sgm lektra

level

flow

analytical

pressure

temperature

products line overview

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.

ultra compact sensor
designed for a GREEN future

R60

PFAS FREE

made with
recycled
materials

Level Measurement and Control

sgm lektra

RADAR

- For level measurement of liquids, solids, and powders
- Range up to 70 m (rod type) and 30 m (cable type)
- 2- or 4-wire connection with MODBUS and relay outputs
- Suitable for products with dielectric constant (Er) > 1.2
- Max process conditions: 250°C and 40 bar

ULTRASONIC

- Measuring range from 1.5 m to 12 m
- Suitable for level measurement and pump control
- Designed for liquids and bulk solids
- Unaffected by the electrical properties of the measured material
- Max process conditions: 70°C and 10 bar

CAPACITIVE

- Suitable for level measurement and control of liquids, bulk solids, and powders
- Ideal for level and/or pump control applications
- Measuring electrodes available in rod or cable versions
- Max process conditions: 150°C and 25 bar

HYDROSTATIC HEAD

- Suitable for level measurement of “clean” liquids and wastewater, with 4–20 mA analog output
- Measuring range: 0–200 m H_2O
- MODBUS and HART communication protocols
- Compact sensors with reduced diameter (16 mm)

DIAPASON

- Compact version, with rigid or semi-rigid extension
- Versions available for powders/granulates and for liquids
- Max process conditions: 150°C and 25 bar

RESISTIVE

- Single- and multi-electrode versions (up to 5 rods/cables)
- Suitable for electrically conductive liquids
- Used for level alarms and pump control
- Max process conditions: 180°C and 25 bar

Flow Measurement

ELECTROMAGNETICS

- Suitable for measurement of conductive liquids
- Internal lining in neoprene or PTFE
- High accuracy and excellent repeatability
- OLED display, Hastelloy C electrodes, MODBUS, 4–20 mA output
- Versions for food and pharmaceutical applications
- Data logging via USB pen drive

ULTRASONIC | TRANSIT-TIME

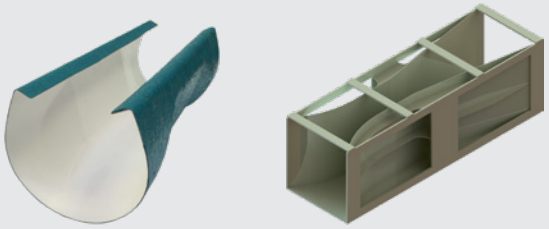
- Designed for flow measurement of clean liquids
- Non-intrusive installation using clamp-on sensors
- Integrated data logger
- Energy (heat) calculator function
- Battery-powered and externally powered
- Outputs: MODBUS, 4–20 mA, and pulse

ULTRASONIC | OPEN CHANNEL

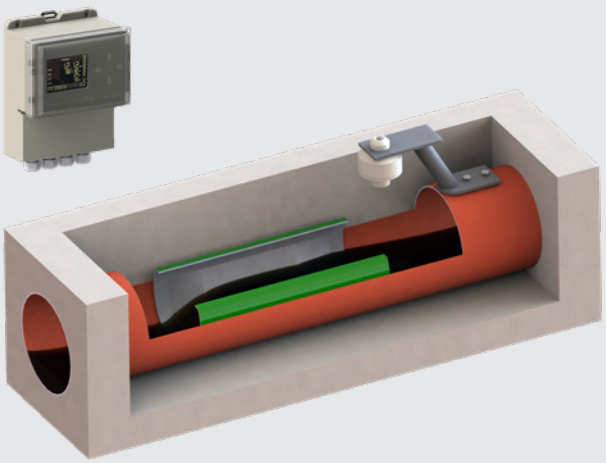
- Suitable for flow measurement in both open channels and non-pressurized pipes
- Programmable for any type of hydraulic structure
- Non-contact system – no contact with the fluid
- Low maintenance requirements and long-term reliability

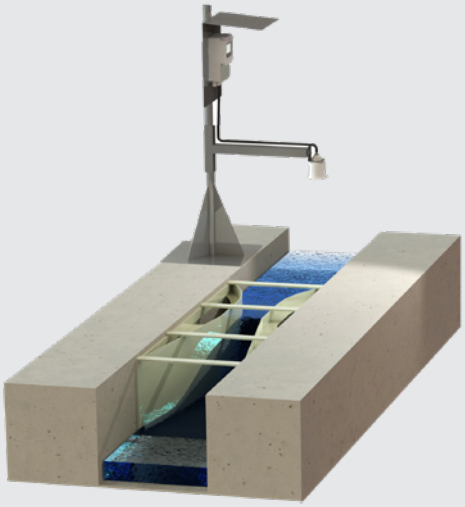
HYDRAULIC FLOW CONDITIONERS

- Suitable for applications in open channels (BS) and installations in partially filled pipes (PB)
- Widely used for flow monitoring in “dirty water” applications, thanks to their inherent self-cleaning effect



Application Examples – Flow Measurement in Pipes and Open Channels





Analytical

sgm lektra

MCA800

A display and control unit designed for wastewater treatment applications. The MCA800 can be connected to SGM-LEKTRA digital sensors for the measurement of pH, Redox, turbidity, suspended solids, conductivity, and dissolved oxygen. It supports direct connection of up to 4 digital sensors via MODBUS RTU communication.

pH

The 104C sensor is suitable for pH measurement in various applications. The porous Teflon® junction provides excellent resistance to fouling and chemical attack.

DISSOLVED OXYGEN

Used for the optical measurement of oxygen in pure and process water. The measurement principle is based on the dynamic quenching of luminescence by molecular oxygen.

CONDUCTIVITY

Conductivity measurement in pure and process water. Reliable two-electrode conductive measurement achieved through the use of graphite electrodes with temperature compensation.

HIGH CONDUCTIVITY

Sensor for the measurement of high conductivity in pure and process water. Reliable two-electrode conductive measurement with graphite electrodes and temperature compensation.

HIGH TURBIDITY

Measurement of turbidity in pure and drinking water, as well as in raw, industrial, and recirculating water. Measurement based on 90° light scattering, in accordance with ISO 7027 / EN 27027 standards.

LOW TURBIDITY

Measurement of turbidity in pure and drinking water, as well as in raw, industrial, and recirculating water. Measurement principle based on 90° light scattering, in compliance with ISO 7027 / EN 27027 standards.

SUSPENDED SOLIDS

Used for the optical measurement of suspended solids in industrial and process water up to 30 g/l. The probe operates on the light absorption measurement principle.

REDOX

Suitable for ORP measurement in various applications. The porous Teflon® junction provides excellent resistance to fouling and chemical attack.

Pressure Measurement

COMPACT TRANSMITTERS

- Compact pressure transmitters suitable for continuous level measurement of liquids and gases
- Piezoresistive technology
- Measurement accuracy: ±0.25%
- Threaded and sanitary process connections (DIN / clamp)

COMPACT TRANSMITTERS

- 2-wire 4–20 mA pressure transmitters
- Capacitive sensor with ceramic diaphragm
- High accuracy: 0.2% FS
- LCD display
- Compact design, suitable for installation in any position
- Extended temperature range up to 125°C

SMART TRANSMITTERS

- 2-wire 4–20 mA pressure or level transmitters
- Measured pressures: Negative, Absolute
- Excellent accuracy: ±0.075% FS
- Designed for heavy-duty / harsh environment applications
- Overpressure resistance: up to 500 bar (50 MPa)
- HART communication protocol
- ATEX

DIFFERENTIAL

- 2-wire 4–20 mA differential pressure transmitters
- Measuring range:
  from 0–1 mbar (0–100 Pa) up to 0–20 bar (0–2 MPa)
- Excellent accuracy: ±0.075% FS
- Overpressure resistance: up to 400 bar (40 MPa)
- HART communication protocol
- ATEX

Grain Storage Monitoring Systems

sgm lektra

DIGITAL TEMPERATURE PROBES

- Multipoint probes with AISI 304 stainless steel sheath
- Suitable for temperature monitoring inside silos or warehouses used for storage of raw materials (grains and derivatives)
- Contact measurement system
- ATEX

TT|TM PROBES CONCENTRATORS

- For the management and control of 1 to 32 digital temperature probes, single- or multi-point
- Configuration and local display via onboard screen and keypad, or through Agritherm50 software / AgrithermT60 unit
- ATEX

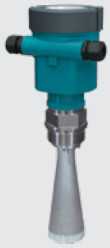
LEVEL MEASUREMENT AND CONTROL

RADAR | MEASUREMENT

• Range: up to 70 m • I26 GHz radar pulse technology • On-board display visualization • ATEX certified

ROTARY | CONTROL

• Level control of powdered or granular products using a rotating paddle system • ATEX certified



HUMIDITY PROBES

- Suitable for use in dusty environments
- IP66 housing protection
- Two 4–20 mA outputs
- ATEX certified

DISPLAY

- Temperature display unit specifically designed for mall-sized systems
- 4.5” touch screen display panel
- Display of temperatures in automatic or manual sequence

SW AND MONITORING UNIT

• Software specifically designed for comprehensive monitoring of environmental parameters in storage systems • Continuous detection of all measurement points • Suitable for connections with temperature, level, and humidity probes SGM Lektra

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Radar | level measurement

Radar level probes are instruments designed for level measurement of liquids, powders, and solid materials inside tanks, silos, and vessels. These level transmitters use high-frequency radar waves to determine the distance between the probe and the surface of the measured material, providing accurate measurements without direct contact with the product.

They are highly valued for their precision and reliability, even under challenging environmental conditions such as high temperature, pressure, dust, foaming liquids, or corrosive chemical substances.

PFAS FREE

made with recycled materials

GREENBEAT	R60	R80	R81	R75
Application	liquids			
Operating Frequency	57÷64GHz	77 ÷ 81GHz		
Operating Temperature	-40 ÷ +80°C	-40 ÷ +80°C	-20 ÷ +60°C	-20 ÷ +60°C
Process Pressure	-1÷3bar	-1÷3bar	-1÷3bar	-1÷3bar
Measuring Range	0.05 ÷ 1.5 | 10 | 20m	8 | 15m	20m	20m
Antenna Material	Recycled PP	Recycled PP | PVDF	Recycled PP	Recycled PP
Process Connection	1”G Thread	1½” G threaded; optional flange or bracket	2”G Thread	2” G thread; optional PP flange
Process Connection Material	Recycled PP	Recycled PP | PVDF	Recycled PP	Recycled PP
Accuracy	± 5 mm			
Power Supply	10-30Vdc 4 wire	20÷30Vdc | 2 wire	20÷30Vdc | 4 fili	20÷30Vdc | 4 fili
Protection Rating	IP68	IP68	IP66/IP68 (Sensore) - IP68 opz.	IP67
Output Signal	4÷20mA, Modbus; 2 open collector; Bluetooth	4 ÷ 20 mA; Bluetooth	2 relè; 4 ÷ 20 mA; Modbus; Bluetooth	2 relè; 4 ÷ 20 mA; Modbus; Bluetooth
Display Module	no			yes
Atex	no			

They can be used in a wide range of industrial sectors, including the chemical, food, pharmaceutical, water treatment, agriculture, and mining industries.
Radar level transmitters represent a reliable and precise solution for monitoring material levels in various industrial environments. Their use helps improve operational efficiency by ensuring accurate control of production processes.

	RPL55	RPL56	RPL58	RPL59
Application	liquids	liquids	liquids / solids / powders	
Operating Frequency	26 GHz K band	26 GHz K band	26 GHz K band	
Operating Temperature	-40 ÷ 130°C	-60 ÷ 250°C	-60 ÷ 250°C	
Process Pressure	-1 ÷ 3 bar	-1 ÷ 40 bar	-1 ÷ 40 bar	
Measuring Range	10 m	30 m	70 m	15m solids 30m liquids
Antenna Material	PVDF	PTFE / AISI 316 L	PTFE / AISI 316 L	
Process Connection	G 1½”	G 1½” / flange DN 50 ÷ 100	G 1½” / flange DN 50 ÷ 250	
Process Connection Material	PVDF	SS 316 / PP / PTFE	SS 316 / PP / PTFE	
Accuracy	± 5 mm	± 3 mm	± 15 mm	± 10 mm
Power Supply	24 Vdc / 230 Vac	24 Vdc / 230 Vac	24 Vdc / 230 Vac	
Protection Rating	IP67	IP67	IP67	
Output Signal	2/4 wire 4 ÷ 20 mA Hart	2/4 fili 4 ÷ 20 mA Hart	2/4 fili 4 ÷ 20 mA Hart	
Display Module	si	si	si	
Atex	si	si	si	

Guided Wave Radar | level measurement

A short electromagnetic pulse propagates along the probe (cable or rod) and is reflected back once it reaches the end of the probe. When the probe is immersed in the product to be measured, a discontinuity occurs at the interface between air and material, generating a reflected echo that returns to the transmitter and is detected as the surface level of the product. A time expansion method is used to evaluate the time of flight of the signal—which, due to its extremely short duration—allows for a highly accurate calculation of distance, and consequently, of the product level. This technology is particularly suitable for powders, granulates, and coarse materials such as plastic chips in tall and narrow silos, and for applications in the food industry, since no recalibration is required when changing product type. It is also suitable for construction materials such as sand, gravel, and similar bulk solids. Calibration can be performed even in the absence of product.

The instrument emits high-frequency pulses through a probe. These pulses are reflected by the surface of the product, detected by the microprocessor-based electronic unit, and converted into a level measurement. The measurement technique, combined with the EchoDiscovery signal processing system, allows RWL units to operate reliably even under extremely demanding process conditions. The versatility of RWL transmitters makes them suitable for a wide range of applications with severe operating conditions, such as high temperature, high pressure, or low dielectric constant, and with materials such as cement, sand, and other bulk solids.

	RWL51
Application	liquids / solids
Probe Type	cable / rod / semi-flexible Tube
Process Temperature	-40 ÷ 150°C
Process Pressure	-1 ÷ 40 bar
Maximum Probe Length	3 m (rod) 30 m (cable or semi-flexible tube)
Probe Material	SS 316 L / SS 304
Process Connection	G 1½" / G 2"
Process Connection Material	AISI 316 L
Accuracy	± 10 mm
Power Supply	24 Vdc / 230 Vac
Protection Rating	IP67
Output Signal	2/4-wire 4–20 mA HART; MODBUS

Ultrasonic | level measurement

Ultrasonic level probes are instruments used to measure the level of liquids or solid materials by emitting high-frequency (ultrasonic) pulses and analyzing the time taken for the echo to return. This highly versatile method can be used for measuring the level of liquids and bulk solids in industrial tanks, silos, transport containers, or basins. Ultrasonic probes are suitable for long-distance measurements and for applications where a non-contact reading is required. However, they are not suitable for pressurized environments, dusty processes, or in the presence of heavy foam on liquid surfaces. In general, ultrasonic level probes offer numerous advantages and are a common choice for level measurement in industrial applications. Nevertheless, it is essential to consider the specific requirements of each application and carefully evaluate the technical characteristics before selecting this measurement technology.

	METER	KTU
Application	liquids / solids	liquids / solids
Technology	4/2 wire	4 wire
Blocking distance	25 / 40 cm	25 / 40 cm
Operating temperature	-20 ÷ +60° C	-20 ÷ +60° C
Maximum pressure	+ 1 bar	+ 1 bar
Measuring range	6/10 m (liquids)	6/10 m (liquids)
Sensor material	PP / PVDF	PP
Process connection	G2” / flange DN80	G2” / flange DN80
Accuracy	0.2% (of the measured distance)	0.2% (of the measured distance)
Mechanical protection	IP67	IP67
Power supply	20÷30Vdc | 11÷14Vdc	20 ÷ 30 Vdc | 24/115/230 Vac
Communication port	MODBUS / HART / BLUETOOTH	MODBUS
Atex	yes	no

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

- PTU series – IP67 | IP68 transmitters, measuring range up to 12 m
- METER series – Compact IP67 units with removable display, measuring range up to 10 m
- KTU series – Compact IP67 | IP68 units with remote display for calibration, measuring range up to 10 m

Associated units: VLW90M – VLW60T – VLW602 (for PTU series only)
Depending on the 2- or 4-wire technology, communication can be performed via HART, Modbus RTU, or Bluetooth.
Software for PC installation and Android Apps are available on request for communication and calibration of the units.
For applications in hazardous areas, ATEX-certified versions are available.

	PTU50 | 51 | 56		
Application	liquids	liquids / solids	liquids / solids
Technology	4 wire		
Blocking distance	5 cm	30 cm	50 cm
Operating temperature	-20 ÷ +60° C		
Maximum pressure	+ 0,5 bar		
Measuring range	1 m (liquids)	6 m (liquids)	12 m (liquids)
Sensor material	PP		
Process connection	G1" / flangia DN100;125		
Accuracy	0.2% (of the measured distance)		
Mechanical protection	IP67|68		
Power supply	20 ÷ 30 Vdc		
Communication port	MODBUS	MODBUS / BLUETOOTH	
Atex	no		

Capacitive | level measurement

Capacitive probes operate by measuring the variation in electrical capacitance between two electrodes immersed in the product, whether liquid or solid. The product level changes the capacitance between the two electrodes, allowing its height to be calculated. This technique is particularly suitable for conductive liquids such as water and saline solutions. It is a reliable and accurate measurement method for various applications, provided that proper calibration and configuration are carried out. An electronic insert mounted inside a protective housing determines the operating mode of the probe.

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

The fully digital operation allows calibration by means of two buttons or through PC software.

	CLT4	CLT7	CLT8
Applications	liquids / solids	solids / granulates	liquids
Wetted material	SS 316 / PVC / PTFE	carbon steel SS 316 / PE	SS 316 / PVC / PTFE
Max product temperature	150°C	85°C	150°C
Max pressure	25 bar	6 bar	25 bar
Max probe length	3 m | 2 m insulated in PTFE 8/12	30 m	30 m
Process connection	G ½" ÷ G 1½" / 1" NPT DIN DN 25 ÷ 50 / clamp 1" ÷ 2"	G 1½"	G 1" / G 1½" / 1" NPT DIN DN 25 ÷ 50 / clamp 1" ÷ 2"
Process connection material	CARBON STEEL / SS 316 / SS 304L / PVC / PTFE	CARBON STEEL / SS 316 / SS 304L	CARBON STEEL / SS 316 / SS 304L PVC / PTFE
Power supply	24 Vdc / Vac 115 Vac / 230 Vac	24 Vdc / ac 115 Vac / 230 Vac	24 Vdc / ac 115 Vac / 230 Vac
Protection	IP66 ÷ 67	IP66 ÷ 67	IP66 ÷ 67

Hydrostatic Head | level measurement

Level measurement by hydrostatic head is based on the pressure exerted by the fluid at the bottom of the tank. The pressure increases as the level rises. This pressure is then converted into a measurement of the liquid height. This technique is commonly used in tanks or wells where the pressure is directly proportional to the fluid level. It is a simple and robust technology, suitable for non-aggressive and non-viscous liquids. They are mainly used for level measurement in:

- Tanks
- Reservoirs and wells
- Water lifting pits
- Groundwater level measurement

nstallation is always from the top. Depending on the model, the sensor can be suspended using tubes (rigid extension) or an extension cable (flexible extension).

	KPL transmitter for clear water	KWL transmitter for wastewater
Application	liquids	liquids
Wetted material	PU / SS 316 L	PVC / Gilded ceramic
Operating temperature	-20 ÷ 70°C	-10 ÷ 50°C
Output	4 ÷ 20 mA	4 ÷ 20 mA
Version / Execution	PU cable	PU cable
Measuring range	1 ÷ 200 m H_2O	1 ÷ 200 m H_2O
Sensor diameter	Ø 27 / 16 mm	Ø 46 mm
Process connection	suspended / G 1"; G1"1/2 (opt.)	suspended / G 2" (opt.)
Process connection material	SS 304 (opz.)	PP (opt.)
Enclosure protection	IP66 (opt.)	IP66 (opt.)
Probe protection	IP68	IP68
Power supply	10 ÷ 36 Vdc	12 ÷ 30 Vdc

Capacitive | level control

The capacitive level probe is used to detect the maximum or minimum level of a liquid or granular solid inside a tank or silo. The operating principle of a capacitive level probe is based on the variation of the capacitance of a capacitor, which is influenced by the level of material present in the sensing area. Capacitive level probes are precise and reliable, especially when properly calibrated and correctly installed. The measurement accuracy depends on the dielectric constant of the product being monitored. Therefore, if the material has variable or non-uniform dielectric properties, measurement errors may occur.

	CLS2	CLS4	CLS7
Applications	liquids / solids	liquids / solids	solids / granulates
Wetted material	SS 316 / AVP / PVC / PTFE	SS 316 / PVC / PTFE	CARBON STEEL / AISI 316 / PE
Max temperature	150°C	150°C	85°C
Max pressure	25 bar	25 bar	6 bar
Max probe length	3 m rod – 10 m cable	2 m for liquids | 3 m for solids	30 m
Atex	yes	yes	yes
Process connection	G ¾" / G 1" / G 1½"	1" NPT / G ½" ÷ 1½" DIN DN 25 ÷ 50 clamp 1" ÷ 2"	G 1½"
Process connection material	CARBON STEEL / SS 316	CARBON STEEL / SS 316 / PVC PTFE / SS 304 L	CARBON STEEL / SS 304 / SS 316
Power supply	85÷230Vac / 24Vdc/Vac - 36Vac	85÷230Vac / 24Vdc/Vac - 36Vac	85÷230Vac / 24Vdc/Vac - 36Vac
Protection	IP67	IP66 ÷ 67	IP66 ÷ 67

Conductives | level control

Utilizza la conducibilità del liquido da controllare; la corrente elettrica attraversa il liquido e viene a contatto con l'elettrodo che rivela il livello raggiunto. Le sonde disponibili possono essere a singolo elettrodo o multi elettrodo (max 5) ad asta o a fune. Gli attacchi al processo sono i più vari, filettati, flangiati o sanitari di differenti dimensioni e materiali.
Le centraline associate alle sonde resistive permettono regolazioni di sensibilità, tempi di ritardo e anche la verifica dei collegamenti tra sonda e centraline di controllo.

	RL3 multielectrode probe	RL6 multielectrode probe	RL8 multielectrode probe	RAL11|12|13 control unit
Applications	liquids			
Wetted material	SS 316	SS 316 / PVC / PTFE / FEP	SS 316 / PVC	-
Max product temperature	150°C	150°C	60°C	50°C
Max pressure	25 bar	25 bar	25 bar	-
Max probe length	3 m	3 m	30 m	3 m
Process connection	G 1½"	G ¾" ÷ 1½"/NPT ¾" ÷ 1" DIN DN 25÷50/clamp 1" ÷ 2"	G 1" ÷ 1½" / 1" NPT clamp 1" ÷ 2"	-
Process connection material	PVC	PVC / SS 304 L / SS 316	SS 316 / PVC / PTFE	-
Atex	no	no	no	no
Protection	IP66	IP66	IP66	IP40
Power supply	no	no	no	24 | 115 | 230Vac

Tuning Fork | level control

A tuning fork, also known as a vibrating fork, is a mechanical probe consisting of two piezoelectric prongs that vibrate at the same frequency. When the fork comes into contact with the material, the vibration frequency changes, and this variation is detected to determine the material level.
The vibrating fork level switch is suitable for liquids and solids, including powders or granulates. The measurement is not affected by the electrical or conductive properties of the material. It is not suitable for materials with high viscosity or high density, as the accumulation of material on the fork could compromise measurement accuracy.

	RSL100 tuning fork for liquids	RSL200 tuning fork for solids
Applications	liquids	granulates / powders
Wetted material	SS 316	SS 316
Max product temperature	150°C	150°C
Max pressure	40 bar	25 bar
Max product grain size	-	12 mm
Max product viscosity	5000 cst max at 25°C	-
Probe length (STD version)	63 mm	202 mm
Max rigid probe length	3 m	3 m
Process connection	G 1”/ G 3/4”/ G 1/2” /DIN 2999	G 1½” / AISI 316
Atex	-	yes
Protection	IP66	IP67
Power supply	10 ÷ 30 Vdc	85÷230Vac / 24Vdc/Vac - 36Vac

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Electromagnetic | flow measurement

Electromagnetic induction flow meters, commonly known as magmeters, are transmitters used to measure the volumetric flow rate of conductive liquids. The flow meter consists of a sensor tube and an electronic converter.

The operating principle of electromagnetic flow meters is based on the use of a magnetic field to measure the flow of a conductive fluid (for example, water) inside a pipe.

Electromagnetic flow transmitters are widely used to measure the flow of conductive liquids across various industrial sectors and applications, including chemical industries, power plants, and water treatment facilities. They are also employed in drinking water distribution networks to monitor flow and ensure efficient water resource management.

	RPmag standard sensor	RKmag “0” DN sensor	RSmag food-grade sensor
Pipe size range	DN10 ÷ DN2000	DN15 ÷ DN800	DN10 ÷ DN200
Measuring range	0,1 ÷ 110000 m^3/h	0,3 ÷ 9048 m^3/h	0,1 ÷ 1100 m^3/h
Sensor	SS 321		SS 304
Lining	PTFE DN10 ÷ 500 neoprene DN65 ÷ 2000	PFA DN15 ÷ 40 neoprene DN50 ÷ 800	PFA
Process connection	DIN flange (UNI 1092-1); ANSI flange	DIN flange (UNI 1092-1)	DIN 11851; CLAMP DIN 32676
Electrodes	Hastelloy C (std.); SS 316L; titanium; tantalum; platinum	Hastelloy C (std.); SS 316L	SS 316L (std.); Hastelloy C; titanium; tantalum
Accuracy	±0,5% / ±0,2%		
Analog output	4÷20 mA; max. load 750 Ohm		
Analog input	No. 2, configurable 4–20 mA		
Communication protocol	MODBUS / Bluetooth		
Pulse output	open collector 24 VDC pull-up or galvanically isolated open collector		
Alarm output	No. 2 relays, 3A 230 VAC N.O.		
Datalogger	USB Pen Drive		
Display	Removable module VL701 with O-LED display		
Power supply	85÷265Vac; 11÷14Vdc; 20÷30Vdc/Vac		

They are particularly useful for measuring the flow of corrosive fluids or fluids containing solid particles, as they have no moving mechanical parts in contact with the product being measured. This minimizes wear and reduces the effects of scaling. They can cover a wide range of flow rates and pipe sizes, ensuring accurate and stable measurements over time. Electromagnetic flow meters feature a design that allows the fluid to flow unobstructed, minimizing pressure losses in the system. This means that the flow rate is not significantly affected by the presence of the meter itself. They offer excellent long-term stability and require minimal maintenance, while also being capable of measuring flow in both positive and negative directions, providing greater flexibility across applications. The different models of electromagnetic flow meters produced and offered by SGM-Lektra are designed to meet a wide variety of application requirements, ensuring precision and reliability.

	RCmag heavy-duty fluids	RBmag std. sens. | battery	RBKmag "0" DN sens. | battery	MiniMag FLE20 reduced DN piping
Pipe size range	DN10 ÷ DN2000	DN10 ÷ DN800	DN15 ÷ DN800	DN3÷25
Measuring range	<0,1 ÷ >110000 m3/h	0,1 ÷ 18000 m^3/h	0,3 ÷ 9048 m^3/h	0,1 ÷ 250 l /min
Sensor	SS 321			ABS
Lining	PTFE DN10 ÷ 500 neoprene DN65 ÷ 2000	PFA DN15 ÷ 40 neoprene DN50 ÷ 800	PFA DN15 ÷ 40 neoprene DN50 ÷ 800	POM; PVDF
Process connection	DIN flange (UNI 1092-1); ANSI flange	DIN flange (UNI 1092-1)	DIN flange (UNI 1092-1)	Threaded G 3/8" ÷ G 1 ¼"
Electrodes	Hastelloy C (std.); SS 316L; titanium; tantalum; platinum	Hastelloy C (std.); SS 316L; titanium; tantalum; platinum	Hastelloy C (std.); SS 316L	SS 316L; Hastelloy C
Accuracy	±0,5%			±0.7 % V.M. ±0.3 % FS
Analog output	4÷20 mA; load 750 ohm	4÷20 mA passive		4÷20mA
Analog input	-			
Communication protocol	MODBUS			-
Pulse output	open collector	open collector passive		open collector
Alarm output	open collector	-		
Datalogger	-			
Display	Display LCD			-
Power supply	85÷250Vac; 11÷13Vdc; 20÷36Vdc/Vac	battery-powered, 6-year autonomy; 12–24 VDC; external		12÷24Vdc (±10 %)

Ultrasonic Transit-Time | flow measurement

Ultrasonic transit-time flow meters, also known as clamp-on flow meters, are instruments used to measure the velocity of a liquid inside a pipe or conduit. The operating principle is based on measuring the time it takes for an ultrasonic signal to travel a certain distance through a moving liquid.
Specifically, a transducer positioned externally on the pipe generates an ultrasonic pulse that travels through the fluid toward a second transducer, located at a known distance from the transmitter. The flow meter records the time taken by the ultrasonic pulse to travel from the transmitter to the receiver.
Knowing the distance between the transducers and the transit time, the instrument calculates the average velocity of the fluid in the pipe using a defined formula. Once the fluid velocity is determined, the flow meter can display and transmit the flow rate of the liquid within the pipeline.

	SGM-101F fixed installation	Mini Clamp fixed installation
Pipe diameter range	DN20 ÷ DN4000	DN15÷65
Pipe material	carbon steel / ss / fiberglass / cast iron / copper / PE / PVC / aluminum	carbon steel / ss / fiberglass / cast iron / copper / PE / PVC
Fluid conductivity	not influential	
Sensor material	Nylon; Polysulfone	
Electronic housing material	epoxy-painted aluminum	
Process temperature	-40 ÷ 90° C / -40 ÷ 160° C	-10+60
Accuracy	±1% ±0.5% with SGM Lektra calibration	±2% ±1% with SGM Lektra calibration
Repeatability	±0,2%	±0,3%
Analog output	4÷20 mA; max load 750 ohm	4-20mA
Communication port	modbus	
Pulse output	passive open collector / relay	
Power supply	24-115-230Vac / 10 ÷ 30 Vdc	10÷24Vdc
Data logger	SD card	-
Heat calculator	yes	

Ultrasonic transit-time flow meters are used in industrial applications where it is important to measure the flow of liquids within processing systems, water distribution and treatment systems, water network monitoring, and in the food and beverage industry.
Their installation does not require interruption of the flow or cutting of the pipe, making them non-invasive and leak-free. They can provide accurate measurements across a wide range of flow rates, from low to high, ensuring reliable monitoring.
They require minimal maintenance, as they have no moving parts subject to wear. However, transit-time ultrasonic flow meters can be more expensive than other flow measurement technologies. The accuracy of their measurements depends on proper installation and can be affected by fluid characteristics such as the presence of air bubbles or particulates.
It is therefore important to carefully evaluate the application specifications and compare them with the characteristics of the flow meters to ensure the selection of the most suitable option.

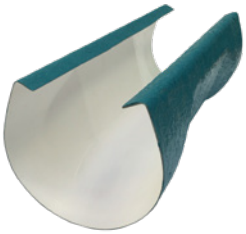
	SGM-101H **battery powered**
Pipe diameter range	DN25 ÷ DN1200
Pipe material	carbon steel / ss / fiberglass / cast iron / copper / PE / PVC / aluminum
Fluid conductivity	not influential
Sensor material	aluminum / PP
Electronic housing material	aluminum
Process temperature	-40 ÷ 80° C
Accuracy	±1%
Repeatability	±0,2%
Analog output	4÷20mA, max 750ohm
Communication port	MODBUS RTU
Pulse output	no
Power supply	battery-powered, 6-hour autonomy
Data logger	SD card
Heat calculator	-

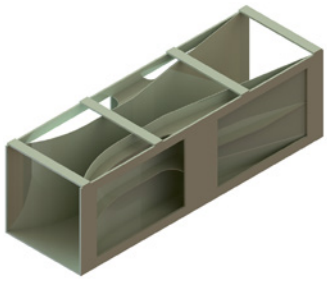
Ultrasonic Open Channel | flow measurement

The hydraulic jump method is a common technique for measuring flow rate in open channels, such as rivers, drainage channels, or partially filled pipes.
This method is based on the principle that when a flow passes through a hydraulic jump, the upstream water level measured before the constriction is directly correlated to the flow rate.
Flow measurement in open channels using the hydraulic jump method is achieved by installing, inside a channel or partially filled pipe, a hydraulic structure, a level sensor (ultrasonic or radar, non-contact with the liquid), and a control unit.
The control unit uses information about the channel geometry, the characteristics of the hydraulic structure, and specific calibration curves to convert the measured level into an instantaneous flow rate.

	FLOWMETER compact flow transmitter	**CA400** complete system
Calibration and configuration	4 buttons; Modbus RTU; Bluetooth	5 buttons
Application	for each STD or custom weir/channel	for each STD or custom weir/channel
Mechanical protection	IP67	IP66 VLW90M IP67|68 PTU50 / 51
Blocking distance	25 cm	PTU50 5 cm / PTU51 30 cm
Data logger	No	via pen drive USB
Housing material	PC/AL	ABS
Sensor material	PP	PP
Process connection	G2”	G1”
Process connection	-20 ÷ +60 °C	-20 ÷ +60 °C
Accuracy	0.2% of the measured distance, not better than ±3 mm	0.2% of the measured distance, not better than ±3 mm (PTU50 ±1 mm)
Display	LCD	Backlit LCD TFT 3.5” 256K color
Analog output	4÷20 mA; max. load 750 Ohm	2x 4÷20 mA; max. load 750 Ohm
Communication port	MODBUS RTU; Bluetooth	MODBUS RTU
Pulse output	relays	open collector / relays
Power supply	12Vdc; 20÷30Vdc	85÷265 Vac; 20÷30Vdc/Vac
Power consumption	1,5 W	<6 W

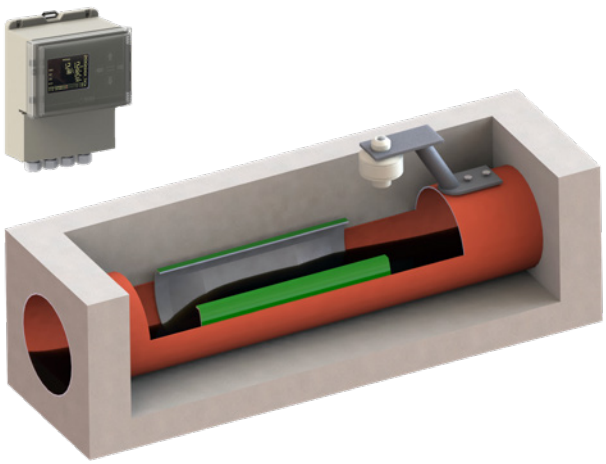
This measurement method can be used in a wide range of applications, such as water network management, industrial process monitoring, sewage systems, or water treatment plants.
With accurate calibration, the selection of a suitable hydraulic structure, and regular maintenance, it is possible to achieve highly precise measurement results.
The hydraulic jump method provides a non-invasive and relatively accurate option for measuring flow in open channels or non-pressurized pipes. However, it is essential to carefully consider site conditions, system design, and calibration to ensure reliable and accurate results.

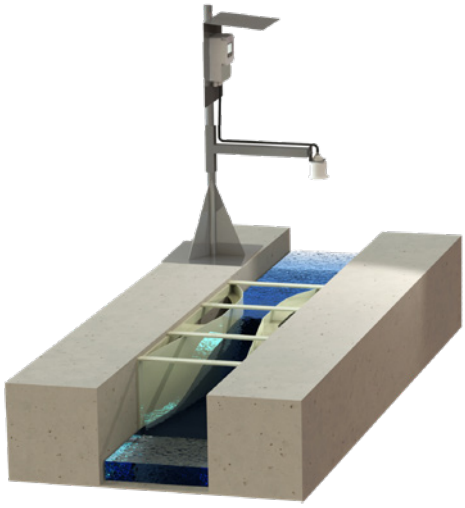




	PB - Palmer Bowlus for pipes	**BS** for open channel
Material	Fiberglass	PP
Pipe/channel size	DN100 ÷ 800	150 ÷ 1200 mm
Min/max flow rate	0,4 ÷ 1800 m^3/h	1 ÷ > 7700 m^3/h

Application examples – Flow measurement in pipes and open channels





Analytical

Water analysis is essential to ensure the safety, quality, and sustainability of water resources, both for human consumption and industrial use. Thanks to technological advancements, digital sensors have become a reliable and effective solution for measuring key parameters such as pH, conductivity, turbidity, suspended solids, dissolved oxygen, and redox potential. These instruments are particularly used in water treatment plants and represent a major step forward in precision and reliability, opening new opportunities across various fields.

Digital sensors offer more accurate measurements than traditional analog instruments. Their advanced technology makes them less susceptible to environmental interference and temperature variations, providing more stable and reliable data even under challenging water conditions. Moreover, the measurement results are displayed directly on digital control units, simplifying data reading, interpretation, and management.

Depending on the parameters to be measured, SGM-Lektra offers the appropriate solutions to meet plant and monitoring requirements effectively.

	104C pH	114C conductivity	114CH high conductivity	164CH high turbidity
Materials	Electrode body in glass and PPS O-rings in Viton® Electrode diaphragm in Teflon®	Probe body in PVC ¾ graphite electrodes	Electrode body in Epoxy and PPS O-rings in Viton®	Probe body in PVC Optics in special glass with oleophobic coating O-rings in Silicone and NBR
Measuring method	Gel electrolyte	Conductive, two-electrode	Conductive, 4-electrode graphite	90° light scattering
Process connection	3/4” NPT on both sides	1” GAS BSP	3/4” NPT	1” GAS
Measuring range	0÷14pH	0,00÷20000 µS	1 µS/cm ÷ 200mS/cm (K=0.55 nominal)	0÷1000NTU
Temperature probe	NTC 30K	With internal NTC sensor	With internal NTC sensor	-
Operating temperature	0÷ +100°C	0÷50 °C	-5÷100 °C	0÷50 °C
Mechanical protection	IP68	IP68	IP68	IP68
Protocol	MODBUS RTU	MODBUS RTU	MODBUS RTU	MODBUS RTU
Standard cable length	10m	10m	10m	10m
Power supply	24Vdc	12÷24Vdc	12÷24Vdc	12÷24Vdc

	MCA800 control unit
Maximum number of sensors	4
Housing material	ABS
Mechanical installation	Wall, pole, or DIN rail mounting
Protection rating	IP66
Keypad	5 buttons
Display	Color LCD
Power supply	85÷265 Vac; 20÷30Vdc/Vac
Analog output	No. 2 configurable, isolated 4–20 mA outputs
Relay outputs	NO. 5 CONFIGURABLE RELAYS (5A 250 VAC)
Digital outputs	No. 2 open collector outputs (max. 24 VDC 50 mA)
Digital communication	MODBUS RTU
Datalogger	via Pen Drive USB; max.32GB (FAT32)

	164CL low turbidity	164CU suspended solids	324C dissolved oxygen	604C redox
Materials	Probe body in PVC Optics in special glass with oleophobic coating O-rings in Viton and Silicone	Body in AISI 316 (optional in PVC) Windows in epoxy resin O-rings in Viton	Probe body in AISI 316 (optional PVC body) Special optical glass O-rings in NBR and Silicone	Electrode body in glass and PPS O-rings in Viton® Electrode diaphragm in Teflon®
Measuring method	Scattering a 90° della luce	Light absorption	Luminescence optics	Gel electrolyte
Process connection	1” GAS	1” GAS	3/4” BSP	3/4” NPT On both sides
Measuring range	0÷10NTU 0÷100NTU	0-30 gr/l	0,00÷20,00 mg/L	-1500mV ÷ +1500mV
Temperature probe	-	//	With internal NTC sensor	NTC 30K
Operating temperature	0÷50 °C	0÷50 °C	0÷50 °C	0÷ +100°C
Mechanical protection	IP68	IP68	IP68	IP68
Protocol	MODBUS RTU	MODBUS RTU	MODBUS RTU	MODBUS RTU
Standard cable length	10m	10m	10m	10m
Power supply	12÷24Vdc	12÷24Vdc	12÷24Vdc	24Vdc

Pressure | pressure measurement

Pressure measurement is a key aspect in many industrial sectors and technological applications. The ability to measure the pressure of liquids and gases accurately and reliably is essential for process monitoring, safety, and operational control.

In the industrial context, pressure measurement is used in a wide range of fields, including the chemical industry, water management systems, industrial automation, and the food and beverage industry. In both production processes and daily operations, pressure measurement plays a crucial role in ensuring efficiency and product quality.

SGM-Lektra offers a range of absolute, gauge, and differential pressure transmitters, ensuring quality, precision, ease of installation, and integration capability with automation and control systems.

	PIC20 fixed range	KPT fixed range	CPT fixed range	SPT variable range	SDT differential
Measuring range	-1 ÷ 400 bar	-1 ÷ 400 bar	50 mbar ÷ 40 bar	6 mbar ÷ 600 bar	1 mbar ÷ 20 bar
Contact fluid temperature	-40 ÷ +125°C	-30 ÷ +120°C	-40 ÷ +85°C	-40 ÷ +85°C	-40 ÷ +85°C
Wetted materials	ceramic / ss 304 / Aisi 316L	ss 316L	ceramic / ss 316L	ss 316L / Hastelloy C	s 316L / Hastelloy C / Tantalum
Accuracy	± 0,3%	± 0,25%	± 0,2%	± 0,075%	± 0,075%
Power supply	11 ÷ 30 Vdc	12 ÷ 42 Vdc	12 ÷ 30 Vdc	12 ÷ 42 Vdc	12 ÷ 42 Vdc
Process connections	G ½" ; G ¾" ; G ¼"	Male or female threaded, NPT or sanitary Clamp, vacuum, M20 x1.5	Male threaded G1"; G1 1/2"	Male or female threaded, NPT or Gas, vacuum	¼" NPT
Analog output	4 ÷ 20 mA	4 ÷ 20 mA	4 ÷ 20 mA	4 ÷ 20 mA	4 ÷ 20 mA
Digital communication	no	no	Hart	Hart	Hart
Display	yes (opt.)	yes (opt.)	yes (opt.)	yes (opt.)	yes (opt.)
Certifications	no	no	no	ATEX	ATEX
Protection	IP65; IP67; IP69K	IP65	IP65	IP67	IP67

Display, Totalizers, and Data Transmission

	VLW90M	VLW60T	VLW602
Measuring functions	Open-channel flow; Level; Differential level; Volume; Lift pump rotation control; Filling/emptying pump control	Level	Level/flow (depending on the connected sensor)
Max number of MODBUS RTU SGM LEKTRA sensors	8	5	1
Housing material	ABS	ABS	Epoxy-painted aluminum
Number of analog inputs (4–20 mA)	2	-	-
Number of analog outputs	2	-	-
Number of digital outputs	n.2 open collector (max. 24Vdc 50mA)	-	-
Number of relay outputs	5	4 (opz.)	-
Wall-mount version	yes	yes	yes
Wall-mount protection	IP66	IP66	IP66
Panel-mount version	No	yes	No
Panel-mount protection	-	IP65 (frontal)	-
Keypad	5 button	Touch screen	4 button
Display	Color LCD matrix 320x240, backlit	4.3” TFT LCD touch, 480 x 272	128x64 matrix LCD, backlit
Power supply	-20° ÷ +60°C	0° ÷ +50°C	-25° ÷ +70°C
Alimentazione	85÷265Vac; 20÷30Vdc	24Vdc; 85÷265Vac	85÷265Vac; 10÷30Vdc
Digital communication	MODBUS RTU	-	MODBUS RTU
Datalogger	yes (opt.)	-	-

Monitoring Systems for Stored Cereals

Silos or warehouses used for storing cereals, flour, or rice must maintain a cool temperature and low humidity inside to preserve product quality, prevent pest infestations, mold growth, and the risk of fires caused by fermentation.
Therefore, temperature monitoring and visualization are of fundamental importance.

SGM-Lektra, a national leader for over 40 years, manufactures the Agritherm System, a complete range of systems for monitoring temperature, level, and humidity inside silos or warehouses dedicated to the storage of cereals and grains.

The Agritherm range consists of control and display units capable of managing data collected from:

- TT multipoint digital probes for temperature measurement,
- RPL58 radar probes for product level visualization, and
- TU humidity probes.

The display and control units are available in various versions, suitable for different plant complexities and customer requirements. The range spans from small manual display units to advanced control systems based on personal computers or fully integrated management systems for the entire facility.

	TT temperature	TM temperature
Cable material	ss 304	
Temp. measur. range	-30 ÷ +125°C	
Process connection	½" GM / flangia PN6 DN40 gancio per sottotetto	
Protection	IP66	IP67
Measuring points	up to 12	up to 50
ATEX	yes	

	MUX for TT probes	MUXM for TM probes
Certification	ATEX II 2 (1) D IP66 T125°C	ATEX self-certification Zone 22
Protection	IP66	IP66
Max number of probes	8 TT probes	32 TM probes
Housing material	aluminum	aluminum
Display	display 2x8 digits	display O-LED
Communication	RS485	MODBUS RTU

temperature, level & humidity measurement

	AGRITHERMT5 display unit	AGRITHERMT60 monitoring unit	AGRITHERM50 monitoring unit
Visualization and monitoring	temperature	temperature | level | humidity	temperature
Display	touch screen 4,3”	touch screen 7” (T60S) touch screen 10” (T60P)	monitor PC
Relays	modular	modular	no. 5 on PC
Installation	panel mount | in IP66 enclosure	panel mount	software PC
Requirements	-	-	PC Windows 7 / 8 / 10
Datalogger	-	via Pen Drive USB	yes
Remote access	-	Via App on smartphone, tablet, PC	-
Communication	-	MODBUS TCP/IP	-

	TU humidity
Sensor filter material	Sintered in AISI
Process connection	M25x1.5
Humidity meas. range	0÷100%rh
Temperature meas. range	-20÷80°C
Protection	IP66
ATEX	yes

	RPL58 level measure
Frequency	Radar 26 GHz K Band
Measuring range	70 m
Process connection	G 1½” / flange DN 50 ÷ 250
Process connection material	SS 316 / PP / PTFE
Protection	IP67
Atex	yes

	MLS1 level control
Attacco al processo	R 1 ½”
Uscite	relay SPDT
Velocità rotazione	1 revolution/min
Cuscinetto	teflon coated
Protezione	IP66
Atex	yes

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