL81
<b>PLS-010E11</b>	HART software for Radar
<b>PLS-451B00</b>	Electronic preamplifier 2-wire HART 24Vdc for RPL51/52
<b>PLS-451B00</b>	Electronic preamplifier 2-wire HART 24Vdc for RPL56
<b>PLS-451B00</b>	Electronic preamplifier 2-wire HART 24Vdc for RPL58
<b>PLS-451B00</b>	Electronic preamplifier 2-wire HART 24Vdc for RPL61
<b>PLS-451B00</b>	Electronic preamplifier 2-wire HART 24Vdc for RWL51/54
<b>VL601SGM</b>	Keyboard/display module VL601 for RPL75
<b>VL602SGM</b>	Keyboard/display module VL602 for RPL5_ and RWL51
<b>VL620SGM</b>	Keyboard/display module VL620 for RPL81 IP67 version with 1m cable + USB connector
<b>VL621SGM</b>	Keyboard/display module VL621 for RPL81 IP67 version with 1m cable + M12 connector

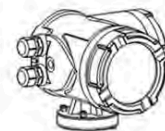
**MA** Electromagnetic system accessories

Accessories	
<b>675C042A</b>	Two-component gel for IP68 versions
<b>900A007A</b>	IP68 muffle joint kit - 3 conductors + shield
<b>900A008A</b>	IP68 muffle joint kit - 2 conductors + shield
<b>502A035V</b>	DN10 SS316 grounding ring
<b>502A001V</b>	DN15 SS316 grounding ring
<b>502A036V</b>	DN20 SS316 grounding ring
<b>502A002V</b>	DN25 SS316 grounding ring
<b>502A003V</b>	DN32 SS316 grounding ring
<b>502A004V</b>	DN40 SS316 grounding ring
<b>502A005V</b>	DN50 SS316 grounding ring
<b>502A006V</b>	DN65 SS316 grounding ring
<b>502A007V</b>	DN80 SS316 grounding ring
<b>502A009V</b>	DN100 SS316 grounding ring
<b>502A010V</b>	DN125 SS316 grounding ring
<b>502A013V</b>	DN150 SS316 grounding ring
<b>502A014V</b>	DN200 SS316 grounding ring
<b>502A017V</b>	DN250 SS316 grounding ring
<b>502A019V</b>	DN300 SS316 grounding ring
<b>502A020V</b>	DN350 SS316 grounding ring
<b>502A023V</b>	DN400 SS316 grounding ring
<b>502A025V</b>	DN450 SS316 grounding ring
<b>502A026V</b>	DN500 SS316 grounding ring
<b>502A027V</b>	DN600 SS316 grounding ring
<b>502A028V</b>	DN700 SS316 grounding ring
<b>502A029V</b>	DN800 SS316 grounding ring
<b>502A030V</b>	DN900 SS316 grounding ring
<b>502A031V</b>	DN1000 SS316 grounding ring
<b>502A032V</b>	DN1200 SS316 grounding ring
<b>502A033V</b>	DN1400 SS316 grounding ring
<b>502A034V</b>	DN1600 SS316 grounding ring
<b>502A001Y</b>	DN15 Hastelloy C grounding ring
<b>502A002Y</b>	DN25 Hastelloy C grounding ring
<b>502A003Y</b>	DN32 Hastelloy C grounding ring
<b>502A004Y</b>	DN40 Hastelloy C grounding ring
<b>502A005Y</b>	DN50 Hastelloy C grounding ring
<b>502A006Y</b>	DN65 Hastelloy C grounding ring
<b>502A007Y</b>	DN80 Hastelloy C grounding ring
<b>502A009Y</b>	DN100 Hastelloy C grounding ring
<b>502A013Y</b>	DN150 Hastelloy C grounding ring
<b>502A014Y</b>	DN200 Hastelloy C grounding ring
<b>621A002A</b>	Electromagnetic flow simulator
<b>835A038A</b>	Protection plate in SS304 for R_mag remote version
<b>835A039A</b>	Protection plate in SS304 for R_mag compact version
<b>909B001A</b>	3 points calibration certificate
<b>909B002A</b>	5 points calibration certificate
<b>909B003A</b>	3 points MID calibration certificate

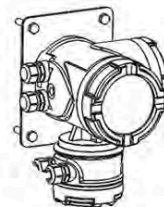
**MSP** Electromagnetic system spare parts

Spare parts	
155A016B	R_MAG electronic insert 85÷265Vac + data logger
155A016D	R_MAG electronic insert 85÷265Vac + data logger + VL701 display
155A017B	R_MAG electronic insert 85÷265Vac + data logger + BLUETOOTH
155A017D	R_MAG electronic insert 85÷265Vac + data logger + BLUETOOTH + VL701 display
155A122A	R_MAG electronic insert 85÷265Vac
155A122B	R_MAG electronic insert 85÷265Vac + BLUETOOTH
155A122C	R_MAG electronic insert 85÷265Vac + VL701 display
155A122D	R_MAG electronic insert 85÷265Vac + BLUETOOTH + VL701 display
155B016B	R_MAG electronic insert 20÷30Vdc/Vac + data logger
155B016D	R_MAG electronic insert 20÷30Vdc/Vac + data logger + VL701 display
155B017B	R_MAG electronic insert 20÷30Vdc/Vac + data logger + BLUETOOTH
155B017D	R_MAG electronic insert 20÷30Vdc/Vac + data logger + BLUETOOTH + VL701 display
155B122A	R_MAG electronic insert 20÷30Vdc/Vac
155B122B	R_MAG electronic insert 20÷30Vdc/Vac + BLUETOOTH
155B122C	R_MAG electronic insert 20÷30Vdc/Vac + VL701 display
155B122D	R_MAG electronic insert 20÷30Vdc/Vac + BLUETOOTH + VL701 display
155C016B	R_MAG electronic insert 12Vdc + data logger
155C016D	R_MAG electronic insert 12Vdc + data logger + VL701 display
155C017B	R_MAG electronic insert 12Vdc + data logger + BLUETOOTH
155C017D	R_MAG electronic insert 12Vdc + data logger + BLUETOOTH + VL701 display
155C122A	R_MAG electronic insert 12Vdc
155C122B	R_MAG electronic insert 12Vdc + BLUETOOTH
155C122C	R_MAG electronic insert 12Vdc + VL701 display
155C122D	R_MAG electronic insert 12Vdc + BLUETOOTH + VL701 display
396A122A	R_MAG mother board with data logger
396A122J	R_MAG power supply board 85÷265 Vac
396B122A	R_MAG mother board without data logger
396B122J	R_MAG power supply board 20÷30Vdc/Vac
396C122J	R_MAG power supply board 12Vdc
496A020A	RB MAG battery converter, compact version, pulse output
496A020B	RB MAG battery converter, compact version, pulse output, integrated GPRS, SD card
496A022A	RB MAG battery converter, compact version, pulse output, RS485
496A023A	RB MAG battery converter, compact version, analog output
496A024A	RB MAG battery converter, compact version, analog output, RS485
510A009A	Battery pack for Bmag
510A010A	Battery pack for Rbmag
510A014A	Battery pack for NEW Rbmag
525B004A	3 x 1,5 shielded cable for electromagnetic flowmeter (electrodes connection), price each meter
525B005A	2 x 1,5 shielded cable for electromagnetic flowmeter (magnetic inductance), price each meter
900B006C	R_MAG converter kit, compact version, 85÷265Vac with data logger (vers L, N)
900B007C	R_MAG converter kit, compact version, 20÷30Vdc/Vac with data logger (vers L, N)
900B008C	R_MAG converter kit, remote version, 85÷265Vac with data logger (vers B, C)
900B009C	R_MAG converter kit, remote version, 20÷30Vdc/Vac with data logger (vers B, C)
900B014C	Conversion kit compact/remote for R_mag converter with 5m cable
900B016C	R_MAG converter kit, remote version, 12Vdc with data logger (vers B, C)
900B020B	R_MAG converter kit, compact version, 12Vdc with data logger (vers L, N)
900B021B	R_MAG converter kit, compact version, 85÷265 Vac (vers T, V)
900B022B	R_MAG converter kit, compact version, 20÷30Vdc/Vac (vers T,V)
900B023B	R_MAG converter kit, compact version, 12Vdc (vers T,V)
900B024B	R_MAG converter kit, remote version, 85÷265Vac (vers R,S)
900B025B	R_MAG converter kit, remote version, 20÷30Vdc/Vac (vers R,S)
900B026B	R_MAG converter kit, remote version, 12Vdc (vers R,S)
VL701SGM	O-led plug-in display for R_mag

**VPA** Open Channel accessories



Mod. "C" converter compact version



Mod. "C" converter remote version

Accessories and spare parts	
120A007A	Electronic insert for FLOWMETER
270A010R	PVC spacing bars for PB200
270A021R	PVC spacing bars for PB350
270B010R	PVC spacing bars for PB300
270D010R	PVC spacing bars for PB500
835A027R	PTU50/51 holder in PVC for Palmer Bowlus
835B027R	FLOWMETER holder in PVC for Palmer Bowlus

TTA Accessories and spare parts transit time flow m.

Accessories and spare parts	
010C115A	SGM-200H SD card managing software
010F109A	MODBUS communication software for SGM-101F
498A003B	SGM-101F main board + display
510A007A	Batteries pack for SGM-100H
510A008A	Batteries pack for SGM-200H
520A005A	Fixing chain for transducers - price each mt
525B007A	Connection cable for SGM-101F transducers - price each mt
540Z023A	5m cables + connectors for SGM-200H
540Z084A	15m cable for PT100 with M12 connector
590A010A	Steel hose clamps (3m) for transducers fixing
590A011A	Nylon fast clamp belt (3m) for transducers fixing
590A012A	Nylon ratchet belt (4m) for transducers fixing
590A013A	Steel hose clamps (25m) for transducers fixing
717A005L	Pair of surface mounting brass plates for PT100 class A in MGO ø 3mm
750A069C	Pair of SS316 wells for PT100 class A in MGO with sliding fitting. Process con. G¼M - L=50mm
750A070C	Pair of SS316 wells for PT100 class A in MGO with sliding fitting. Proces.con. G¼M - L= 100 mm
816A001A	8GB SDHC Card
860A005A	Pair of PT100 class A in MGO with SS316 sheat ø 3mm. M12 connector - L= 150 mm
909C001A	3 points calibration certificate - for every pair of sensors
909C002A	5 points calibration certificate - for every pair of sensors
910A199A	Battery charger for SGM-200H
-100S-675C	Coupling grease for transducers (ml 120) - for SGM-101F
3M-101S-TC	Pair of insertion transducers for pipes with max thickness 20mm (SGM-101F) with 5m cables
3M-101S-TC	Pair of insertion transducers for pipes with max thickness 160mm (SGM-101F) with 5m cables
3M-101S-TL	Pair of clamp-on transducers DN300-4000 (SGM-101F) with 5m cables
3M-101S-TL	Pair of insertion transducers for pipes with max thickness 80mm (SGM-101F) with 5m cables
3M-101S-TM	Pair of clamp-on transducers DN50-700 (SGM-101F) with 5m cables
3M-101S-TM	Pair of high temperature transducers (0÷160°C) DN50-700 (SGM-101F) with 5m cables
3M-101S-TS	Pair of clamp-on transducers DN20-100 (SGM-101F) with 5m cables
3M-101S-TS	Pair of high temperature transducers (0÷160°C) DN20-100 (SGM-101F) with 5m cables
SGM-200H°C	SGM-200H main hand-held unit
-200S-675C	Coupling gel for transducers (ml 120) - for SGM-101H
M-200S-HM	Pair of transducers DN50-700 on metric frame (SGM-200H)
M-200S-HM	Pair of transducers DN50-300 on metric frame (SGM-200H)
M-200S-HS	Pair of transducers DN20-100 on metric frame (SGM-200H)
3M-200S-TL	Pair of clamp-on transducers DN300-4000 (SGM-200H)
3M-200S-TM	Pair of clamp-on transducers DN50-700 (SGM-200H)
3M-200S-TM	Pair of high temperature transducers (0÷160°C) DN50-700 (SGM-200H)
3M-200S-TS	Pair of clamp-on transducers DN20-100 (SGM-200H)
3M-200S-TS	Pair of high temperature transducers (0÷160°C) DN20-100 (SGM-200H)

OCP Open channel packing

Accessories	
650D023A	Wooden crate for Palmer Bowlus DN 350
650D015A	Wooden crate for Palmer Bowlus DN 400/500
650D014A	Wooden crate for Palmer Bowlus DN 600/700/800
650D016A	Wooden crate for Venturi BS300
650D017A	Wooden crate for Venturi BS400
650D018A	Wooden crate for Venturi BS500
650D019A	Wooden crate for Venturi BS600
650D020A	Wooden crate for Venturi BS800
650D021A	Wooden crate for Venturi BS1000

PA Pres. and differential pressure system accessories

Accessories	
199-2R3-L	2 valves manifold remote mounting in SS316L - 6000 psi - 1/2" NPT-F
199-3R1-L	3 valves manifold remote mounting in SS316L - 6000 psi - 1/2" NPT-F
490A074C	Junction box in PC 3 way IP65 - for KPL / KWL
693A004A	USB-HART modem HI321
750A064C	1½ G slip joint connection for KPL
750A065C	Nipple adapter for male G½" for KPL
835A001A	Cable anchoring clamps
835A035A	SS304 fixing bracket for SPT/SDT/FPT
902A013A	3 points calibration certificate
902A014A	5 points calibration certificate
902A015A	Customer calibration
KPTS-X	LCD digital display for KPT/CPT models
KPTS-Y	LCD digital display with 2 switch limited points for KPT/CPT models
SDTS-X	Backlit LCD display for SPT/FPT/SDT

**CCA** Accessories and spare parts for analytical

Accessories	
<b>SP324PVC</b>	Membrane with PVC cap for 324C probes
<b>SP324SS</b>	Membrane with SS cap for 324C probes
<b>SP503BV</b>	Insertion probe holder in SS for 164C <sub>-</sub> - Ball valve assembly DN40 with safety lock.
<b>SP513C050</b>	Immersion probe holder for 114C L= 507mm - Complete with terminal flange for electrode protection.
<b>SP513C100</b>	Immersion probe holder for 114C L= 1070mm - Complete with terminal flange for electrode protection.
<b>SP513C150</b>	Immersion probe holder for 114C L= 1570mm - Complete with terminal flange for electrode protection.
<b>SP513C200</b>	Immersion probe holder for 114C L= 2070mm - Complete with terminal flange for electrode protection.
<b>SP513C250</b>	Immersion probe holder for 114C L= 2570mm - Complete with terminal flange for electrode protection.
<b>SP513N050</b>	Immersion probe holder for 104C/114CH/604C L=570mm
<b>SP513N100</b>	Immersion probe holder for 104C/114CH/604C L= 1070mm
<b>SP513N150</b>	Immersion probe holder for 104C/114CH/604C L= 1570mm
<b>SP513N200</b>	Immersion probe holder for 104C/114CH/604C L= 2070mm
<b>SP513N250</b>	Immersion probe holder for 104C/114CH/604C L= 2570mm
<b>SP513R050</b>	Immersion probe holder for 324C L= 570mm - Complete with PVC 45° fitting.
<b>SP513R100</b>	Immersion probe holder for 324C L= 1070mm - Complete with PVC 45° fitting.
<b>SP513R150</b>	Immersion probe holder for 324C L= 1570mm - Complete with PVC 45° fitting.
<b>SP513R200</b>	Immersion probe holder for 324C L= 2070mm - Complete with PVC 45° fitting.
<b>SP513R250</b>	Immersion probe holder for 324C L= 2570mm - Complete with PVC 45° fitting.
<b>SP513R300</b>	Immersion probe holder for 324C L= 3070mm - Complete with PVC 45° fitting.
<b>SP513T050</b>	Immersion probe holder for 164C <sub>-</sub> L= 570mm
<b>SP513T100</b>	Immersion probe holder for 164C <sub>-</sub> L= 1070mm
<b>SP513T150</b>	Immersion probe holder for 164C <sub>-</sub> L= 1570mm
<b>SP513T200</b>	Immersion probe holder for 164C <sub>-</sub> L= 2070mm
<b>SP513T250</b>	Immersion probe holder for 164C <sub>-</sub> L= 2570mm
<b>SP515C</b>	Kit in SS for automatic rinsing of 114C probes.
<b>SP515O</b>	Kit in SS for automatic rinsing of 324C probes.
<b>SP515P</b>	Kit in SS for automatic rinsing of 104C / 604C probes.
<b>SP515T</b>	Kit in SS for automatic rinsing of 164C <sub>-</sub> probes.
<b>SP517A</b>	Probe holder for by-pass installation for 104C/604C 104C/604C - Transparent beaker in PMMA - for max 3 probes Ø 12mm
<b>SP517B1</b>	Probe holder for by-pass installation for 164CL - Black beaker in PP.
<b>SP10CP</b>	10m cable extension with IP67 connector
<b>SP20CP</b>	20m cable extension with IP67 connector
<b>SP50CP</b>	50m cable extension with IP67 connector

**TA** AGRITHERM system accessories

Accessories	
<b>525B025A</b>	Shielded connection cable FUTP2PR AWG624/1 CAT.5E ( €/meter)
<b>600F001F</b>	DN40 PN6 UNI EN 1092-1 flange in carbon steel
<b>600F001N</b>	DN40 PN6 PP flange UNI EN 1092-1
<b>694A004A</b>	USB/RS485 converter module
<b>694A006A</b>	5 relays output module
<b>694A019A</b>	4 analog inputs module / Modbus
<b>694A020A</b>	Head terminal + 2 slot bus system for relay/input modules fast mounting
<b>694A021A</b>	2 slot bus system for relay/input modules fast mounting
<b>694A022A</b>	8 analog inputs module / Modbus
<b>900A005A</b>	Under-roof fixing kit for TM probes with 1m chain and accessories
<b>900A009A</b>	Under-roof fixing kit for TT probes with 1m chain and accessories
<b>902A005A</b>	Agritherm configuration or modification made in factory
<b>VL701SGM</b>	O-led display for MUXM
<b>WTR05</b>	Wireless transceiver MODBUS RS485 - 24Vdc

**TSP** AGRITHERM system spare parts

Spare parts	
<b>140A004B</b>	Terminal board for TM probes
<b>350A010A</b>	MUX mother board
<b>350A013A</b>	MUXM mother board - without display