

# WASYS

SYSTEM SOLUTION PARTNER



WASYS FLOW BROCHURE

## ELECTROMAGNETIC

For many years SGM LEKTRA has been active in the field of flow measurement. Electromagnetic flow meters can measure liquids with a minimum electrical conductivity. Electromagnetic flow meters may be employed in all industrial sectors for liquids flow measurement from DN10 to DN2000.

Depending on the type of application SGM LEKTRA has realized 3 types of product lines:

**RPmag; Pmag; RKmag; RPmagM:** industrial processes

**RSmag:** food and pharmaceutical

**RBmag:** battery operated version

All units offer characteristics such as:

Fully bi-directional measure - Extreme reliability - High precision - No moving parts - No pressure losses - Extended measuring range, 100:1 - Measure independent of pressure, temperature, density and viscosity of the liquid.



	RPmag	Pmag	RKmag	RPmagM
<b>Pipe diameter range:</b>	DN10 ÷ DN2000	DN10 ÷ DN1000	DN50 ÷ DN150	DN10 ÷ DN250
<b>Measurement field:</b>	0,1 ÷ 110000 m³/h	0,1 ÷ 28000 m³/h	3 ÷ 600 m³/h	0,1 ÷ 787,5 m³/h
<b>Sensor material:</b>	SS321	SS321	ABS	SS321
<b>Lining material:</b>	PTFE DN10 ÷ DN500 RUBBER DN65+DN2000	PTFE DN10 ÷ DN500 RUBBER DN65+DN1000	ABS	PTFE DN10 ÷ DN250 RUBBER DN65+DN250
<b>Housing material:</b>	Flange DIN (UNI 1092-1); Flange ANSI	Flange DIN (UNI 1092-1); Flange ANSI	Flange DIN (UNI 1092-1)	Flange DIN (UNI 1092-1); Flange ANSI
<b>Electrodes material:</b>	aluminum	aluminum	aluminum	aluminum
<b>Process temperature, remote version:</b>	SS316L; Hastelloy C; titanium; tantalum; platinum	SS316L; Hastelloy C; titanium; tantalum; platinum	SS316L; Hastelloy C; titanium; tantalum	SS316L; Hastelloy C; titanium; tantalum; platinum
<b>Process temperature, compact version:</b>	RUBBER -40 ÷ +80°C; PTFE -40 ÷ +150°C	RUBBER -40 ÷ +80°C; PTFE -40 ÷ +150°C	-20 ÷ +120°C	RUBBER -40 ÷ +80°C; PTFE -40 ÷ +150°C
<b>Accuracy:</b>	RUBBER -40 ÷ +80°C; PTFE -40 ÷ +100°C	RUBBER -40 ÷ +80°C; PTFE -40 ÷ +100°C	-20 ÷ +75°C	RUBBER -40 ÷ +80°C; PTFE -40 ÷ +100°C
<b>Repeatability:</b>	±0,5% / ±0,2%	±0,5% / ±0,2%	±0,5% / ±0,2%	Class II ( MID certificate )
<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; max. load 750 Ohm
<b>Analog input:</b>	n° 2, 4÷20 mA configurable	-	n° 2, 4÷20 mA configurable	n° 2, 4÷20 mA configurable
<b>Protocollo di comunicazione:</b>	HART / MODBUS / BLUETOOTH	HART / MODBUS	HART / 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 or galvanically isolated
<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.
<b>Datalogger</b>	USB Pen Drive	-	USB Pen Drive	-
<b>Display:</b>	extractable module VL701 with O-LED display	LCD display	extractable module VL701 with O-LED display	extractable module VL701 with O-LED display
<b>Power supply:</b>	85÷265 Vac; 12 Vdc; 24 Vdc; 24Vac	85÷265 Vac; 12 Vdc; 24 Vdc	85÷265 Vac; 12 Vdc; 24 Vdc; 24Vac	85÷265 Vac; 12 Vdc; 24 Vdc; 24Vac

With this measurement technique it is possible to reach a standard precision of 0.5% accuracy referred to the measured value with the possibility of a 0.2% accuracy.

The calibration of the unit is carried out individually by an internationally certified rig according to the European directives.

The certificate of calibration is an integral part of the instrument supply and has international validity.

The wet calibration rig has an accuracy better than 99.97%.

The calibration rig accuracy is certified and monitored by NIM (National Institute of Metrology) metric institute.

The NIM institute is third party, internationally recognized by BIPM (Bureau International des Poids et Mesures).

The calibration rig complies with the requirements NTC ISO IEC 17025 and the calibration procedures are carried out according to the European EN-45001 Code.



	RSmag		RBmag
Pipe diameter range:	DN10 ÷ DN150		DN10 ÷ DN1000
Measurement field:	0,1 ÷ 600 m³/h		0,1 ÷ 28000 m³/h
Sensor material:	SS304		SS321
Lining material:	PTFE / PFA		PTFE DN10 ÷ DN500 RUBBER DN65 ÷ DN1000
Housing material:	DIN 11851; CLAMP DIN 32676		Flange DIN (UNI 1092-1); Flange ANSI
Electrodes material:	aluminum		aluminum
Process temperature, remote version:	SS316L; Hastelloy C; titanium; tantalum		SS316L; Hastelloy C; titanium; tantalum; platinum
Process temperature, compact version:	PFA -40 ÷ +180°C; PTFE -40 ÷ +150°C		RUBBER -40 ÷ +80°C; PTFE -40 ÷ +150°C
Accuracy:	PFA -40 ÷ +100°C; PTFE -40 ÷ +100°C		RUBBER -40 ÷ +80°C; PTFE -40 ÷ +100°C
Repeatability:	±0,5% / ±0,2%		±0,5% / ±0,2%
Analog output:	4÷20 mA; max. load 750 Ohm		-
Analog input:	n° 2, 4÷20 mA configurable		-
Protocollo di comunicazione:	HART / MODBUS / BLUETOOTH		MODBUS
Pulse output:	open collector 24Vdc pull-up or galvanically isolated		open collector passive
Alarm output:	n° 2, relays, 3A 230Vac N.O		-
Datalogger	USB Pen Drive		-
Display:	extractable module VL701 with O-LED display		LCD display
Power supply:	85÷265 Vac; 12 Vdc; 24 Vdc; 24Vac		battery

## RPMAG

- For conductive liquids ( $>5\mu\text{S}/\text{cm}$ ), even with a content of suspended solids
- Dn 10 ÷ 2000 mm
- $\pm 0.2\%$  ;  $\pm 0.5\%$  accuracy
- RUBBER / PTFE lining
- 85 ÷ 265 Vac o 12; 24 Vdc/Vac power supply
- Datalogger via pendrive USB
- Configuration and displaying via VL701with O-LED display



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, Hart 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 are stored into a TXT file which is compatible with Excel or other equivalent analysis software packages

### TECHNICAL FEATURES

#### Flow rate range

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

#### 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, 24Vac/dc, 12Vdc.

#### Consumption

6W, max. 8W.

#### 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; Bluetooth App Android (opt.); Hart (opt.)

#### Data Logger

Internal data logger to USB pen drive for flow measurements and analog inputs storing; the measurement storage interval can be set from 15 to 3600 seconds

#### 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.

#### Input signals

RPmag has 2 active analog inputs at 24Vdc for 2-wire transmitters connection (eg. Temperature or pressure) and 1 digital input for an external contact connection for the integrated batch function restart and for partial totalizer management.

#### Reverse Flow

Allows measure and totalization of reverse flow.

#### Output Testing

Relays output: Transmitter can switch relays at testing value.

Current Source: Transmitter can be commanded to supply a specified test current between 4.0 and 20.0 mA.

Frequency Source: Transmitter can be commanded to supply a specified test frequency between 1 and 10000 Hz.

#### 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

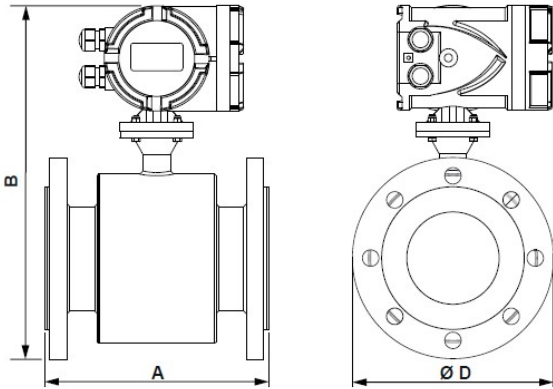
IP67

#### 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  
 Medium ambient temperature range: -20° + 75°C  
 IP67 electronic housing with anticondensation filter  
 2 alarm relays (min/max)

Version	
<b>E</b>	Remote - accuracy 0,2% (up to DN150) - standard cable length 5m
<b>F</b>	Remote - accuracy 0,5% - standard cable length 5m
<b>W</b>	Compact - accuracy 0,2% (up to DN150) - max temperature of the fluid 100°C
<b>Y</b>	Compact - accuracy 0,5% - max temperature of the fluid 100°C
<b>B</b>	Remote - acc. 0,2% (up to DN150) - Data logger - n.2 4+20mA input - std cable length 5m (
<b>C</b>	Remote - acc. 0,5% - Data logger - n.2 4+20mA input - std cable length 5m
<b>L</b>	Compact - acc. 0,2% (up to DN150) - max temperature of the fluid 100°C - Data logger - n.2 4+20mA input
<b>N</b>	Compact - acc. 0,5% - max temperature of the fluid 100°C - Data logger - n.2 4+20mA input

DN flange / Max. pressure / Lining ( temperature range of the fluid)	
0010B2	DN10 / 4.0MPa / PTFE (-40° + +150°C); range 0,14 ÷ 2,9m3/h; UNI 1092-1 standard
0010E2	DN10 / 1.6MPa / PTFE (-40° + +150°C); range 0,14 ÷ 2,9m3/h; UNI 1092-1 standard
0015B2	DN15 / 4.0MPa / PTFE (-40° + +150°C); range 0,3 ÷ 6m3/h; UNI 1092-1 standard
0015E2	DN15 / 1.6MPa / PTFE (-40° + +150°C); range 0,3 ÷ 6m3/h; UNI 1092-1 standard
0020B2	DN20 / 4.0MPa / PTFE (-40° + +150°C); range 0,5 ÷ 12m3/h; UNI 1092-1 standard
0020E2	DN20 / 1.6MPa / PTFE (-40° + +150°C); range 0,5 ÷ 12m3/h; UNI 1092-1 standard
0025B2	DN25 / 4.0MPa / PTFE (-40° + +150°C); range 0,6 ÷ 18m3/h; UNI 1092-1 standard
0025E2	DN25 / 1.6MPa / PTFE (-40° + +150°C); range 0,6 ÷ 18m3/h; UNI 1092-1 standard
0032B2	DN32 / 4.0MPa / PTFE (-40° + +150°C); range 1 ÷ 30m3/h; UNI 1092-1 standard
0032E2	DN32 / 1.6MPa / PTFE (-40° + +150°C); range 1 ÷ 30m3/h; UNI 1092-1 standard
0040B2	DN40 / 4.0MPa / PTFE (-40° + +150°C); range 1,8 ÷ 42m3/h; UNI 1092-1 standard
0040E2	DN40 / 1.6MPa / PTFE (-40° + +150°C); range 1,8 ÷ 42m3/h; UNI 1092-1 standard
0050B2	DN50 / 4.0MPa / PTFE (-40° + +150°C); range 3 ÷ 66m3/h; UNI 1092-1 standard
0050E2	DN50 / 1.6MPa / PTFE (-40° + +150°C); range 3 ÷ 66m3/h; UNI 1092-1 standard
0065B1	DN65 / 4.0MPa / Neoprene (-10° + +80°C); range 5,8 ÷ 120m3/h; UNI 1092-1 standard
0065B2	DN65 / 4.0MPa / PTFE (-40° + +150°C); range 5,8 ÷ 120m3/h; UNI 1092-1 standard
0065E1	DN65 / 1.6MPa / Neoprene (-10° + +80°C); range 5,8 ÷ 120m3/h; UNI 1092-1 standard
0065E2	DN65 / 1.6MPa / PTFE (-40° + +150°C); range 5,8 ÷ 120m3/h; UNI 1092-1 standard
0080B1	DN80 / 4.0MPa / Neoprene (-10° + +80°C); range 8,9 ÷ 180m3/h; UNI 1092-1 standard
0080B2	DN80 / 4.0MPa / PTFE (-40° + +150°C); range 8,9 ÷ 180m3/h; UNI 1092-1 standard
0080E1	DN80 / 1.6MPa / Neoprene (-10° + +80°C); range 8,9 ÷ 180m3/h; UNI 1092-1 standard
0080E2	DN80 / 1.6MPa / PTFE (-40° + +150°C); range 8,9 ÷ 180m3/h; UNI 1092-1 standard
0100B1	DN100 / 4.0MPa / Neoprene (-10° + +80°C); range 11 ÷ 282m3/h; UNI 1092-1 standard
0100B2	DN100 / 4.0MPa / PTFE (-40° + +150°C); range 11 ÷ 282m3/h; UNI 1092-1 standard
0100E1	DN100 / 1.6MPa / Neoprene (-10° + +80°C); range 11 ÷ 282m3/h; UNI 1092-1 standard
0100E2	DN100 / 1.6MPa / PTFE (-40° + +150°C); range 11 ÷ 282m3/h; UNI 1092-1 standard
0125B1	DN125 / 4.0MPa / Neoprene (-10° + +80°C); range 20 ÷ 450m3/h; UNI 1092-1 standard
0125B2	DN125 / 4.0MPa / PTFE (-40° + +150°C); range 20 ÷ 450m3/h; UNI 1092-1 standard
0125E1	DN125 / 1.6MPa / Neoprene (-10° + +80°C); range 20 ÷ 450m3/h; UNI 1092-1 standard
0125E2	DN125 / 1.6MPa / PTFE (-40° + +150°C); range 20 ÷ 450m3/h; UNI 1092-1 standard
0150B1	DN150 / 4.0MPa / Neoprene (-10° + +80°C); range 30 ÷ 600m3/h; UNI 1092-1 standard
0150B2	DN150 / 4.0MPa / PTFE (-40° + +150°C); range 30 ÷ 600m3/h; UNI 1092-1 standard
0150E1	DN150 / 1.6MPa / Neoprene (-10° + +80°C); range 30 ÷ 600m3/h; UNI 1092-1 standard
0150E2	DN150 / 1.6MPa / PTFE (-40° + +150°C); range 30 ÷ 600m3/h; UNI 1092-1 standard

0200C1	DN200 / 1.0MPa / Neoprene (-10° + +80°C); range 50 + 1100m3/h; UNI 1092-1 standard
0200C2	DN200 / 1.0MPa / PTFE (-40° + +150°C); range 50 + 1100m3/h; UNI 1092-1 standard
0200E1	DN200 / 1.6MPa / Neoprene (-10° + +80°C); range 50 + 1100m3/h; UNI 1092-1 standard
0200E2	DN200 / 1.6MPa / PTFE (-40° + +150°C); range 50 + 1100m3/h; UNI 1092-1 standard
0250C1	DN250 / 1.0MPa / Neoprene (-10° + +80°C); range 85 + 1700m3/h; UNI 1092-1 standard
0250C2	DN250 / 1.0MPa / PTFE (-40° + +150°C); range 85 + 1700m3/h; UNI 1092-1 standard
0250E1	DN250 / 1.6MPa / Neoprene (-10° + +80°C); range 85 + 1700m3/h; UNI 1092-1 standard
0250E2	DN250 / 1.6MPa / PTFE (-40° + +150°C); range 85 + 1700m3/h; UNI 1092-1 standard
0300C1	DN300 / 1.0MPa / Neoprene (-10° + +80°C); range 110 + 2400m3/h; UNI 1092-1 standard
0300C2	DN300 / 1.0MPa / PTFE (-40° + +150°C); range 110 + 2400m3/h; UNI 1092-1 standard
0300E1	DN300 / 1.6MPa / Neoprene (-10° + +80°C); range 110 + 2400m3/h; UNI 1092-1 standard
0300E2	DN300 / 1.6MPa / PTFE (-40° + +150°C); range 110 + 2400m3/h; UNI 1092-1 standard
0350C1	DN350 / 1.0MPa / Neoprene (-10° + +80°C); range 180 + 3300m3/h; UNI 1092-1 standard
0350C2	DN350 / 1.0MPa / PTFE (-40° + +150°C); range 180 + 3300m3/h; UNI 1092-1 standard
0350E1	DN350 / 1.6MPa / Neoprene (-10° + +80°C); range 180 + 3300m3/h; UNI 1092-1 standard
0350E2	DN350 / 1.6MPa / PTFE (-40° + +150°C); range 180 + 3300m3/h; UNI 1092-1 standard
0400C1	DN400 / 1.0MPa / Neoprene (-10° + +80°C); range 220 + 4200m3/h; UNI 1092-1 standard
0400C2	DN400 / 1.0MPa / PTFE (-40° + +150°C); range 220 + 4200m3/h; UNI 1092-1 standard
0400E1	DN400 / 1.6MPa / Neoprene (-10° + +80°C); range 220 + 4200m3/h; UNI 1092-1 standard
0400E2	DN400 / 1.6MPa / PTFE (-40° + +150°C); range 220 + 4200m3/h; UNI 1092-1 standard
0450C1	DN450 / 1.0MPa / Neoprene (-10° + +80°C); range 270+ 5400m3/h; UNI 1092-1 standard
0450C2	DN450 / 1.0MPa / PTFE (-40° + +150°C); range 270+ 5400m3/h; UNI 1092-1 standard
0450E1	DN450 / 1.6MPa / Neoprene (-10° + +80°C); range 270+ 5400m3/h; UNI 1092-1 standard
0450E2	DN450 / 1.6MPa / PTFE (-40° + +150°C); range 270+ 5400m3/h; UNI 1092-1 standard
0500C1	DN500 / 1.0MPa / Neoprene (-10° + +80°C); range 320 + 6600m3/h; UNI 1092-1 standard
0500C2	DN500 / 1.0MPa / PTFE (-40° + +150°C); range 320 + 6600m3/h; UNI 1092-1 standard
0500E1	DN500 / 1.6MPa / Neoprene (-10° + +80°C); range 320 + 6600m3/h; UNI 1092-1 standard
0500E2	DN500 / 1.6MPa / PTFE (-40° + +150°C); range 320 + 6600m3/h; UNI 1092-1 standard
0600C1	DN600 / 1.0MPa / Neoprene (-10° + +80°C); range 490 + 9600m3/h; UNI 1092-1 standard
0700C1	DN700 / 1.0MPa / Neoprene (-10° + +80°C); range 680 + 13500m3/h; UNI 1092-1 standard
0800C1	DN800 / 1.0MPa / Neoprene (-10° + +80°C); range 900 + 18000m3/h; UNI 1092-1 standard
0900C1	DN900 / 1.0MPa / Neoprene (-10° + +80°C); range 1200 + 22500m3/h; UNI 1092-1 standard
1000C1	DN1000 / 1.0MPa / Neoprene (-10° + +80°C); (-10° + +80°C); range 1450 + 28000m3/h; UNI 1092-1 standard

Process connection	
B	DIN (UNI 1092-1) flange
D	ANSI flange (price on request)
Z	Special

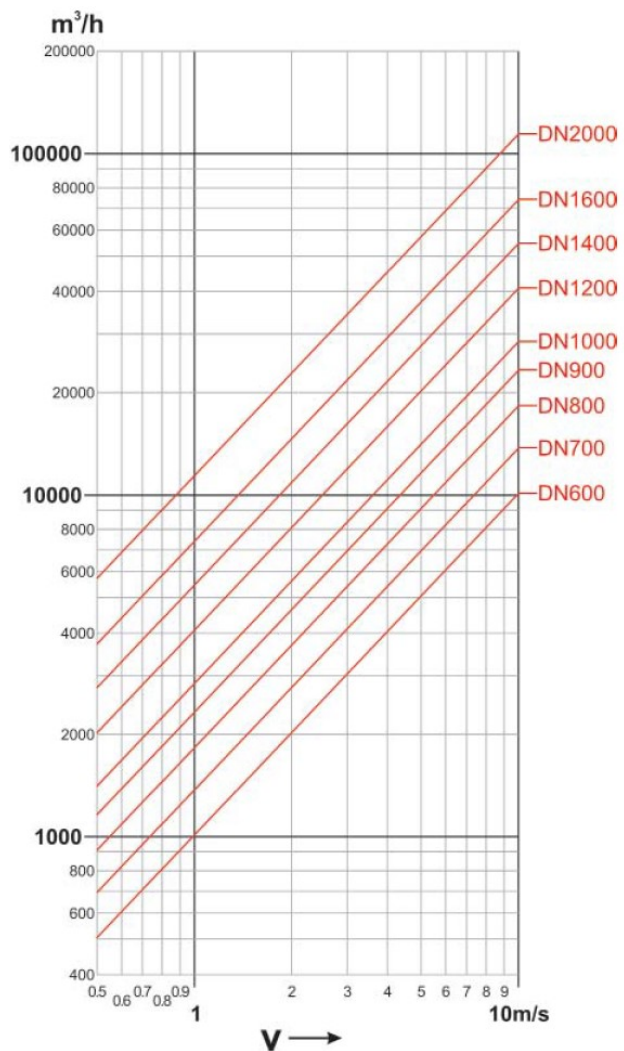
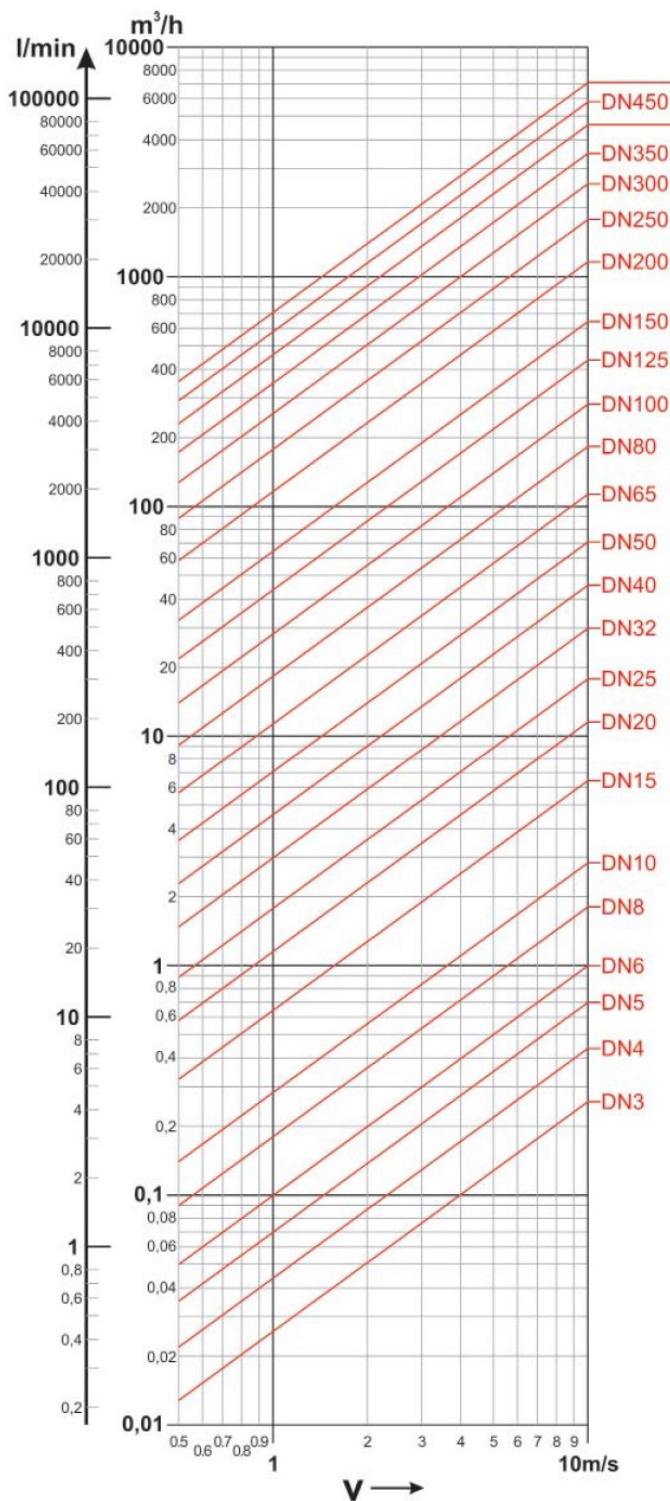
Electrodes material	
1	SS316L Stainless steel
3	Hastelloy C
4	Titanium
5	Tantalum
6	Platinum

Power supply	
A	85+265Vac
B	24Vdc
C	24Vac - only for versions B, C, L, N
D	12Vdc
Z	Special

Accessories	
0	None
1	316SS or Hastelloy C grounding rings for plastic pipe installation (price on request)
2	Protective rings against inner lining abrasion (price on request)
3	3rd electrode - price on request

Output	
A	4+20mA + pulse output (B/C/L/N versions standard with galvanic separation)
B	4+20mA with galvanic separation + pulse + MODBUS RTU + BLUETOOTH (for B/C/L/N version only)
C	4+20mA + pulse output + HART - only for E/F/W/Y versions
E	4+20mA + pulse + MODBUS RTU (B/C/L/N versions standard with galvanic separation)

Pipe protection degree	
1	IP67
2	IP68 (only for remote version)



## PMAG

- For conductive liquids ( $>5\mu\text{S}/\text{cm}$ ), even with a content of suspended solids
- Dn 10 ÷ 1000 mm
- $\pm 0.2\%$  ;  $\pm 0.5\%$  accuracy
- RUBBER / PTFE lining
- 85 ÷ 265 Vac o 12; 24 Vdc power supply



Pmag flowmeters are particularly suitable for all types of wastewater measurements. A various types of lining material are available to suit chemically aggressive liquids or with suspended solids. A salient feature of the soft rubber lining is the resistance to abrasion due to water with suspended solids.

### TECHNICAL FEATURES

#### Flow Rate Range

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

#### Sensor range

DN10 ÷ DN1000

#### Sensor material

SS321

#### Housing material

aluminium

#### Electrodes material

SS316L - Hastelloy C - Titanium - Tantalum - Platinum

#### Measure range

$<0,1\text{m}^3/\text{h} \div >28000\text{m}^3/\text{h}$

#### Accuracy

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

#### Repeatability

$\pm 0,1\%$

#### Fluid conductivity

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

#### Power supply

85÷265Vac, 24Vdc, 12Vdc.

#### Consumption

6W, max. 8W.

#### Ambient Temperature Limits

Remote version operating temperature:  
 RUBBER  $-10 \div +80^\circ\text{C}$ ; PTFE  $-40 \div +150^\circ\text{C}$   
 Compact version operating temperature:  
 RUBBER  $-10 \div +80^\circ\text{C}$ ; PTFE  $-40 \div +100^\circ\text{C}$   
 Storage temperature:  $-40\div 85^\circ\text{C}$

#### Communication protocol

modbus or Hart (opt.)

#### Output

4÷20mA: 0÷750 ohm load.

Frequency output: 0,1÷5000 Hz

Pulse output: 24Vdc pull up open collector or galvanically isolated open collector (opt.)

#### Reverse Flow

Allow measure reverse flow.

#### Output Testing

Current Source: Transmitter can be commanded to supply a specified test current between 4.0 and 20.0 mA.

Frequency Source: Transmitter can be commanded to supply a specified test frequency between 0.1 and 5000 Hz

#### Start-up Time

0.5 seconds.

#### Low Flow Cutoff

Adjustable between 0.0 and 9.9%Qmax. Below selected value, output is driven to the zero flow rate signal level.

#### Humidity Limits

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

#### Damping

Adjustable between 0.1 and 99 seconds.

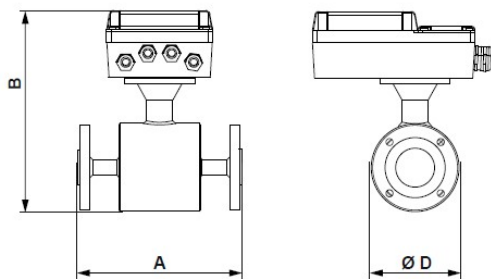
#### Compact version IP rating

IP66, converter provided with transparent protection cover

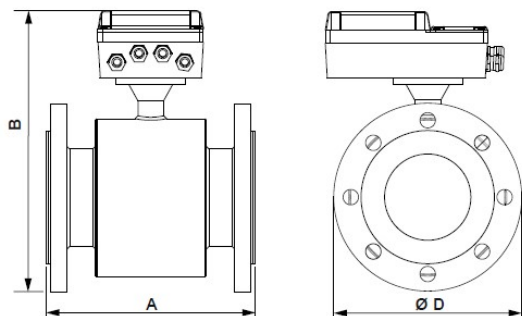
#### Remote version IP rating

sensor IP67, IP68 (optional) converter IP66 provided with transparent protection cover





DN (mm)	A (mm)	PN 16 - PN 40	
		B (mm)	ØD (mm)
10	200	235	90
15		235	95
20		240	105
25		240	115
32		251	140
40		270	150
50		280	165
65		298	185
80		315	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	347	235
125	250	-	-	420	250	372	270
150	300	-	-	460	285	405	300
200	350	457	340	457	340	-	-
250	450	507	395	512	405	-	-
300	500	557	445	557	460	-	-
350	550	607	505	615	520	-	-
400	600	667	565	675	580	-	-
450	600	717	615	730	640	-	-
500	600	767	670	787	715	-	-
600	600	867	780	-	-	-	-
700	700	867	895	-	-	-	-
800	800	1102	1015	-	-	-	-
900	900	1207	1115	-	-	-	-
1000	1000	1297	1230	-	-	-	-

Pmag

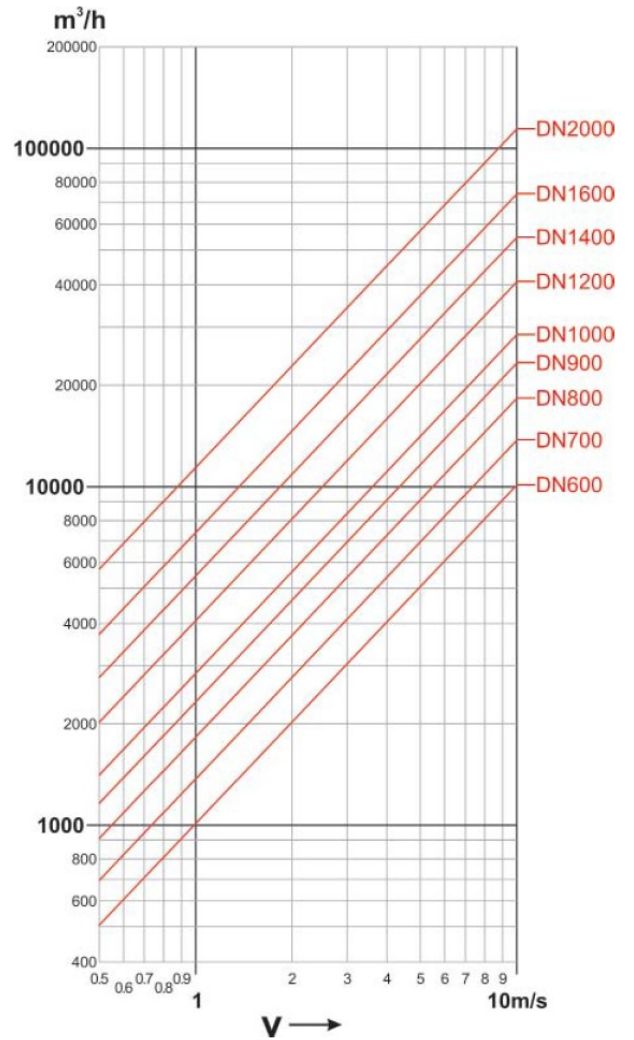
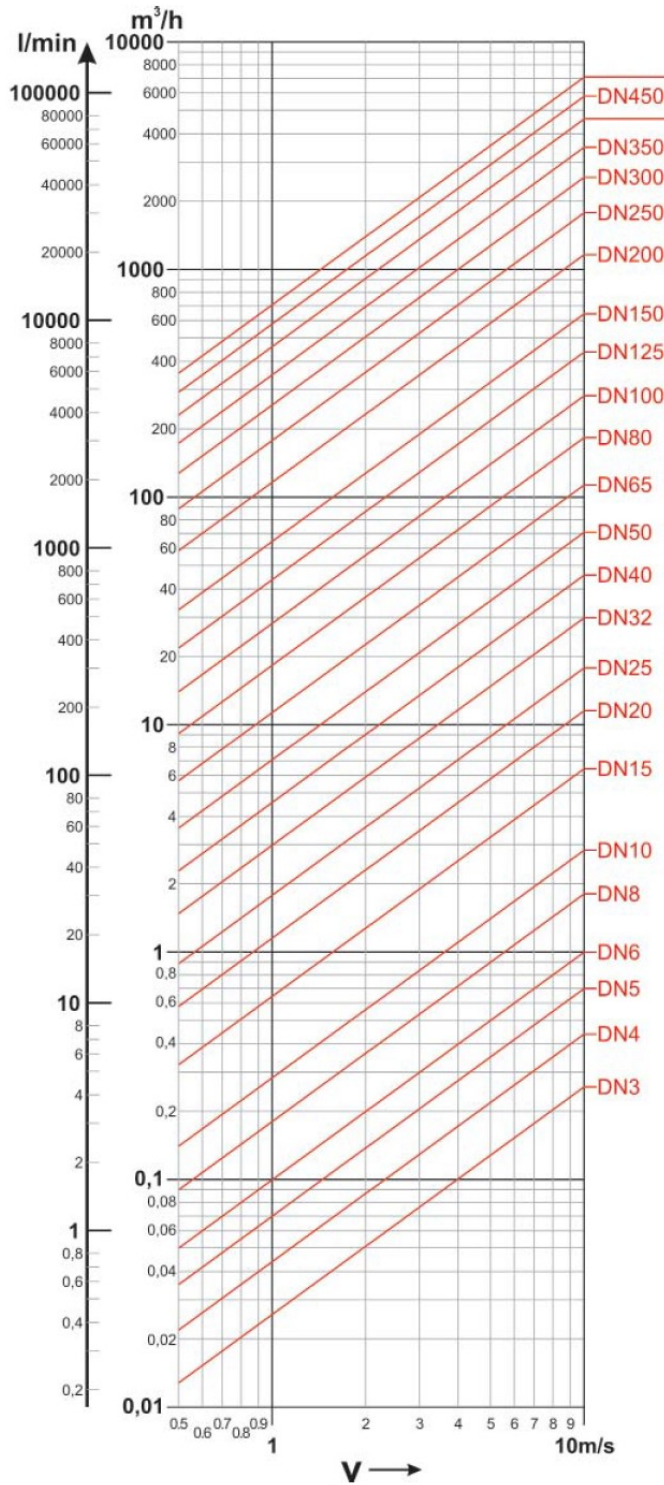
Electromagnetic flowmeter

For conductive fluids. With sensor pipe in SS321  
 Medium ambient temperature range: -20° + 75°C  
 Housing protection degree for electronic: IP66

Version	
<b>E</b>	Remote - accuracy 0,2% (up to DN150) - standard cable length 5m
<b>F</b>	Remote - accuracy 0,5% - standard cable length 5m
<b>W</b>	Compact - accuracy 0,2% (up to DN150) - max temperature of the fluid 100°C
<b>Y</b>	Compact - accuracy 0,5% - max temperature of the fluid 100°C

DN flange / Max. pressure / Lining ( temperature range of the fluid)	
0010B2	DN10 / 4.0MPa / PTFE (-40° + +150°C); range 0,14 + 2,9m3/h; UNI 1092-1 standard
0010E2	DN10 / 1.6MPa / PTFE (-40° + +150°C); range 0,14 + 2,9m3/h; UNI 1092-1 standard
0015B2	DN15 / 4.0MPa / PTFE (-40° + +150°C); range 0,3 + 6m3/h; UNI 1092-1 standard
0015E2	DN15 / 1.6MPa / PTFE (-40° + +150°C); range 0,3 + 6m3/h; UNI 1092-1 standard
0020B2	DN20 / 4.0MPa / PTFE (-40° + +150°C); range 0,5 + 12m3/h; UNI 1092-1 standard
0020E2	DN20 / 1.6MPa / PTFE (-40° + +150°C); range 0,5 + 12m3/h; UNI 1092-1 standard
0025B2	DN25 / 4.0MPa / PTFE (-40° + +150°C); range 0,6 + 18m3/h; UNI 1092-1 standard
0025E2	DN25 / 1.6MPa / PTFE (-40° + +150°C); range 0,6 + 18m3/h; UNI 1092-1 standard
0032B2	DN32 / 4.0MPa / PTFE (-40° + +150°C); range 1 + 30m3/h; UNI 1092-1 standard
0032E2	DN32 / 1.6MPa / PTFE (-40° + +150°C); range 1 + 30m3/h; UNI 1092-1 standard
0040B2	DN40 / 4.0MPa / PTFE (-40° + +150°C); range 1,8 + 42m3/h; UNI 1092-1 standard
0040E2	DN40 / 1.6MPa / PTFE (-40° + +150°C); range 1,8 + 42m3/h; UNI 1092-1 standard
0050B2	DN50 / 4.0MPa / PTFE (-40° + +150°C); range 3 + 66m3/h; UNI 1092-1 standard
0050E2	DN50 / 1.6MPa / PTFE (-40° + +150°C); range 3 + 66m3/h; UNI 1092-1 standard
0065B1	DN65 / 4.0MPa / Neoprene (-10° + +80°C); range 5,8 + 120m3/h; UNI 1092-1 standard
0065B2	DN65 / 4.0MPa / PTFE (-40° + +150°C); range 5,8 + 120m3/h; UNI 1092-1 standard
0065E1	DN65 / 1.6MPa / Neoprene (-10° + +80°C); range 5,8 + 120m3/h; UNI 1092-1 standard
0065E2	DN65 / 1.6MPa / PTFE (-40° + +150°C); range 5,8 + 120m3/h; UNI 1092-1 standard
0080B1	DN80 / 4.0MPa / Neoprene (-10° + +80°C); range 8,9 + 180m3/h; UNI 1092-1 standard
0080B2	DN80 / 4.0MPa / PTFE (-40° + +150°C); range 8,9 + 180m3/h; UNI 1092-1 standard
0080E1	DN80 / 1.6MPa / Neoprene (-10° + +80°C); range 8,9 + 180m3/h; UNI 1092-1 standard
0080E2	DN80 / 1.6MPa / PTFE (-40° + +150°C); range 8,9 + 180m3/h; UNI 1092-1 standard
0100B1	DN100 / 4.0MPa / Neoprene (-10° + +80°C); range 11 + 282m3/h; UNI 1092-1 standard
0100B2	DN100 / 4.0MPa / PTFE (-40° + +150°C); range 11 + 282m3/h; UNI 1092-1 standard
0100E1	DN100 / 1.6MPa / Neoprene (-10° + +80°C); range 11 + 282m3/h; UNI 1092-1 standard
0100E2	DN100 / 1.6MPa / PTFE (-40° + +150°C); range 11 + 282m3/h; UNI 1092-1 standard
0125B1	DN125 / 4.0MPa / Neoprene (-10° + +80°C); range 20 + 450m3/h; UNI 1092-1 standard
0125B2	DN125 / 4.0MPa / PTFE (-40° + +150°C); range 20 + 450m3/h; UNI 1092-1 standard
0125E1	DN125 / 1.6MPa / Neoprene (-10° + +80°C); range 20 + 450m3/h; UNI 1092-1 standard
0125E2	DN125 / 1.6MPa / PTFE (-40° + +150°C); range 20 + 450m3/h; UNI 1092-1 standard
0150B1	DN150 / 4.0MPa / Neoprene (-10° + +80°C); range 30 + 600m3/h; UNI 1092-1 standard
0150B2	DN150 / 4.0MPa / PTFE (-40° + +150°C); range 30 + 600m3/h; UNI 1092-1 standard
0150E1	DN150 / 1.6MPa / Neoprene (-10° + +80°C); range 30 + 600m3/h; UNI 1092-1 standard
0150E2	DN150 / 1.6MPa / PTFE (-40° + +150°C); range 30 + 600m3/h; UNI 1092-1 standard

0200C1	DN200 / 1.0MPa / Neoprene (-10° + +80°C); range 50 + 1100m3/h; UNI 1092-1 standard
0200C2	DN200 / 1.0MPa / PTFE (-40° + +150°C); range 50 + 1100m3/h; UNI 1092-1 standard
0200E1	DN200 / 1.6MPa / Neoprene (-10° + +80°C); range 50 + 1100m3/h; UNI 1092-1 standard
0200E2	DN200 / 1.6MPa / PTFE (-40° + +150°C); range 50 + 1100m3/h; UNI 1092-1 standard
0250C1	DN250 / 1.0MPa / Neoprene (-10° + +80°C); range 85 + 1700m3/h; UNI 1092-1 standard
0250C2	DN250 / 1.0MPa / PTFE (-40° + +150°C); range 85 + 1700m3/h; UNI 1092-1 standard
0250E1	DN250 / 1.6MPa / Neoprene (-10° + +80°C); range 85 + 1700m3/h; UNI 1092-1 standard
0250E2	DN250 / 1.6MPa / PTFE (-40° + +150°C); range 85 + 1700m3/h; UNI 1092-1 standard
0300C1	DN300 / 1.0MPa / Neoprene (-10° + +80°C); range 110 + 2400m3/h; UNI 1092-1 standard
0300C2	DN300 / 1.0MPa / PTFE (-40° + +150°C); range 110 + 2400m3/h; UNI 1092-1 standard
0300E1	DN300 / 1.6MPa / Neoprene (-10° + +80°C); range 110 + 2400m3/h; UNI 1092-1 standard
0300E2	DN300 / 1.6MPa / PTFE (-40° + +150°C); range 110 + 2400m3/h; UNI 1092-1 standard
0350C1	DN350 / 1.0MPa / Neoprene (-10° + +80°C); range 180 + 3300m3/h; UNI 1092-1 standard
0350C2	DN350 / 1.0MPa / PTFE (-40° + +150°C); range 180 + 3300m3/h; UNI 1092-1 standard
0350E1	DN350 / 1.6MPa / Neoprene (-10° + +80°C); range 180 + 3300m3/h; UNI 1092-1 standard
0350E2	DN350 / 1.6MPa / PTFE (-40° + +150°C); range 180 + 3300m3/h; UNI 1092-1 standard
0400C1	DN400 / 1.0MPa / Neoprene (-10° + +80°C); range 220 + 4200m3/h; UNI 1092-1 standard
0400C2	DN400 / 1.0MPa / PTFE (-40° + +150°C); range 220 + 4200m3/h; UNI 1092-1 standard
0400E1	DN400 / 1.6MPa / Neoprene (-10° + +80°C); range 220 + 4200m3/h; UNI 1092-1 standard
0400E2	DN400 / 1.6MPa / PTFE (-40° + +150°C); range 220 + 4200m3/h; UNI 1092-1 standard
0450C1	DN450 / 1.0MPa / Neoprene (-10° + +80°C); range 270+ 5400m3/h; UNI 1092-1 standard
0450C2	DN450 / 1.0MPa / PTFE (-40° + +150°C); range 270+ 5400m3/h; UNI 1092-1 standard
0450E1	DN450 / 1.6MPa / Neoprene (-10° + +80°C); range 270+ 5400m3/h; UNI 1092-1 standard
0450E2	DN450 / 1.6MPa / PTFE (-40° + +150°C); range 270+ 5400m3/h; UNI 1092-1 standard
0500C1	DN500 / 1.0MPa / Neoprene (-10° + +80°C); range 320 + 6600m3/h; UNI 1092-1 standard
0500C2	DN500 / 1.0MPa / PTFE (-40° + +150°C); range 320 + 6600m3/h; UNI 1092-1 standard
0500E1	DN500 / 1.6MPa / Neoprene (-10° + +80°C); range 320 + 6600m3/h; UNI 1092-1 standard
0500E2	DN500 / 1.6MPa / PTFE (-40° + +150°C); range 320 + 6600m3/h; UNI 1092-1 standard
0600C1	DN600 / 1.0MPa / Neoprene (-10° + +80°C); range 490 + 9600m3/h; UNI 1092-1 standard
0700C1	DN700 / 1.0MPa / Neoprene (-10° + +80°C); range 680 + 13500m3/h; UNI 1092-1 standard
0800C1	DN800 / 1.0MPa / Neoprene (-10° + +80°C); range 900 + 18000m3/h; UNI 1092-1 standard
0900C1	DN900 / 1.0MPa / Neoprene (-10° + +80°C); range 1200 + 22500m3/h; UNI 1092-1 standard
1000C1	DN1000 / 1.0MPa / Neoprene (-10° + +80°C); (-10° + +80°C); range 1450 + 28000m3/h; UNI 1092-1 standard
9999Z9	Special
<b>Process connection</b>	
B	DIN (UNI 1092-1) flange
D	ANSI flange (price on request)
Z	Special
<b>Electrodes material</b>	
1	SS316L Stainless steel
3	Hastelloy C
4	Titanium
5	Tantalum
6	Platinum
<b>Power supply</b>	
A	85÷265Vac
B	24Vdc
D	12Vdc
Z	Special
<b>Accessories</b>	
0	None
1	316SS or Hastelloy C grounding rings for plastic pipe installation (price on request)
2	Protective rings against inner lining abrasion (price on request)
3	3rd electrode - price on request
9	Special
<b>Output</b>	
A	4÷20mA + pulse output
C	4÷20mA + pulse output + HART
E	4÷20mA + pulse output + MODBUS RTU
F	4÷20mA + pulse output - with galvanic separation
H	4÷20mA + pulse output + HART - with galvanic separation
L	4÷20mA + pulse output + MODBUS RTU - with galvanic separation
<b>Pipe protection degree</b>	
1	IP67
2	IP68 (only for remote version)



## RKMAG

- Specific for installations with “0 diameters” near curves, fittings etc ...
- Dn 50 ÷ 150 mm
- Accuracy:  $\pm 0.5\%$
- Sensor and lining in ABS
- Power supply 85 ÷ 265 Vac o 12; 24 Vac/Vdc
- 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 FEATURES

#### Flow rate range

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

#### Range dimension / lining material

ABS DN50 ÷ DN150

#### Sensor material

ABS

#### Housing material

epoxy painted aluminium

#### Electrodes material

SS316L - Hastelloy C - Titanium - Tantalum - Platinum

#### Measure range

<3m<sup>3</sup>/h ÷ >600m<sup>3</sup>/h

#### Accuracy

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

#### Repeatability

$\pm 0,1\%$

#### Fluid conductivity

>5 $\mu$ S/cm.

#### Power supply

85÷265Vac, 24Vac/dc, 12Vdc.

#### Consumption

6W, max. 8W.

#### Ambient Temperature Limits

Remote version operating temperature: ABS -20 ÷ +120°C

Compact version operating temperature: ABS -20 ÷ +75°C

Storage temperature: -40÷85°C

#### Communication protocol

Modbus RTU or Bluetooth App Android (opt.) or Hart (opt.)

#### Data Logger

Internal data logger to USB pen drive for flow measurements and analog inputs storing; the measurement storage interval can be set from 15 to 3600 seconds

#### Output

4÷20mA: 0÷500 $\Omega$

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.

#### Input signals

RKMAG has 2 active analog inputs at 24Vdc for 2-wire transmitters connection (eg. Temperature or pressure) and 1 digital input for an external contact connection for the integrated batch function restart and for partial totalizer management.

#### Reverse Flow

Allows measure and totalization of reverse flow.

#### Output Testing

Relays output: Transmitter can switch relays at testing value.

Current Source: Transmitter can be commanded to supply a specified test current between 4.0 and 20.0 mA.

Frequency Source: Transmitter can be commanded to supply a specified test frequency between 1 ÷ 10000 Hz.

#### 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

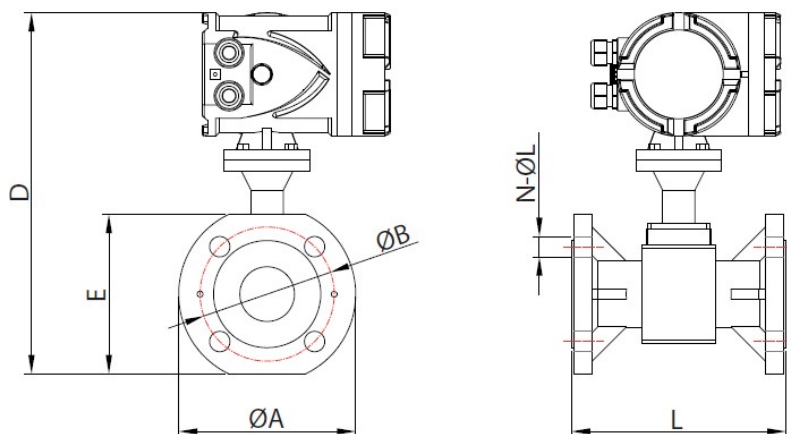
IP67

#### Remote version IP rating

sensor IP67 / IP68 (by request) - converter IP67

#### Anti-condensation filter

Anti-condensation filter installed on converter



DN (mm)	L (mm)	ØA (mm)	ØB (mm)	E (mm)	D (mm)	N-ØL (mm)
50	200	165	125	150	340	4-Ø18
80	200	200	160	185	370	8-Ø18
100	250	220	180	205	385	8-Ø18
150	300	285	240	285	500	8-Ø22

## Rkmag Electromagnetic flowmeter

Zero diameter mounting.  
 For conductive fluids. With sensor body in ABS  
 Medium ambient temperature range: -20° + 75°C  
 IP67 electronic housing with anticondensation filter  
 2 alarm relays (min/max)

Version	
<b>B</b>	Remote - acc. 0,2% - std cable length 5m - Data logger - n.2 4+20mA input
<b>C</b>	Remote - acc. 0,5% - std cable length 5m - Data logger - n.2 4+20mA input
<b>L</b>	Compact - acc. 0,2% - max temperature of the fluid 100°C - Data logger - n.2 4+20mA input
<b>N</b>	Compact - acc. 0,5% - max temperature of the fluid 100°C - Data logger - n.2 4+20mA input
DN flange / Max. pressure / Lining ( temperature range of the fluid)	
<b>0050E4</b>	DN50 / 1.6MPa / ABS (-20° + +120°C); range 3 + 66m <sup>3</sup> /h; standard UNI 1092-1
<b>0080E4</b>	DN80 / 1.6MPa / ABS (-20° + +120°C); range 8,9 + 180m <sup>3</sup> /h; standard UNI 1092-1
<b>0100E4</b>	DN100 / 1.6MPa / ABS (-20° + +120°C); range 11 + 282m <sup>3</sup> /h; standard UNI 1092-1
<b>0150E4</b>	DN150 / 1.6MPa / ABS (-20° + +120°C); range 30 + 600m <sup>3</sup> /h; standard UNI 1092-1
Process connection	
<b>B</b>	DIN (UNI 1092-1) flange
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
Accessories	
<b>0</b>	None
Output	
<b>A</b>	4+20mA with gavanic separation + pulse
<b>B</b>	4+20mA with galvanic separation + pulse + MODBUS RTU + BLUETOOTH
<b>C</b>	>PENDING< 4+20mA with galvanic separation + pulse + HART
<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 flow meter
- Dn 10 ÷ 250
- Accuracy: class II
- RUBBER / PTFE lining
- Power supply 85 ÷ 265 Vac o 12; 24 Vac/Vdc
  
- Configuration and displaying via VL701with O-LED display



RPmagM with MID certification is suitable for all industrial processes where fiscal and custody transfer are required. It complies to 2014/32/EU directive and to OIML R 49-1/2/3, EN 14154-1/2/3, ISO 4064-1/2/5 standards. Various materials for lining are available, as well as electrodes made of Hastelloy C, tantalum and titanium. The converter can be supplied with most common communication systems such as MODBUS RTU.

### TECHNICAL FEATURES

#### Flow rate range

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

#### Range dimension / lining material

PTFE DN10 ÷ DN250 / RUBBER DN10 ÷ DN2500

#### Sensor material

SS321

#### Housing material

epoxy painted aluminium

#### Electrodes material

SS316L - Hastelloy C - Titanium - Tantalum - Platinum

#### Measure range

$R=Q3/Q1 \leq 200$ ;  $Q2/Q1=1,6$

#### Accuracy

Class II

#### Repeatability

$\pm 0,1\%$

#### Fluid conductivity

$> 5\mu S/cm$ .

#### Power supply

85÷265Vac, 24Vac/dc, 12Vdc.

#### 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

#### Data Logger

Internal data logger via USB pen drive for event counter variations

#### 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.

#### Output Testing

Relays output: Transmitter can switch relays at testing value.

Current Source: Transmitter can be commanded to supply a specified test current between 4.0 and 20.0 mA.

Frequency Source: Transmitter can be commanded to supply a specified test frequency between 1 and 10000 Hz.

#### Humidity Limits

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

#### Damping

Adjustable between 1 and 99 seconds.

#### Compact version IP rating

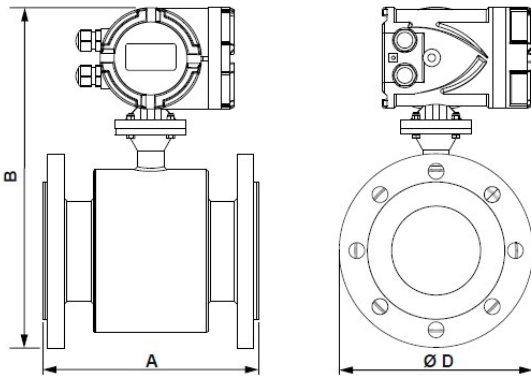
IP67

#### 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 fluids. Sensor pipe in SS321  
 Medium ambient temperature range: +5° + 40°C  
 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 ( temperature range of the fluid)	
<b>0010E2</b>	DN10 / 1.6MPa / PTFE (-40° + +150°C); range 0,0125 + 3,125m3/h; standard UNI 1092-1
<b>0015E2</b>	DN15 / 1.6MPa / PTFE (-40° + +150°C); range 0,0315 + 7,875m3/h; standard UNI 1092-1
<b>0020E2</b>	DN20 / 1.6MPa / PTFE (-40° + +150°C); range 0,05 + 12,5m3/h; standard UNI 1092-1
<b>0025E2</b>	DN25 / 1.6MPa / PTFE (-40° + +150°C); range 0,08 + 20m3/h; standard UNI 1092-1
<b>0032E2</b>	DN32 / 1.6MPa / PTFE (-40° + +150°C); range 0,125 + 31,25m3/h; UNI 1092-1 standard
<b>0040E2</b>	DN40 / 1.6MPa / PTFE (-40° + +150°C); range 0,2 + 50m3/h; standard UNI 1092-1
<b>0050E2</b>	DN50 / 1.6MPa / PTFE (-40° + +150°C); range 3 + 66m3/h; standard UNI 1092-1
<b>0065E1</b>	DN65 / 1.6MPa / Neoprene (-10° + +80°C); range 0,315 + 78,75m3/h; standard UNI 1092-1
<b>0065E2</b>	DN65 / 1.6MPa / PTFE (-40° + +150°C); range 0,315 + 78,75m3/h; standard UNI 1092-1
<b>0080E1</b>	DN80 / 1.6MPa / Neoprene (-10° + +80°C); range 0,8 + 200m3/h; standard UNI 1092-1
<b>0080E2</b>	DN80 / 1.6MPa / PTFE (-40° + +150°C); range 0,8 + 200m3/h; standard UNI 1092-1
<b>0100E1</b>	DN100 / 1.6MPa / Neoprene (-10° + +80°C); range 1,25 + 312,5m3/h; standard UNI 1092-1
<b>0100E2</b>	DN100 / 1.6MPa / PTFE (-40° + +150°C); range 1,25 + 312,5m3/h; standard UNI 1092-1
<b>0125E1</b>	DN125 / 1.6MPa / Neoprene (-10° + +80°C); range 1,25 + 312,5m3/h; standard UNI 1092-1
<b>0125E2</b>	DN125 / 1.6MPa / PTFE (-40° + +150°C); range 1,25 + 312,5m3/h; standard UNI 1092-1
<b>0150E1</b>	DN150 / 1.6MPa / Neoprene (-10° + +80°C); range 2 + 500m3/h; standard UNI 1092-1
<b>0150E2</b>	DN150 / 1.6MPa / PTFE (-40° + +150°C); range 30 + 600m3/h; standard UNI 1092-1
<b>0200E1</b>	DN200 / 1.6MPa / Neoprene (-10° + +80°C); range 3,15 + 787,5m3/h; standard UNI 1092-1
<b>0200E2</b>	DN200 / 1.6MPa / PTFE (-40° + +150°C); range 3,15 + 787,5m3/h; standard UNI 1092-1
<b>0250E1</b>	DN250 / 1.6MPa / Neoprene (-10° + +80°C); range 3,15 + 787,5m3/h; standard UNI 1092-1
<b>0250E2</b>	DN250 / 1.6MPa / PTFE (-40° + +150°C); range 3,15 + 787,5m3/h; standard UNI 1092-1
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	
0	None
1	316SS or Hastelloy C grounding rings for plastic pipe installation (price on request)
2	Protective rings against inner lining abrasion (price on request)
3	3rd electrode - price on request

Output	
A	4+20mA + pulse output - with galvanic separation
C	>PENDING< 4+20mA + pulse output + HART - with galvanic separation
E	4+20mA + pulse + MODBUS RTU with galvanic separation

Pipe protection degree	
1	IP67
2	IP68 - only for remote version



## RSMAG

- Specific for sanitary process
- SS304 sensor pipe
- $\pm 0.2\%$  ;  $\pm 0.5\%$  accuracy
- DIN and CLAMP sanitary connection
- PFA / PTFE lining
- Power supply 85  $\pm$  265 Vac o 12; 24 Vac/Vdc
- Datalogger via pendrive USB
- Configuration and displaying via VL701with O-LED display



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 applications

### TECHNICAL FEATURES

#### Flow rate range

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

#### Range dimension / lining material

PTFE/PFA DN10  $\div$  DN150

#### Sensor pipe material

SS304

#### Housing material

epoxy painted aluminum

#### Electrodes material

SS316L - Hastelloy C - Titanio - Tantalio

#### Measure range

<0,1m<sup>3</sup>/h  $\div$  >600m<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 $\pm$ 265Vac, 24Vdc, 12Vdc.

#### Consumption

6W, max. 8W.

#### Temperature range

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

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

Storage temperature: -40 $\div$ 85°C

#### Communication

modbus or Hart (opt.)

#### Data Logger

Internal data logger to USB pen drive for flow measurements and analog inputs storing; the measurement storage interval can be set from 15 to 3600 seconds

#### Output

4 $\div$ 20mA: 0 $\div$ 500 $\Omega$

Frequency output: 0,1 $\div$ 10000 Hz

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

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

#### Input signals

RSmag has 2 active analog inputs at 24Vdc for 2-wire transmitters connection (eg. Temperature or pressure) and 1 digital input for an external contact connection for the integrated batch function restart and for partial totalizer management.

#### Reverse Flow

Allows measure and totalization of reverse flow

#### Output Testing

Relays output: Transmitter can switch relays at testing value. Current Source: Transmitter can be commanded to supply a specified test current between 4.0 and 20.0 mA. Frequency Source: Transmitter can be commanded to supply a specified test frequency between 1 and 10000 Hz.

#### 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

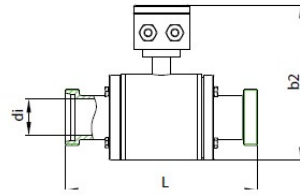
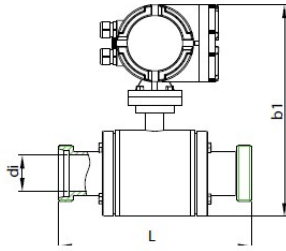
IP67

#### Remote version IP rating

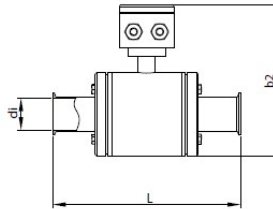
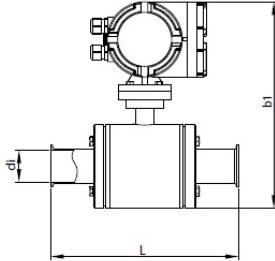
sensor IP67 / IP68 (by request) - converter IP67

#### Anti-condensation filter

Anti-condensation filter installed on converter



DN (mm)	d1 (mm)	L (mm)	b1 (mm)	b2 (mm)
10	10	168	250	165
15	16	168	258	173
20	20	168	258	173
25	26	191	260	175
32	32	192	270	185
40	38	284	315	230
50	50	288	315	230
65	66	296	330	245
80	81	366	350	265
100	100	384	370	285



DN (mm)	d1 (mm)	L (mm)	b1 (mm)	b2 (mm)
10	8	168	250	165
15	15	168	258	173
20	16	168	258	173
25	25	191	260	175
32	31	192	270	185
40	37	284	315	230
50	46	288	315	230
65	66	296	330	245
80	81	366	350	265
100	100	384	370	285

**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 + 75°C  
 IP67 electronic housing with anticondensation filter  
 2 alarm relays (min/max)

Version	
<b>E</b>	Remote - accuracy 0,2% (up to DN150) - standard cable length 5m
<b>F</b>	Remote - accuracy 0,5% - standard cable length 5m
<b>W</b>	Compact - accuracy 0,2% (up to DN150) - max temperature of the fluid 80°C
<b>Y</b>	Compact - accuracy 0,5% - max temperature of the fluid 80°C
<b>B</b>	Remote - acc. 0,2% (up to DN150) - Data logger - n.2 4+20mA input standard cable length 5m
<b>C</b>	Remote - acc. 0,5% - Data logger - n.2 4+20mA input - std cable length 5m
<b>L</b>	Compact - acc. 0,2% (up to DN150) - max temperature of the fluid 80°C - Data logger - n.2 4+20mA input
<b>N</b>	Compact - acc. 0,5% - max temperature of the fluid 80°C - Data logger - n.2 4+20mA input

DN flange / Max. pressure / Lining ( temperature range of the fluid)	
0010E2	DN10 / 1.6MPa / PFA (-40° + +150°C); range 0,14 + 2,9m3/h - only with CLAMP process connection (E cod.)
0010E3	DN10 / 1.6MPa / PTFE (-40° + +150°C); range 0,14 + 2,9m3/h - only with CLAMP process connection (E cod.)
0015E2	DN15 / 1.6MPa / PFA (-40° + +150°C); range 0,3 + 6m3/h
0015E3	DN15 / 1.6MPa / PTFE (-40° + +150°C); range 0,3 + 6m3/h
0020E2	DN20 / 1.6MPa / PFA (-40° + +150°C); range 0,5 + 12m3/h
0020E3	DN20 / 1.6MPa / PTFE (-40° + +150°C); range 0,5 + 12m3/h
0025E2	DN25 / 1.6MPa / PFA (-40° + +150°C); range 0,6 + 18m3/h
0025E3	DN25 / 1.6MPa / PTFE (-40° + +150°C); range 0,6 + 18m3/h
0032E2	DN32 / 1.6MPa / PFA (-40° + +150°C); range 1 + 30m3/h
0032E3	DN32 / 1.6MPa / PTFE (-40° + +150°C); range 1 + 30m3/h
0040E2	DN40 / 1.6MPa / PFA (-40° + +150°C); range 1,8 + 42m3/h
0040E3	DN40 / 1.6MPa / PTFE (-40° + +150°C); range 1,8 + 42m3/h
0050E2	DN50 / 1.6MPa / PFA (-40° + +150°C); range 3 + 66m3/h
0050E3	DN50 / 1.6MPa / PTFE (-40° + +150°C); range 3 + 66m3/h
0065E2	DN65 / 1.6MPa / PFA (-40° + +150°C); range 5,8 + 120m3/h
0065E3	DN65 / 1.6MPa / PTFE (-40° + +150°C); range 5,8 + 120m3/h
0080E2	DN80 / 1.6MPa / PFA (-40° + +150°C); range 8,9 + 180m3/h
0080E3	DN80 / 1.6MPa / PTFE (-40° + +150°C); range 8,9 + 180m3/h
0100E2	DN100 / 1.6MPa / PFA (-40° + +150°C); range 11 + 282m3/h
0100E3	DN100 / 1.6MPa / PTFE (-40° + +150°C); range 11 + 282m3/h
0125E2	DN125 / 1.6MPa / PFA (-40° + +150°C); range 20 + 450m3/h
0125E3	DN125 / 1.6MPa / PTFE (-40° + +150°C); range 20 + 450m3/h
0150E2	DN150 / 1.6MPa / PFA (-40° + +150°C); range 30 + 600m3/h
0150E3	DN150 / 1.6MPa / PTFE (-40° + +150°C); range 30 + 600m3/h

Process connection	
<b>D</b>	DIN 11851
<b>E</b>	SS304 CLAMP DIN 32676
<b>Z</b>	Special

Electrodes material	
1	SS316L stainless steel
3	Hastelloy C
4	Titanium
5	Tantalum
9	Special

Power supply	
A	85+265Vac
B	24Vdc
C	24Vac (only for B,C,L,N versions)
D	12Vdc
Z	Special

Accessories	
0	None

Output	
A	4+20mA + pulse output (B/C/L/N versions standard with galvanic separation)
B	4+20mA with galvanic separation + pulse + MODBUS RTU + BLUETOOTH (for B/C/L/N version only)
C	4+20mA + pulse output + HART (B/C/L/N versions standard with galvanic separation-PENDING)
E	4+20mA + pulse + MODBUS RTU (B/C/L/N versions standard with galvanic separation)

Pipe protection degree	
1	IP67
2	IP68 (only for remote version)

## RBMAG

- For conductive liquids ( $>5\mu\text{S/cm}$ ), even with a content of suspended solids
- Dn 10 ÷ 1000 mm
- $\pm 0.2\%$  ;  $\pm 0.5\%$  accuracy
- RUBBER / PTFE lining
- 85 ÷ 265 Vac o 12; 24 Vdc power supply
- Wireless data transmission (pending)
- Battery powered



The battery powered RBmag flowmeters are ideal for remote monitoring application where there are no external power supplies available.

### TECHNICAL FEATURES

#### Flow Rate Range

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

#### Range / Lining material

PTFE DN10 ÷ DN500  
RUBBER DN65 ÷ DN2000

#### Sensor pipe material

SS321

#### Housing material

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

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

#### Power supply

Battery

#### 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 (opt.)

#### Output

Frequency: 0,1÷5000 Hz

Pulse: open collector

#### Reverse Flow

Allow measure reverse flow.

#### Output Testing

Frequency Source: Transmitter can be commanded to supply a specified test frequency between 0.1 and 5000 Hz.

#### Start-up Time

0.5 seconds

#### Low Flow Cutoff

Adjustable between 0.0 and 9.9%Qmax. Below selected value, output is driven to the zero flow rate signal level.

#### Humidity Limits

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

#### Damping

Adjustable between 0.1 and 99 seconds.

#### Compact version IP rating

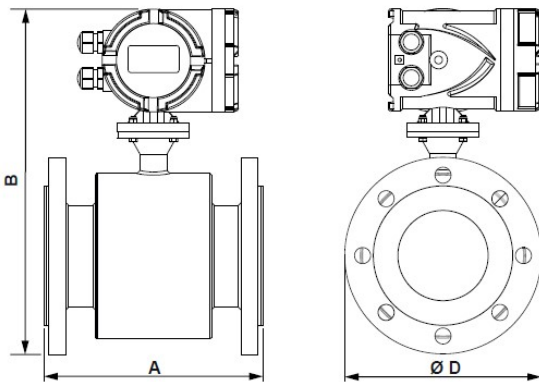
IP67

#### 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	-	-

**RBMAG** Battery electromagnetic flowmeter

For conductive fluids. With sensor pipe in SS321  
 Medium ambient temperature range: -20° + 75°C  
 Housing protection degree for electronic: IP67

Version	
<b>E</b>	Remote - accuracy 0,2% (up to DN150) - standard cable length 5m - max 50m)
<b>F</b>	Remote - standard cable length 5m - max 50m)
<b>W</b>	Compact - accuracy 0,2% (up to DN150) - max temperature of the fluid 100°C
<b>Y</b>	Compact - max temperature of the fluid 100°C

DN flangia / Pressione max. / Rivestimento (limiti di temperatura del fluido)	
0010B2	DN10 / 4.0MPa / PTFE (-40° + +150°C); range 0,14 + 2,9m3/h; standard UNI 1092-1
0010E2	DN10 / 1.6MPa / PTFE (-40° + +150°C); range 0,14 + 2,9m3/h; standard UNI 1092-1
0015B2	DN15 / 4.0MPa / PTFE (-40° + +150°C); range 0,3 + 6m3/h; standard UNI 1092-1
0015E2	DN15 / 1.6MPa / PTFE (-40° + +150°C); range 0,3 + 6m3/h; standard UNI 1092-1
0020B2	DN20 / 4.0MPa / PTFE (-40° + +150°C); range 0,5 + 12m3/h; standard UNI 1092-1
0020E2	DN20 / 1.6MPa / PTFE (-40° + +150°C); range 0,5 + 12m3/h; standard UNI 1092-1
0025B2	DN25 / 4.0MPa / PTFE (-40° + +150°C); range 0,6 + 18m3/h; standard UNI 1092-1
0025E2	DN25 / 1.6MPa / PTFE (-40° + +150°C); range 0,6 + 18m3/h; standard UNI 1092-1
0032B2	DN32 / 4.0MPa / PTFE (-40° + +150°C); range 1 + 30m3/h; standard UNI 1092-1
0032E2	DN32 / 1.6MPa / PTFE (-40° + +150°C); range 1 + 30m3/h; standard UNI 1092-1
0040B2	DN40 / 4.0MPa / PTFE (-40° + +150°C); range 1,8 + 42m3/h; standard UNI 1092-1
0040E2	DN40 / 1.6MPa / PTFE (-40° + +150°C); range 1,8 + 42m3/h; standard UNI 1092-1
0050B2	DN50 / 4.0MPa / PTFE (-40° + +150°C); range 3 + 66m3/h; standard UNI 1092-1
0050E2	DN50 / 1.6MPa / PTFE (-40° + +150°C); range 3 + 66m3/h; standard UNI 1092-1
0065B1	DN65 / 4.0MPa / Neoprene (-10° + +80°C); range 5,8 + 120m3/h; standard UNI 1092-1
0065B2	DN65 / 4.0MPa / PTFE (-40° + +150°C); range 5,8 + 120m3/h; standard UNI 1092-1
0065E1	DN65 / 1.6MPa / Neoprene (-10° + +80°C); range 5,8 + 120m3/h; standard UNI 1092-1
0065E2	DN65 / 1.6MPa / PTFE (-40° + +150°C); range 5,8 + 120m3/h; standard UNI 1092-1
0080B1	DN80 / 4.0MPa / Neoprene (-10° + +80°C); range 8,9 + 180m3/h; standard UNI 1092-1
0080B2	DN80 / 4.0MPa / PTFE (-40° + +150°C); range 8,9 + 180m3/h; standard UNI 1092-1
0080E1	DN80 / 1.6MPa / Neoprene (-10° + +80°C); range 8,9 + 180m3/h; standard UNI 1092-1
0080E2	DN80 / 1.6MPa / PTFE (-40° + +150°C); range 8,9 + 180m3/h; standard UNI 1092-1
0100B1	DN100 / 4.0MPa / Neoprene (-10° + +80°C); range 11 + 282m3/h; standard UNI 1092-1
0100B2	DN100 / 4.0MPa / PTFE (-40° + +150°C); range 11 + 282m3/h; standard UNI 1092-1
0100E1	DN100 / 1.6MPa / Neoprene (-10° + +80°C); range 11 + 282m3/h; standard UNI 1092-1
0100E2	DN100 / 1.6MPa / PTFE (-40° + +150°C); range 11 + 282m3/h; standard UNI 1092-1
0125B1	DN125 / 4.0MPa / Neoprene (-10° + +80°C); range 20 + 450m3/h; standard UNI 1092-1
0125B2	DN125 / 4.0MPa / PTFE (-40° + +150°C); range 20 + 450m3/h; standard UNI 1092-1
0125E1	DN125 / 1.6MPa / Neoprene (-10° + +80°C); range 20 + 450m3/h; standard UNI 1092-1
0125E2	DN125 / 1.6MPa / PTFE (-40° + +150°C); range 20 + 450m3/h; standard UNI 1092-1
0150B1	DN150 / 4.0MPa / Neoprene (-10° + +80°C); range 30 + 600m3/h; standard UNI 1092-1
0150B2	DN150 / 4.0MPa / PTFE (-40° + +150°C); range 30 + 600m3/h; standard UNI 1092-1
0150E1	DN150 / 1.6MPa / Neoprene (-10° + +80°C); range 30 + 600m3/h; standard UNI 1092-1
0150E2	DN150 / 1.6MPa / PTFE (-40° + +150°C); range 30 + 600m3/h; standard UNI 1092-1

0200C1	DN200 / 1.0MPa / Neoprene (-10° + +80°C); range 50 + 1100m3/h; UNI 1092-1 standard
0200C2	DN200 / 1.0MPa / PTFE (-40° + +150°C); range 50 + 1100m3/h; UNI 1092-1 standard
0200E1	DN200 / 1.6MPa / Neoprene (-10° + +80°C); range 50 + 1100m3/h; UNI 1092-1 standard
0200E2	DN200 / 1.6MPa / PTFE (-40° + +150°C); range 50 + 1100m3/h; UNI 1092-1 standard
0250C1	DN250 / 1.0MPa / Neoprene (-10° + +80°C); range 85 + 1700m3/h; UNI 1092-1 standard
0250C2	DN250 / 1.0MPa / PTFE (-40° + +150°C); range 85 + 1700m3/h; UNI 1092-1 standard
0250E1	DN250 / 1.6MPa / Neoprene (-10° + +80°C); range 85 + 1700m3/h; UNI 1092-1 standard
0250E2	DN250 / 1.6MPa / PTFE (-40° + +150°C); range 85 + 1700m3/h; UNI 1092-1 standard
0300C1	DN300 / 1.0MPa / Neoprene (-10° + +80°C); range 110 + 2400m3/h; UNI 1092-1 standard
0300C2	DN300 / 1.0MPa / PTFE (-40° + +150°C); range 110 + 2400m3/h; UNI 1092-1 standard
0300E1	DN300 / 1.6MPa / Neoprene (-10° + +80°C); range 110 + 2400m3/h; UNI 1092-1 standard
0300E2	DN300 / 1.6MPa / PTFE (-40° + +150°C); range 110 + 2400m3/h; UNI 1092-1 standard
0350C1	DN350 / 1.0MPa / Neoprene (-10° + +80°C); range 180 + 3300m3/h; UNI 1092-1 standard
0350C2	DN350 / 1.0MPa / PTFE (-40° + +150°C); range 180 + 3300m3/h; UNI 1092-1 standard
0350E1	DN350 / 1.6MPa / Neoprene (-10° + +80°C); range 180 + 3300m3/h; UNI 1092-1 standard
0350E2	DN350 / 1.6MPa / PTFE (-40° + +150°C); range 180 + 3300m3/h; UNI 1092-1 standard
0400C1	DN400 / 1.0MPa / Neoprene (-10° + +80°C); range 220 + 4200m3/h; UNI 1092-1 standard
0400C2	DN400 / 1.0MPa / PTFE (-40° + +150°C); range 220 + 4200m3/h; UNI 1092-1 standard
0400E1	DN400 / 1.6MPa / Neoprene (-10° + +80°C); range 220 + 4200m3/h; UNI 1092-1 standard
0400E2	DN400 / 1.6MPa / PTFE (-40° + +150°C); range 220 + 4200m3/h; UNI 1092-1 standard
0450C1	DN450 / 1.0MPa / Neoprene (-10° + +80°C); range 270+ 5400m3/h; UNI 1092-1 standard
0450C2	DN450 / 1.0MPa / PTFE (-40° + +150°C); range 270+ 5400m3/h; UNI 1092-1 standard
0450E1	DN450 / 1.6MPa / Neoprene (-10° + +80°C); range 270+ 5400m3/h; UNI 1092-1 standard
0450E2	DN450 / 1.6MPa / PTFE (-40° + +150°C); range 270+ 5400m3/h; UNI 1092-1 standard
0500C1	DN500 / 1.0MPa / Neoprene (-10° + +80°C); range 320 + 6600m3/h; UNI 1092-1 standard
0500C2	DN500 / 1.0MPa / PTFE (-40° + +150°C); range 320 + 6600m3/h; UNI 1092-1 standard
0500E1	DN500 / 1.6MPa / Neoprene (-10° + +80°C); range 320 + 6600m3/h; UNI 1092-1 standard
0500E2	DN500 / 1.6MPa / PTFE (-40° + +150°C); range 320 + 6600m3/h; UNI 1092-1 standard
0600C1	DN600 / 1.0MPa / Neoprene (-10° + +80°C); range 490 + 9600m3/h; UNI 1092-1 standard
0700C1	DN700 / 1.0MPa / Neoprene (-10° + +80°C); range 680 + 13500m3/h; UNI 1092-1 standard
0800C1	DN800 / 1.0MPa / Neoprene (-10° + +80°C); range 900 + 18000m3/h; UNI 1092-1 standard
0900C1	DN900 / 1.0MPa / Neoprene (-10° + +80°C); range 1200 + 22500m3/h; UNI 1092-1 standard
1000C1	DN1000 / 1.0MPa / Neoprene (-10° + +80°C); (-10° + +80°C); range 1450 + 28000m3/h; UNI 1092-1 standard

#### 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 C
<b>4</b>	Titanium
<b>5</b>	Tantalum
<b>6</b>	Platinum

#### Power supply

<b>D</b>	Battery - 5 years life
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#### Accessories

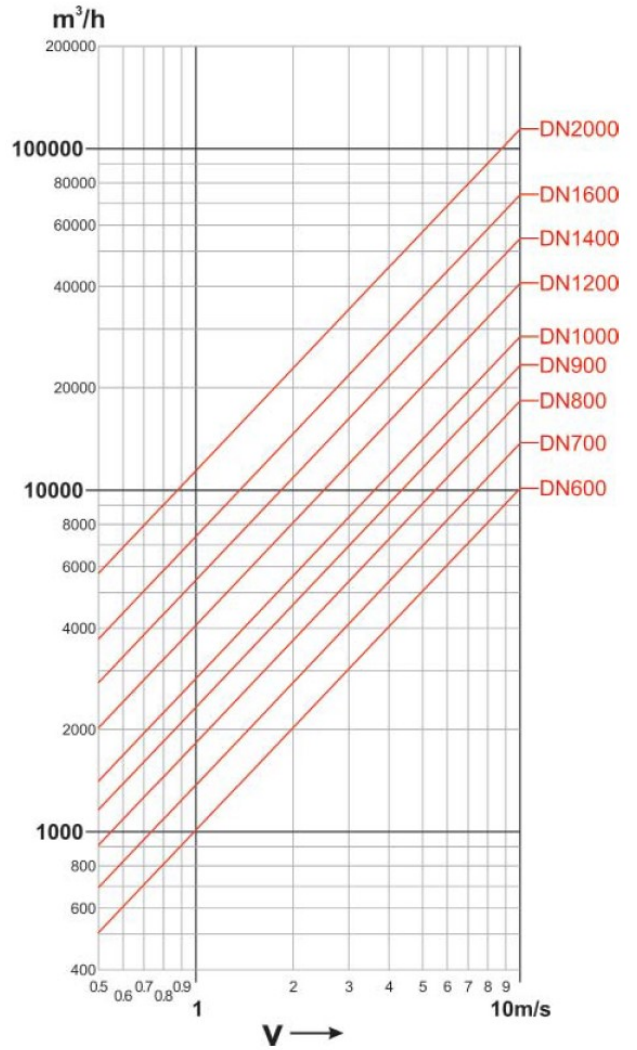
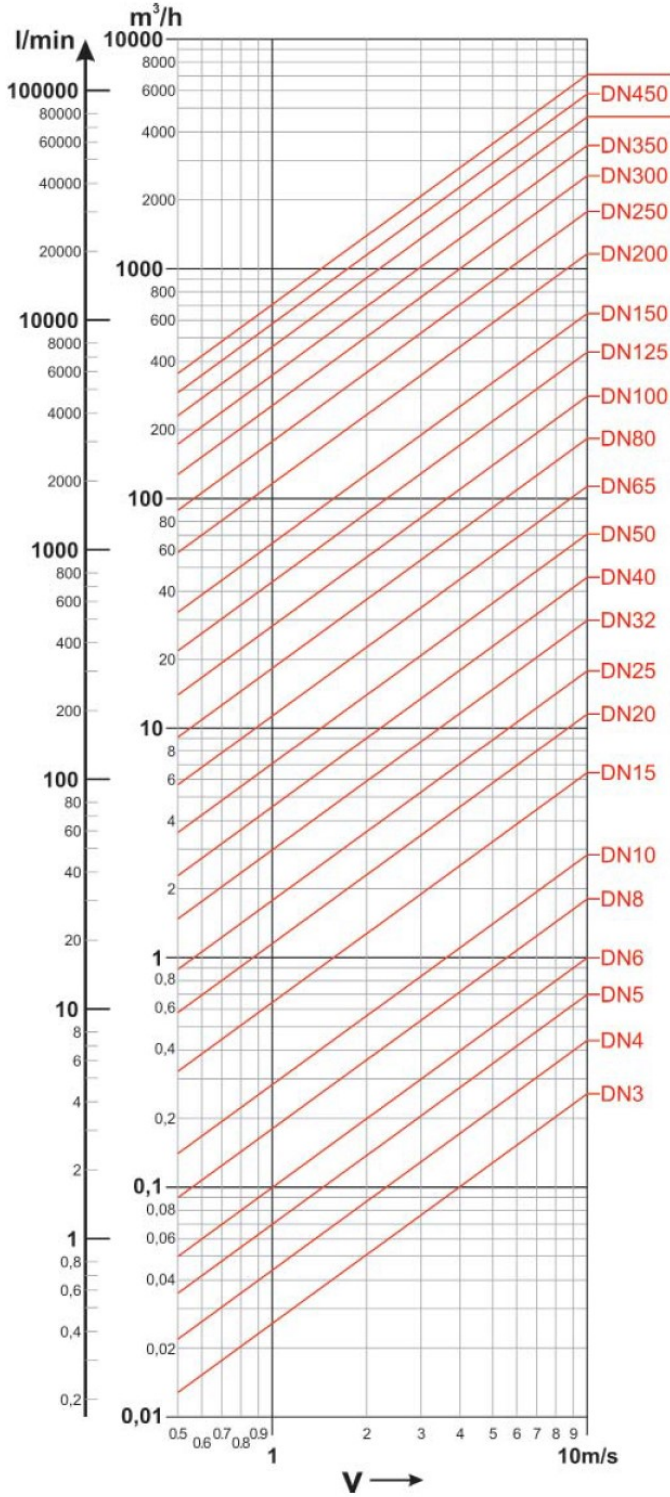
<b>0</b>	None
<b>1</b>	316SS or Hastelloy C grounding rings for plastic pipe installation (price on request)
<b>3</b>	3rd electrode - price on request

#### Output

<b>A</b>	Pulse output
<b>E</b>	Pulse output + MODBUS

#### Pipe protection degree

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



# TRANSIT TIME

SGM101/200 flowmeters operate according to the transit time principle by means of ultrasonic pulses without the need to cut holes or make incisions into the pipeline. The sensors must be fixed with straps onto the surface of the pipeline. The pressure or the chemical characteristics of the liquids are irrelevant. The measurement system is bi-directional and suitable for clean or moderately dirty liquids.



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





	<b>SGM-200H</b>
Pipe diameter range	DN20 ÷ DN4000
Piping material	carbon steel / stainless steel / fiberglass / cast iron / copper / PE / PVC / aluminum
Liquid conductivity	irrelevant
Sensor material	aluminium / PP
Housing material	ABS
Process temperature	-40 ÷ 90° C / -40 ÷ 160° C / -30 ÷ 90° C
Accuracy	±1%
Repeatability	±0,2%
Analog output	-
Communication port	-
Pulse output	-
Power supply	battery 24 hours autonomy
Data logger:	SD card
Heat meter	-

## SGM-101F

- For conductive and non-conductive liquids
- Measure range <math>0,2\text{m}^3/\text{h} \div >400000 \text{ m}^3/\text{h}</math>
- 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 FEATURES

**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**Relay output**

n.1 for pulse totalizer or alarm

**Medium speed range** $\pm 12\text{m/s}$ **Unit working temperature** $-20\div 60^\circ\text{C}$ **Instrument humidity**non condensing 85% RH (40 $^\circ\text{C}$ )**Transducer working temperature**TS-2 / TM-1 / TL-1  $-30 \div +90^\circ\text{C}$ ; TS2H / TM1H  $-30 \div +160^\circ\text{C}$ ; TC-1/ TLC2  $-40 \div +160^\circ\text{C}$ **PT100 sensors working temperature** $-40^\circ\text{C} \div +160^\circ\text{C}$ **Transducer cable std. length**

5mt

**PT100 sensor cable std. length**

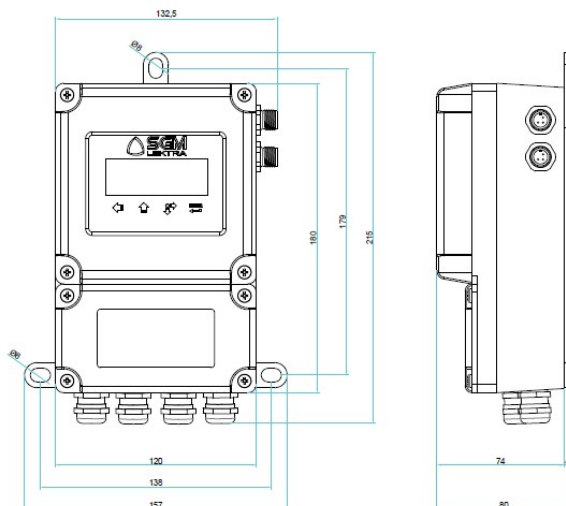
15mt

**Power Supply**230Vac o 10 $\div$ 30Vdc (depending on model)**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+20mA + 1 open collector + 1 relay  
 Accuracy not better  $\pm 1\%$   
 Transducers standard connection cable 5 mt  
 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+30 Vdc
<b>Z</b>	Special

Flow transducers	
<b>A0--</b>	None
<b>Z999</b>	Special
<b>TS-2</b>	Clamp-on type for pipes DN 20+100 / -40+90°C - max 200 mt)
<b>TM-1</b>	Clamp-on type for pipes DN 50+700 / -40+90°C - max 200 mt)
<b>TL-1</b>	Clamp-on type for pipes DN 300+4000 / -40+90°C - max 200 mt)
<b>TS2H</b>	Clamp-on type for pipes DN 20+100 - high temperature -40+160°C - max 200 mt)
<b>TM1H</b>	Clamp-on type for pipes DN 50+700 - high temperature -40+160°C - max 200 mt)
<b>TL1H</b>	Clamp-on type for pipes DN 300+4000 - high temperature -40+160°C - max 200 mt)
<b>TC-1</b>	Insertion type for pipes with max thickness 20mm -40+160°C - max 200 mt)
<b>TLC2</b>	Insertion type for pipes with max thickness 80mm -40+160°C - max 200 mt)

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>	Couple of PT100 class A in MGO with SS316 sheat $\phi$ 3mm. M12 connector - L= 150 mm
<b>H</b>	Couple of SS316 wells for PT100 class A in MGO with sliding fitting. Process connection G 1/4 M - L= 50 mm
<b>L</b>	Couple of SS316 wells for PT100 class A in MGO with sliding fitting. Process connection G 1/4 M - L= 100 mm
<b>P</b>	Couple of surface mounting brass plates for PT100 class A in MGO $\phi$ 3mm
<b>Q</b>	Couple of metallic hose clamps for up to DN900 pipes (590A010A)
<b>Z</b>	Special

## SGM-200H

- Handheld system for conductive and non-conductive fluids, even with the suspended material presence (<10g/l; <Ø1mm)
- Measure range <0,2m<sup>3</sup>/h ÷ >400000m<sup>3</sup>/h
- Accuracy: ± 1%
- Clamp on IP67 sensors also for high temperatures and sensors on metric frame
- Pipe Range DN20 ÷ DN4000
- Datalogger via SD card
- LCD color display
- Battery life: 48h



The SGM-200H 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 FEATURES

**Pipe dimension range**

DN20 ÷ DN4000

**Transducer protection class**

IP66

**Display**

3.5", 320x240pixel, 65536 colours

**Keypad**

8 keys

**Handheld housing**

ABS

**Accuracy**

±1%

**Battery life**

48 h

**Charger**

100÷240Vac

**Displayed data**

instantaneous flowrate; flow totalizer

**Totalizer**

7 digits for positive, negative and net

**Data logger**

SD card

**Clamp-on transducers**

TS-2 for 20 ÷ 100mm pipes (-40÷90°C)

TM-1 for 50 ÷ 700mm pipes (-40÷90°C)

TL-1 for 300 ÷ 4000mm pipes (-40÷90°C)

**Clamp-on transducers on metric frame**

HSNN for 20 ÷ 100mm pipes (-30÷90°C)

HMNN for 50 ÷ 300mm pipes (-30÷90°C)

HMEN for 300 ÷ 700mm pipes (-30÷90°C)

**Clamp-on transducers for HT**

TS2H for 20 ÷ 100mm pipes (-40÷160°C)

TM1H for 50 ÷ 700mm pipes (-40÷160°C)

**SGM-200H**      Portable transit time ultrasonic flow meter

For conductive and non-conductive fluids . With clamp-on transducers.  
 Speed range: max  $\pm$  20m/s. Simultaneous display of flowrate and cumulative volume data  
 Accuracy: not better  $\pm$  1%  
 Ambient temperature: -20° + 60°C - Humidity <85% (RH)  
 Battery life: 48 hours - Transducers connection cables: 5 mt  
 Supplied with acoustic coupling gel, battery charger, accessories for transducers mounting (up to DN1000) and Nr.1 8GB SD card (cod.816A001A) with software for data acquisition on PC

Transducers	
<b>A0--</b>	None
<b>TS-2</b>	Couple of transducers for pipes from DN20 to DN100 (-40°+90°C) + 2 fast clamp belts (590A011A)
<b>TS2H</b>	Couple of high temperature transducers for pipes from DN20 to DN100 (-40°+160°C) + steel hose clamps (590A010A)
<b>TM-1</b>	Couple of transducers for pipes from DN50 to DN700 (-40°+90°C) + 2 ratchet belts (590A012A)
<b>TM1H</b>	Couple of high temperature transducers for pipes from DN50 to DN700 (-40°+160°C) + steel hose clamps (590A010A)
<b>TL-1</b>	Couple of transducers for pipes from DN300 to DN4000 (-40°+90°C) + 2 ratchet belts (590A012A)
<b>HSNN</b>	Couple of transducers on metric frame for pipes from DN20 to DN100 (-30°+90°C) + 2 fast clamp belts (590A011A)
<b>HMNN</b>	Couple of transducers on metric frame for pipes from DN50 to DN300 (-30°+90°C) + 2 ratchet belts (590A012A)
<b>HMEN</b>	Couple of transducers on metric frame for pipes from DN50 to DN700 (-30°+90°C) + 4 ratchet belts (590A012A)
Accessories	
<b>A</b>	None
<b>D</b>	Grease for high temperature

# SGM-100T

- Digital compact thickness gauge
- Measure range 1,2 ÷ 200mm
- Suitable for steel, cast iron, PVC, glass etc..
- Accuracy:  $\pm 0.5\%$
- Battery powered



SGM-100T utilizes the transit time principle to obtain a precision measure. Thanks to the high transmission and reception efficiency SGM-100T can also measure on rough surfaces, such as cast iron, and can be used in almost all industrial sectors. SGM-100T can measure many materials thickness, eg.: Steel, cast iron, aluminum, copper, brass, zinc, glass, polyethylene, PVC, etc.. SGM-100T has the automatic switch off (after about 1 inactivity minute) to avoid undesirable energy consumption, so increasing the battery life.

## TECHNICAL FEATURES

### Display

4 digit backlighted; 48x29mm

### Range

1.2÷200mm (Steel max.45mm)

### Resolution

0.1mm/0.001inch

### Accuracy

$\pm 0.5\%$

### Sonic speed

1000 ÷ 9000 m/s

### Power supply

battery 4x1.5v AAA (UM-4)

### Working temperature

0÷50°C

### Humidity

<80%

### Dimensions

120x62x30mm (4.7x2.4x1.2inch)

### Weight

164g (without batteries)

**SGM-100T**      Ultrasonic thickness meter

<b>Base</b>	
<b>SGM-100T</b>	Measuring range: 1,2+225mm, 0,05-9" Materials measured: any hard materials, including steel, cast iron, aluminum, red copper, PVC and other materials Lower limit steel pipes: Ø15x2.0mm, Ø20x3.0mm determined by the transducer Resolution: 0.1mm Accuracy: $\pm(,5\%n+0,1)$ Power supply: 4x1.5V AAA (UM-4) battery (not included) Backlit LCD display Operating conditions: 0 + + 50°C (32°F+104°F), <90%RH

# OPEN CHANNEL

The flow measurement in open channels is based on the measurement of the increase in height due to the insertion of a suitable device.

For partially filled pipes it is necessary to cut the pipe for the insertion of a Palmer Bowlus device. The jump due to the inserted device is measured by means of an ultrasonic level meter (without contact with the liquid) associated with a control unit for the level/flow conversion.

Due to the growing integration of the systems, SGM LEKTRA has realized the FLOWMETER UNIT, a compact ultrasonic instrument which instantly converts the level into flow.



	<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 m³/h	1 ÷ > 7700 m³/h





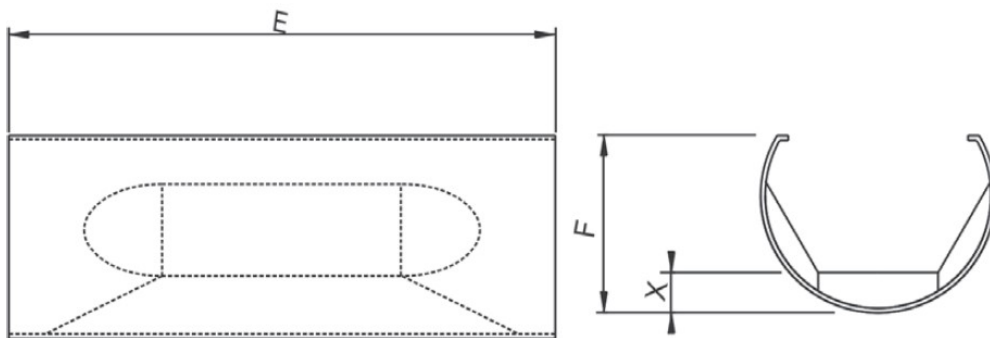
	FLOWMETER	FLOW51	VLW90M + PTU50/51
Calibration and configuration	4 buttons or MODBUS RTU	VLW601 or MODBUS RTU	5 buttons
Use:	For any weir / channel STD or custom	For any weir / channel STD or custom	For any weir / channel STD or custom
Mechanical protection	IP67	IP68	IP66 VLW90M IP68 PTU50 / 51
Block distance	25 cm	30 cm	PTU50 5 cm / PTU51 30 cm
Data logger:	No	No	USB pen drive
Housing material	PC/AL	-	ABS
Sensor material	PP	PP	PP
Process connectios	G2"	G1"	G1"
Operating temperature	-20 ÷ +60 °C	-25 ÷ +75 °C	-25 ÷ +75 °C
Accuracy:	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)
Display:	Led	-	Backlit LCD 3.5 TFT 256K color
Analog output	4÷20 mA; max. load 750 Ohm	4÷20mA max 750ohm	2x 4÷20 mA; max. load 750 Ohm
Communication port	MODBUS RTU	MODBUS RTU	MODBUS RTU
Pulse output	relé	-	open collector / relays
Power supply	12; 24 Vdc	24Vdc	85÷265 Vac o 24 Vdc/Vac
Consumption:	1,5 W	1,5W	<6 W

# PB PALMER BOWLUS

- For flow measurement in outflow pipe or no 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.



	E	F	X
DN100 (4")	250	75	17
DN150 (6")	400	132	29
DN200 (8")	400	125	29
DN250 (10")	600	208	46
DN300 (12")	600	200	46
DN400 (16")	950	340	75
DN500 (20")	950	325	75
DN600 (24")	1450	530	117
DN700 (28")	1450	525	117
DN800 (32")	1450	500	117

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

DN pipe (mm)	
100	DN100 (4"); range 0,45÷8m <sup>3</sup> /h (max.8,9m <sup>3</sup> /h)
150	DN150 (6"); range 0,68÷21m <sup>3</sup> /h (max. 22m <sup>3</sup> /h)
200	DN200 (8") - with 2 spacing bars; range 1,2÷50m <sup>3</sup> /h (max. 52m <sup>3</sup> /h)
250	DN250 (10"); range 1,29÷80m <sup>3</sup> /h (max.82m <sup>3</sup> /h)
300	DN300 (12") - with 2 spacing bars; range 2,27÷100m <sup>3</sup> /h (max.102m <sup>3</sup> /h)
400	DN400 (16"); range 2,23÷256m <sup>3</sup> /h (max. 262m <sup>3</sup> /h)
500	DN500 (20") - with 3 spacing bars; range 5,34÷490m <sup>3</sup> /h (max.496m <sup>3</sup> /h)
600	DN600 (24"); range 10÷700m <sup>3</sup> /h (max. 709m <sup>3</sup> /h)
700	DN700 (28"); range 15÷1150m <sup>3</sup> /h (max. 1177m <sup>3</sup> /h)
800	DN800 (32") - with 4 spacing bars; range 18÷1800m <sup>3</sup> /h (max. 1841m <sup>3</sup> /h)
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

- Installation in rectangular channels
- Flow rates  $1 \div >7700 \text{ m}^3/\text{h}$
- 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%.

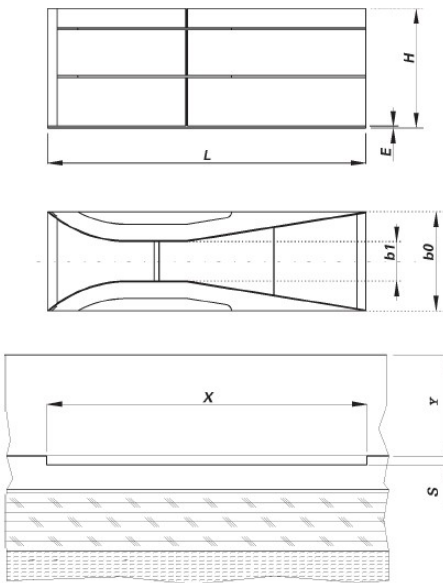


Fig. 1

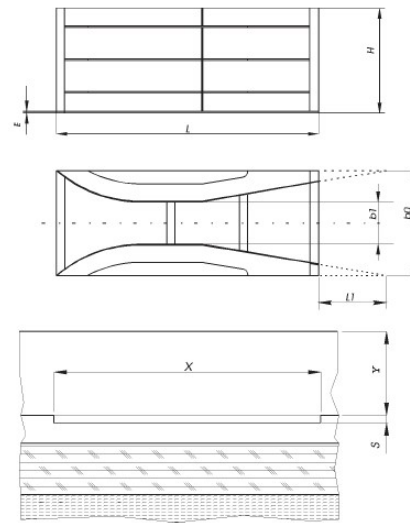


Fig. 2

**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)

Quota Modello	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	
150	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, Altezza 0,27m
200	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; Altezza 0,24m
300	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; Altezza 0,36m
400	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; Altezza 0,48m
500	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; Altezza 0,60m
600	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; Altezza 0,72m
800	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; Altezza 0,90m
101	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; Altezza 1m
Construction materials	
<b>P</b>	Polypropilene (PP)
<b>Z</b>	Special
Accessories	
<b>A</b>	None
<b>Z</b>	Special

## FLOWMETER

- Compact system suitable to be installed upstream from hydraulic modelers (weirs, venturi, palmer bowlus)
- Excellent price-performance ratio
- Instantaneous and totalized flow measurement
- N. 2 freely programmable relays
- MODBUS communication protocol
- IP67
- Sensor material PP



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 FEATURES

#### Housing/sensor material

PC or AI / 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

-30 ÷ +70°C; +80°C non-continuous

#### Pressure

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

#### Power supply

12Vdc / 24Vdc

#### 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 ÷ 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

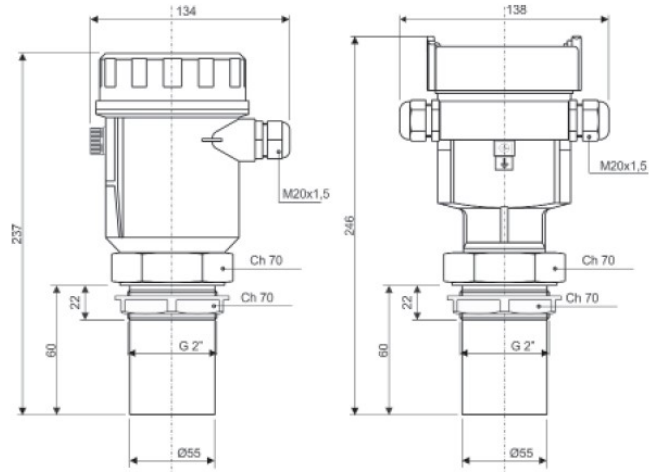
4 buttons or via MODBUS

#### 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  
 MODBUS RTU output. Housing with anticondensation 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	24Vdc (20+30Vdc)
5	12Vdc (max 20Vdc)
9	Special
Accessories	
A	None
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 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 communication protocol
- IP68



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 or VLW601 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 FEATURES

**Housing material**  
PP

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

**Protection degree**  
IP68

**Electrical connection**  
IP68 male connector with 5/10/15/20m linking cable

**Working temperature**  
-25 ÷ +75°C

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

**Power supply**  
24Vdc

**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

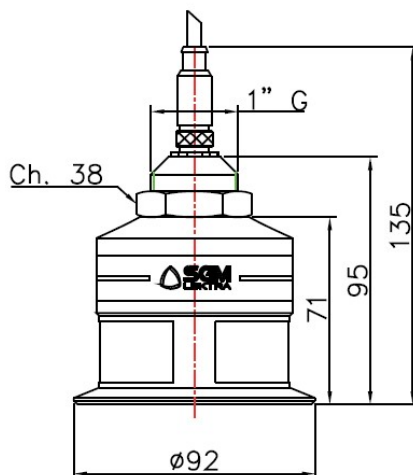
**Resolution**  
1mm

**Calibration**  
VLW601 prog. module with 4 buttons; MODBUS

**Warm-up**  
30 minutes

**Display**  
LCDdisplay on VLW601 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; IP68 proof - Housing in polypropylene (PP)  
 Power supply 24Vdc  
 Calibration by VLW601 or via MODBUS RTU  
 Temperature range -25 ÷ +75°C

Version	
<b>E</b>	With SS316 male connector
<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>T</b>	IP68 female connector with 5m linking cable
<b>U</b>	IP68 female connector with 10m linking cable
<b>V</b>	IP68 female connector with 15m linking cable
<b>W</b>	IP68 female connector with 20m linking cable
<b>Z</b>	Special

# PTU50

- Ultrasonic level transmitter
- Range 0.05 ÷ 1.5 meters
- Blind zone 5 cm
- IP68
- Suitable for measuring of liquids
- Comm. Protocol MODBUS RTU
- 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 / 51 / 56. 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 VLW601 display unit VLW601. The IP68 transmitter protection allows installation in underground wells.

## TECHNICAL FEATURES

**Housing material**  
PP

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

**Protection degree**  
IP68

**Electrical connection**  
IP68 male connector with 5/10/15/20m linking cable

**Working temperature**  
-25 ÷ +75°C

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

**Power supply**  
24Vdc

**Power consumption**  
1.5W

**Analog output**  
4÷20mA max 750ohm

**Digital communication**  
MODBUS RTU

**Range**  
0.05÷1.5m

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

**Temperature compensation**  
digital in the working temperature

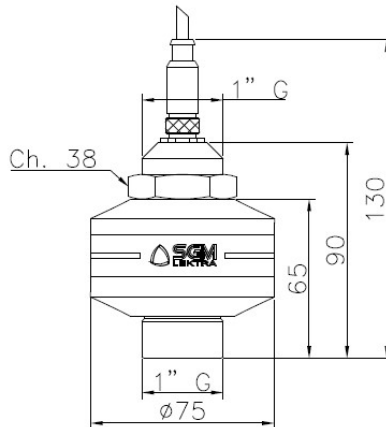
**Accuracy**  
±0,2% (of the measured distance) not better than ±3mm

**Resolution**  
1mm

**Calibration**  
VLW601 prog. module with 4 buttons or by MODBUS

**Warm-up**  
30 minutes

**Display**  
matrix LCDdisplay on VLW601 module (opt.)



**PTU50** Level transmitter

Ultrasonic - for measurement in liquids, muds and acids;  
 Range: 0,05 + 1,5m; IP68 proof  
 Housing in polypropylene (PP)  
 Calibration by VLW601 / VLW90M units or via MODBUS  
 Power supply 24Vdc - Output 4+20mA + MODBUS  
 Temperature range -25 + +75°C

Version	
<b>E</b>	With SS316 male connector
<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>L</b>	Adjustable extension for PTU5x in PP + DN100 flange (Lmin= 85mm Lmax=690mm)
<b>T</b>	IP68 female connector with 5m linking cable
<b>U</b>	IP68 female connector with 10m linking cable
<b>V</b>	IP68 female connector with 15m linking cable
<b>W</b>	IP68 female connector with 20m linking cable
<b>Z</b>	Special

## PTU51

- Ultrasonic level transmitter
- Range 0.3 ÷ 6 meters
- Blind zone 30 cm
- IP68
- Suitable for measuring of liquids
- Comm. Protocol MODBUS/ BLUETOOTH
- 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 / 51 / 56. 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 VLW601 display unit VLW601. The IP68 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 subsequents. 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 FEATURES

**Housing material**  
PP

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

**Protection degree**  
IP68

**Electrical connection**  
IP68 male connector with 5/10/15/20m linking cable

**Working temperature**  
-25 ÷ +75°C

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

**Power supply**  
24Vdc

**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

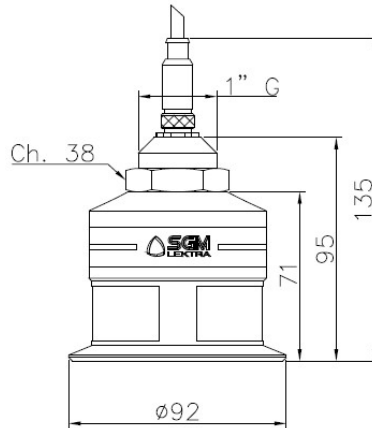
**Accuracy**  
±0,2% (of the measured distance) not better than ±3mm

**Resolution**  
1mm

**Calibration**  
VLW601 prog. module with 4 buttons; MODBUS; or via smartphone

**Warm-up**  
30 minutes

**Display**  
LCDdisplay on VLW601 module (opt.); Android App



**PTU51**

**Level transmitter**

Ultrasonic - for measurement in liquids, muds, acids and granulates.

Range: 0,3 ÷ 6m; IP68 proof

Housing in polypropylene (PP)

Calibration by VLW601 / VLW90M units, via MODBUS or via BLUETOOTH with Android APP

Power supply 24Vdc - Output 4+mA + MODBUS

Temperature range -25 ÷ +75°C

Version	
<b>B</b>	With SS316 male connector + BLUETOOTH
<b>E</b>	With SS316 male connector
<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>L</b>	Adjustable extension in PP + DN100 flange (Lmin= 85mm Lmax=690mm)
<b>T</b>	IP68 female connector with 5m linking cable
<b>U</b>	IP68 female connector with 10m linking cable
<b>V</b>	IP68 female connector with 15m linking cable
<b>W</b>	IP68 female connector with 20m linking cable
<b>Z</b>	Special

## VLW90M

- 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
- 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



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, MTU, METER, MTU5 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 analysis of the flow rate timing in open channel applications.

### TECHNICAL FEATURES

**Housing material**

ABS

**Mechanical installation**

Wall, pipe or DIN rail mountin

**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÷230Vac; 24Vdc/Vac

**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**

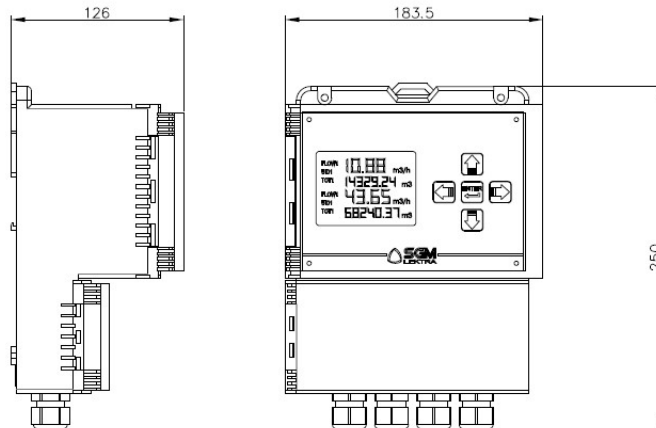
MODBUS RTU

**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 PTU5x, METER (4 wires), MTU5 and KTU5 ultrasonic sensors  
 Matrix 320 x 240 backlit color LCD display  
 USB port for pen drive connection (logger)  
 Wall or DIN rail mounting  
 5 calibrating push-buttons  
 IP66 mechanical protection; temperature range : -20 ÷ +60°C

Version	
2	For connection up to Max. 8 PTU5x family sensors
3	Without brand
9	Special
Relay	
C	5 Relays with change over contact (SPDT)
Power supply	
1	85+265Vac 50+60Hz
4	24Vdc/24Vac
Output	
B	n.2 optoisolated 4+20mA + n.2 optoisolated open collector
Field Bus	
1	MODBUS RTU
9	Special
Accessories	
A	None
U	8GB USB Pen Drive for datalogger

## TOTALIZERS

### SLM2X

- 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

- 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	
00	115Vac
10	230Vac
20	24Vac
30	24Vdc
Version	
S206	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	
00	115Vac
10	230Vac
20	24Vac
30	24Vdc
Version	
S206	N.2 Display, 8 digit totalizer, 4 digits instantaneous flow rate
Accessories	
A	None
P	Removable 4 frontal push-buttons for calibration



[INFO@WASYS.NL](mailto:INFO@WASYS.NL)

**WASYS FLOW BROCHURE**