

WASYS

SYSTEM SOLUTION PARTNER



FLOW BROCHURE

WASYS

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; RKmag; RPmagM; RLmag: 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	RKmag	RPmagM	RLmag
Pipe diameter range:	DN10 ÷ DN2000	DN50 ÷ DN150	DN10 ÷ DN250	DN5; DN10; DN15
Measurement field:	0,1 ÷ 110000 m³/h	3 ÷ 600 m³/h	0,1 ÷ 787,5 m³/h	0,04 ÷ 100 l/m
Sensor material:	SS321	ABS	SS321	SS 316L
Lining material:	PTFE DN10 ÷ DN500 RUBBER DN65-DN2000	ABS	PTFE DN10 ÷ DN250 RUBBER DN65-DN250	PEEK
Housing material:	Flange DIN (UNI 1092-1); Flange ANSI	Flange DIN (UNI 1092-1)	Flange DIN (UNI 1092-1); Flange ANSI	threaded
Electrodes material:	aluminum	aluminum	aluminum	SS 316L
Process temperature, remote version:	SS316L; Hastelloy C; titanium; tantalum; platinum	SS316L; Hastelloy C; titanium; tantalum	SS316L; Hastelloy C; titanium; tantalum; platinum	SS 316L
Process temperature, compact version:	RUBBER -40 ÷ +80°C; PTFE -40 ÷ +150°C	-20 ÷ +120°C	RUBBER -40 ÷ +80°C; PTFE -40 ÷ +150°C	-
Accuracy:	RUBBER -40 ÷ +80°C; PTFE -40 ÷ +100°C	-20 ÷ +75°C	RUBBER -40 ÷ +80°C; PTFE -40 ÷ +100°C	-20 ÷ +70°C
Repeatability:	±0,5% / ±0,2%	±0,5% / ±0,2%	Class II (MID certificate)	±0,8%
Analog output:	4÷20 mA; max. load 750 Ohm	4÷20 mA; max. load 750 Ohm	4÷20 mA; max. load 750 Ohm	4÷20 mA; 0÷20 mA
Analog input:	n° 2 , 4÷20 mA configurable	n° 2 , 4÷20 mA configurable	n° 2 , 4÷20 mA configurable	-
Protocollo di comunicazione:	HART / MODBUS / BLUETOOTH	HART / MODBUS / BLUETOOTH	MODBUS	-
Pulse output:	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
Alarm output:	n° 2, relays, 3A 230Vac N.O.	n° 2, relays, 3A 230Vac N.O.	n° 2, relays, 3A 230Vac N.O.	PNP / NPN
Datalogger	USB Pen Drive	USB Pen Drive	-	-
Display:	extractable module VL701 with O-LED display	extractable module VL701 with O-LED display	extractable module VL701 with O-LED display	TFT color display
Power supply:	85÷265 Vac; 12 Vdc; 24 Vdc; 24Vac	85÷265 Vac; 12 Vdc; 24 Vdc; 24Vac	85÷265 Vac; 12 Vdc; 24 Vdc; 24Vac	19÷0 Vdc

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 electromagnetic flowmeter

Flow measurement for conductive and chemically aggressive liquids

Dn from 10 to 2000 mm

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

Neoprene / PTFE coatings

Power supply 85 ÷ 265 Vac; 12Vdc;

24 Vdc / Vac

Datalogger on USB pendrive

Removable O-LED display module

Remote control via Smartphone



RPMag flowmeter is suitable for all of applications into "industrial process". Various materials for lining are available as well as electrodes made of tantalum, hastelloy c, titanium. Most common communication systems such as Modbus, 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 analisys 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

<0,1m³/h ÷ >110000m³/h

Accuracy

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

Repeatability

$\pm 0,1\%$

Fluid conductivity

>5µS/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

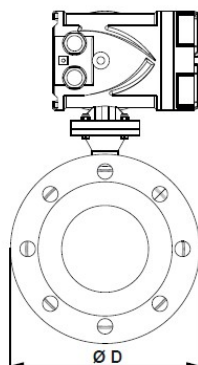
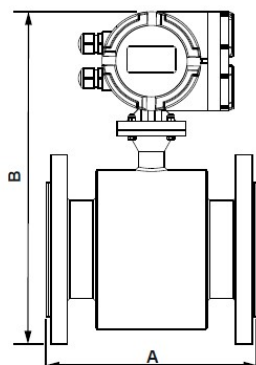
IP67

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	
E	Remote - accuracy 0,2% up to DN250 (fm DN300 on 0,3%) - standard cable length 5m (over 5m, price each additional meter)
F	Remote - accuracy 0,5% - standard cable length 5m (over 5m, price each additional meter)
W	Compact - accuracy 0,2% up to DN250 (fm DN300 on 0,3%) - max temperature of the fluid 100°C
Y	Compact - accuracy 0,5% - max temperature of the fluid 100°C
B	Remote - acc. 0,2% up to DN250 (fm DN300 on 0,3%) - Data logger - n.2 4+20mA input - std cable length 5m (over 5m, price each additional meter)
C	Remote - acc. 0,5% - Data logger - n.2 4+20mA input - std cable length 5m (over 5m, price each additional meter)
L	Compact - acc. 0,2% up to DN250 (fm DN300 on 0,3%) - max temperature of the fluid 100°C - Data logger - n.2 4+20mA input
N	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); 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

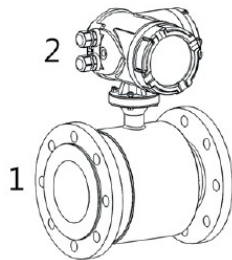
0	None
1	316SS or Hastelloy C grounding rings for plastic pipe installation (price on request)
2	Protective rings against inner lining abrasion (price on request)
3	3rd electrode - price on request

Output

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)

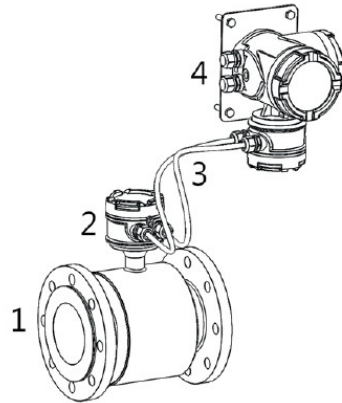
Pipe protection degree

1	IP67
2	IP68 (only for remote version)



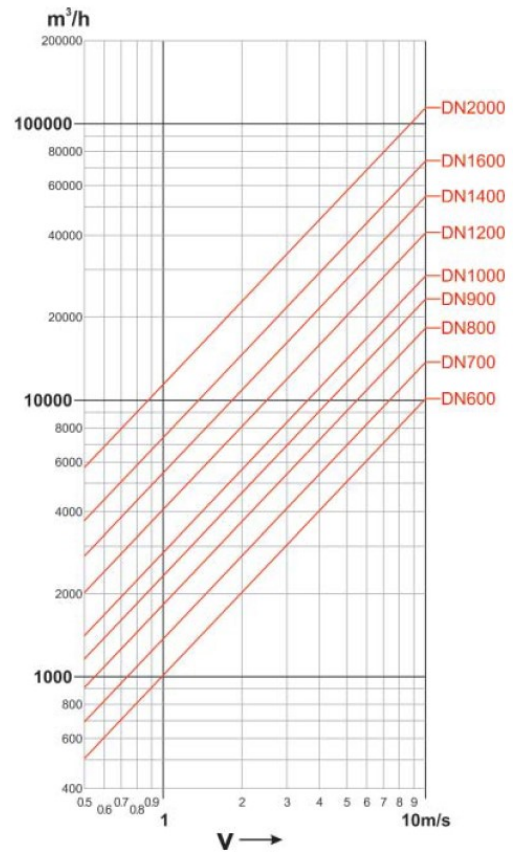
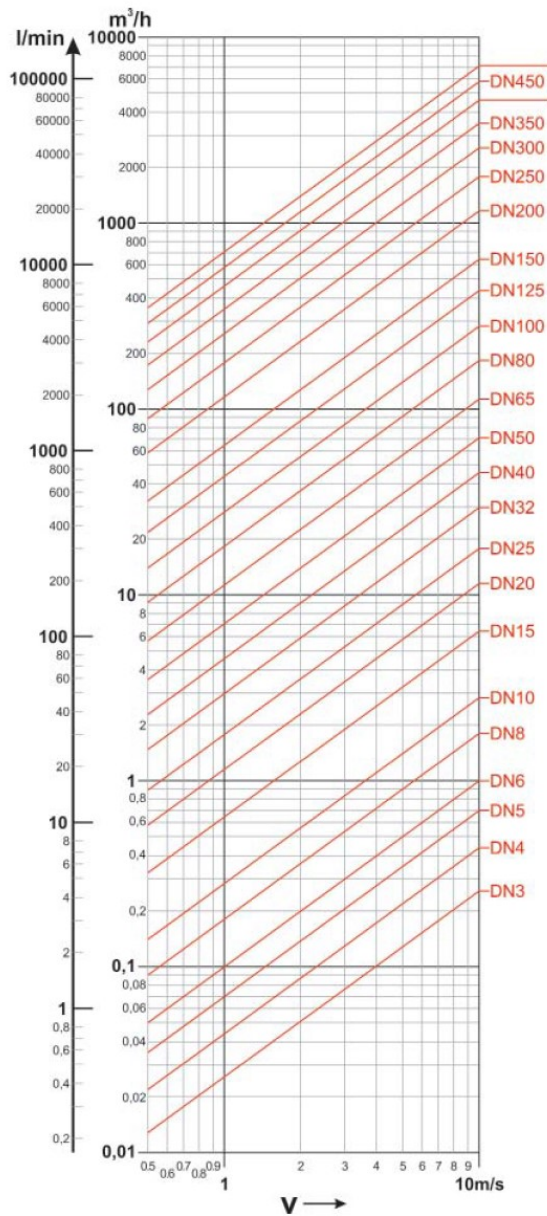
COMPACT VERSION

- 1. Sensor
- 2. Converter



REMOTE VERSION

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



RKMAG electromagnetic flowmeter

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

Dn 50 ÷ 150 mm

Accuracy: $\pm 0.5\%$

ABS sensor and lining

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

<3m³/h ÷ >600m³/h

Accuracy

$\pm 0.5\%$ standard; $\pm 0.2\%$ optional

Repeatability

$\pm 0.1\%$

Fluid conductivity

>5µS/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÷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

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

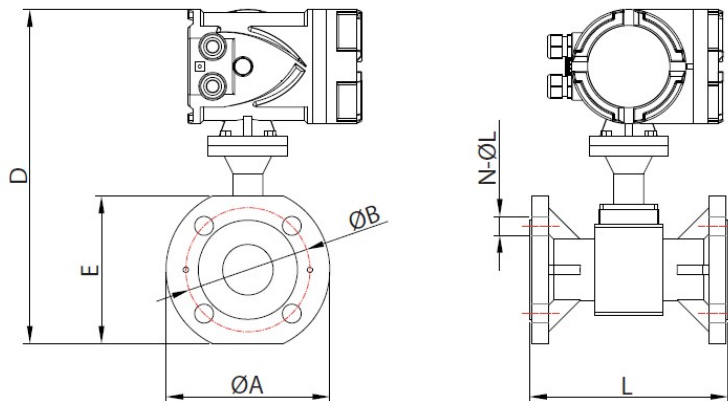
IP67

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	Remote - acc. 0,2% - std cable length 5m - Data logger - n.2 4+20mA input (over 5m, price each additional meter)
C	Remote - acc. 0,5% - std cable length 5m - Data logger - n.2 4+20mA input (over 5m, price each additional meter)
L	Compact - acc. 0,2% - max temperature of the fluid 100°C - Data logger - n.2 4+20mA input
N	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)	
0050E4	DN50 / 1.6MPa / ABS (-20° + +120°C); range 3 ÷ 66m3/h; standard UNI 1092-1
0080E4	DN80 / 1.6MPa / ABS (-20° + +120°C); range 8,9 ÷ 180m3/h; standard UNI 1092-1
0100E4	DN100 / 1.6MPa / ABS (-20° + +120°C); range 11 ÷ 282m3/h; standard UNI 1092-1
0150E4	DN150 / 1.6MPa / ABS (-20° + +120°C); range 30 ÷ 600m3/h; standard UNI 1092-1
Process connection	
B	DIN (UNI 1092-1) flange
Electrodes material	
1	SS316L Stainless steel
3	Hastelloy C
4	Titanium
5	Tantalum
6	Platinum
Power supply	
A	85+265Vac
B	24Vdc / 24Vac
D	12Vdc
Accessories	
0	None
Output	
B	4+20mA with galvanic separation + pulse + MODBUS RTU + BLUETOOTH
C	>PENDING< 4+20mA with galvanic separation + pulse + HART
E	4+20mA with galvanic separation + pulse + MODBUS RTU
Pipe protection degree	
1	IP67
2	IP68 - only for remote version

RPMAGM

MID certified electromagnetic flowmeter

MID certified flow meter

Dn 10 ÷ 250

Accuracy: class II

RUBBER / PTFE lining

Power supply 85 ÷ 265 Vac o 12; 24 Vac/Vdc

Configuration and displaying via VL701 with 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 ≤200; Q2/Q1=1,6

Accuracy

Class II

Repeatability

±0,1%

Fluid conductivity

>5µS/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

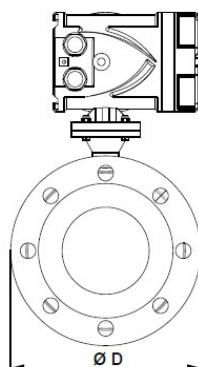
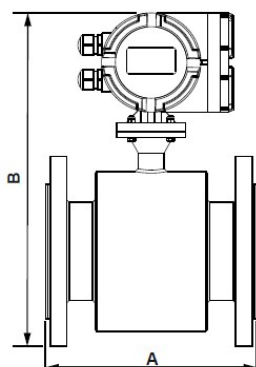
IP67

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

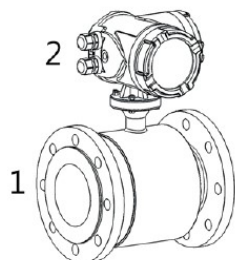
RPmagM

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 waters. Sensor pipe in SS321
Medium ambient temperature range: $+5^{\circ} \div +40^{\circ}\text{C}$
IP67 electronic housing with anticondensation filter
2 alarm relays (min/max)

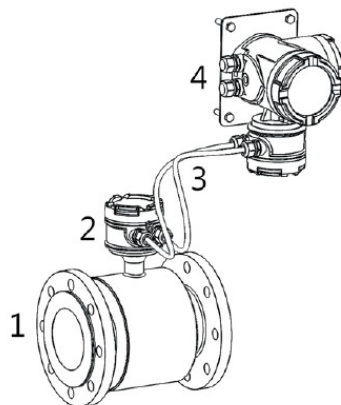
Version	
C	Remote - acc. Class 2 - Temp. Class T50 - cable length 3m - n.2 4+20mA input
N	Compact - acc. Class 2 - Temp. Class T50 - n.2 4+20mA input
DN flange / Max. pressure / Lining (temperature range of the fluid)	
0010E2	DN10 / 1.6MPa / PTFE ($-40^{\circ} \div +150^{\circ}\text{C}$); range 0,0125 ÷ 3,125m ³ /h; standard UNI 1092-1
0015E2	DN15 / 1.6MPa / PTFE ($-40^{\circ} \div +150^{\circ}\text{C}$); range 0,0315 ÷ 7,875m ³ /h; standard UNI 1092-1
0020E2	DN20 / 1.6MPa / PTFE ($-40^{\circ} \div +150^{\circ}\text{C}$); range 0,05 ÷ 12,5m ³ /h; standard UNI 1092-1
0025E2	DN25 / 1.6MPa / PTFE ($-40^{\circ} \div +150^{\circ}\text{C}$); range 0,08 ÷ 20m ³ /h; standard UNI 1092-1
0032E2	DN32 / 1.6MPa / PTFE ($-40^{\circ} \div +150^{\circ}\text{C}$); range 0,125 ÷ 31,25m ³ /h; UNI 1092-1 standard
0040E2	DN40 / 1.6MPa / PTFE ($-40^{\circ} \div +150^{\circ}\text{C}$); range 0,2 ÷ 50m ³ /h; standard UNI 1092-1
0050E2	DN50 / 1.6MPa / PTFE ($-40^{\circ} \div +150^{\circ}\text{C}$); range 3 ÷ 66m ³ /h; standard UNI 1092-1
0065E1	DN65 / 1.6MPa / Neoprene ($-10^{\circ} \div +80^{\circ}\text{C}$); range 0,315 ÷ 78,75m ³ /h; standard UNI 1092-1
0065E2	DN65 / 1.6MPa / PTFE ($-40^{\circ} \div +150^{\circ}\text{C}$); range 0,315 ÷ 78,75m ³ /h; standard UNI 1092-1
0080E1	DN80 / 1.6MPa / Neoprene ($-10^{\circ} \div +80^{\circ}\text{C}$); range 0,8 ÷ 200m ³ /h; standard UNI 1092-1
0080E2	DN80 / 1.6MPa / PTFE ($-40^{\circ} \div +150^{\circ}\text{C}$); range 0,8 ÷ 200m ³ /h; standard UNI 1092-1
0100E1	DN100 / 1.6MPa / Neoprene ($-10^{\circ} \div +80^{\circ}\text{C}$); range 1,25 ÷ 312,5m ³ /h; standard UNI 1092-1
0100E2	DN100 / 1.6MPa / PTFE ($-40^{\circ} \div +150^{\circ}\text{C}$); range 1,25 ÷ 312,5m ³ /h; standard UNI 1092-1
0125E1	DN125 / 1.6MPa / Neoprene ($-10^{\circ} \div +80^{\circ}\text{C}$); range 1,25 ÷ 312,5m ³ /h; standard UNI 1092-1
0125E2	DN125 / 1.6MPa / PTFE ($-40^{\circ} \div +150^{\circ}\text{C}$); range 1,25 ÷ 312,5m ³ /h; standard UNI 1092-1
0150E1	DN150 / 1.6MPa / Neoprene ($-10^{\circ} \div +80^{\circ}\text{C}$); range 2 ÷ 500m ³ /h; standard UNI 1092-1
0150E2	DN150 / 1.6MPa / PTFE ($-40^{\circ} \div +150^{\circ}\text{C}$); range 30 ÷ 600m ³ /h; standard UNI 1092-1
0200E1	DN200 / 1.6MPa / Neoprene ($-10^{\circ} \div +80^{\circ}\text{C}$); range 3,15 ÷ 787,5m ³ /h; standard UNI 1092-1
0200E2	DN200 / 1.6MPa / PTFE ($-40^{\circ} \div +150^{\circ}\text{C}$); range 3,15 ÷ 787,5m ³ /h; standard UNI 1092-1
0250E1	DN250 / 1.6MPa / Neoprene ($-10^{\circ} \div +80^{\circ}\text{C}$); range 3,15 ÷ 787,5m ³ /h; standard UNI 1092-1
0250E2	DN250 / 1.6MPa / PTFE ($-40^{\circ} \div +150^{\circ}\text{C}$); range 3,15 ÷ 787,5m ³ /h; standard UNI 1092-1
Process connection	
B	DIN flange (UNI 1092-1)
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 / 24Vac
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	
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



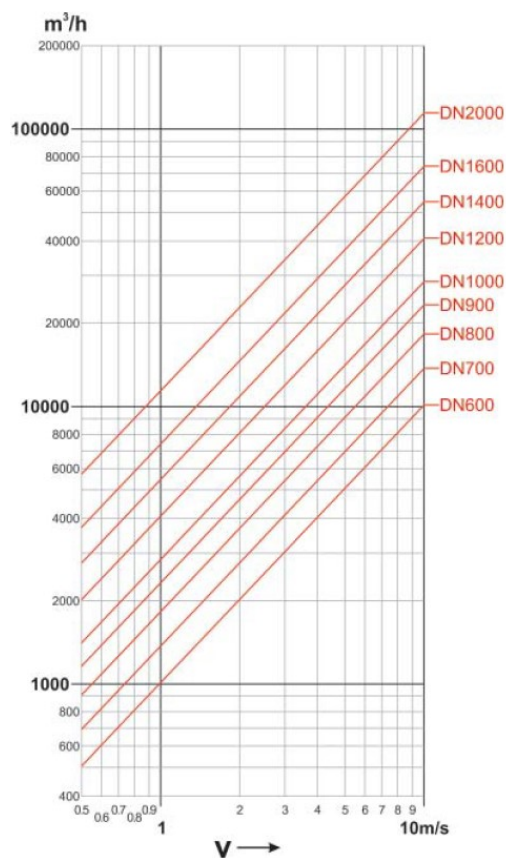
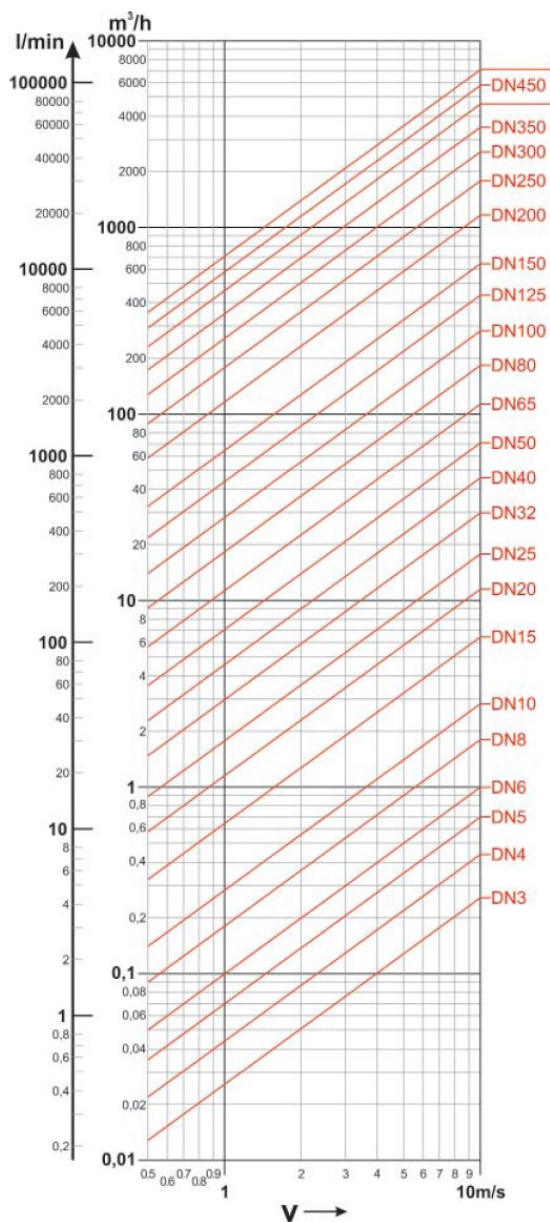
COMPACT VERSION

- 1. Sensor
- 2. Converter



REMOTE VERSION

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



RLMAG

electromagnetic flowmeter

Flow rate and temperature measurement

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

Measuring body totally in AISI 316L

Internal coating in PEEK

Fully configurable measurement, monitoring and dosing functions

Bidirectional measurement

Max pressure 16bar; max. temperature 70 ° C

Threaded process connections

Color display with 90 ° rotation display



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

TECHNICAL FEATURES

Range of flow

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

Process Connection / Internal Dimension

G 1/2" / 5mm

G 3/4" / 10mm

G 1" / 15mm

Internal lining material

PEEK

Sensor body material

AISI 316L

Electrode material

AISI 316L

Measuring range

0.04l / m to 100l / m

Accuracy

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

Repeatability

$\pm 0.2\%$ of full scale

Supply voltage

19 ÷ 30Vdc

Consumption

Max. 200mA

Temperature range

Process temperature: -20 ÷ + 70 ° C

Ambient temperature: -20 ÷ + 60 °

Output signals

max N.2 outgoing connections configurable separately as:

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

Configurable pulse output

Output frequency max 1000Hz (2000Hz alarm overflow)

PNP alarm output, or configurable NPN; max 30Vdc 200mA

Control input max 30Vdc

Dosing control output for START-STOP-RESET measurable

Electrical connection

4-pin M12x1 connector

Reverse flow

Instant measurement and total reverse flow

Flow measurement simulation

Various flow measurement simulation modes are available

Range cutoff

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

Relative humidity

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

Response time for alarm outputs (integration)

Adjustable between 0 and 6 seconds

Protection

IP67

Rimag

Electromagnetic flowmeter

For conductive fluids ($>20\mu\text{S}$) - Sensor body in SS316L
 Ambient temperature $-20^{\circ} + +60^{\circ}\text{C}$
 Protection IP67 - 2 configurable outputs
 TFT color display 1.4" with $\pm 90^{\circ}$ rotation
 Dosing, measuring and monitoring functions
 Supplied with 5m pre-wired cable + female connector

Version	
Y	Compact - accuracy $\pm 0,8\%$ - Max temperature of the fluid $+70^{\circ}\text{C}$
Threaded connection / DN sensor pipe / Max. pressure / Lining (temperature range)	
0005E5	G 1/2" / DN05 / 1,6MPa / PEEK ($-20^{\circ} + +70^{\circ}\text{C}$) - Range 0,04 ÷ 10 l/m
0010E5	G 3/4" / DN10 / 1,6MPa / PEEK ($-20^{\circ} + +70^{\circ}\text{C}$) - Range 0,2 ÷ 50 l/m
0015E5	G 1" / DN15 / 1,6MPa / PEEK ($-20^{\circ} + +70^{\circ}\text{C}$) - Range 0,4 ÷ 100 l/m
9999Z9	Special
Process connection	
A	Standard gas threaded
Z	Special
Electrodes material	
1	SS316L
9	Special
Power supply	
B	19÷30Vdc
Accessories	
0	None
9	Special
Output	
A	4÷20mA / Pulse / Frequency / Alarm configurable
Pipe protection degree	
1	IP67

RSMAG electromagnetic flowmeter

Flow measurement for conductive liquids
Dn from 25 to 200 mm
Connections DIN 11851 and CLAMP DIN 32676
Measurement accuracy: $\pm 0.2\%$; $\pm 0.5\%$
PFA coatings
Power supply 85 ÷ 265Vac; 12Vdc; 24Vdc; 24Vac
Datalogger on USB pendrive
Removable O-LED display module
Remote control via Smartphone



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

TECHNICAL 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

PFA DN25 ÷ DN250

Sensor pipe material

SS304

Housing material

epoxy painted aluminum

Electrodes material

SS316L - Hastelloy C - Titanio - Tantalio

Measure range

<0,1m3/h ÷ >600m3/h

Accuracy

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

Repeatability

$\pm 0,1\%$

Fluid conductivity

>5µS/cm

Power supply

85÷265Vac, 24Vdc, 12Vdc.

Consumption

6W, max. 8W.

Temperature range

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

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÷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

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

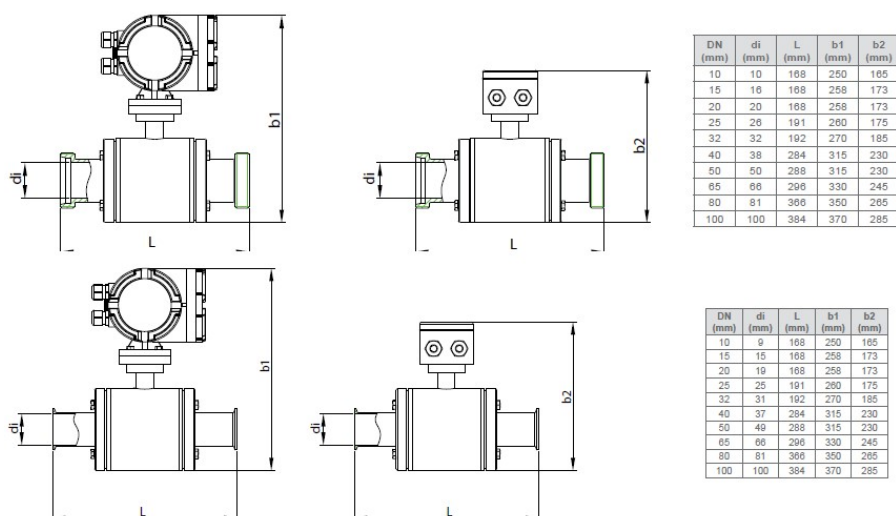
IP67

Remote version IP rating

sensor IP67 / IP68 (by request) - converter IP67

Anti-condensation filter

Anti-condensation filter installed on converter



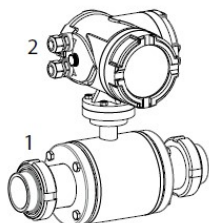
Rsmag

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 osmotic filter
 2 alarm relays (min/max)

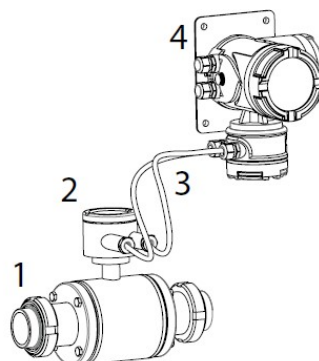
Version	
E	Remote - accuracy 0,2% - standard cable length 5m (over 5m, price each additional meter)
F	Remote - accuracy 0,5% - standard cable length 5m (over 5m, price each additional meter)
W	Compact - accuracy 0,2% - max temperature of the fluid 100°C
Y	Compact - accuracy 0,5% - max temperature of the fluid 100°C
B	Remote - acc. 0,2% - Data logger - n.2 4+20mA input - standard cable length 5m (over 5m, price each additional meter)
C	Remote - acc. 0,5% - Data logger - n.2 4+20mA input - standard cable length 5m (over 5m, price each additional meter)
L	Compact - acc. 0,2% - max temperature of the fluid 100°C - Data logger - n.2 4+20mA input
N	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)	
0025E2	DN25 / 1.6MPa / PFA (-40° + +150°C); range 0,6 ÷ 18m3/h
0032E2	DN32 / 1.6MPa / PFA (-40° + +150°C); range 1 ÷ 30m3/h
0040E2	DN40 / 1.6MPa / PFA (-40° + +150°C); range 1,8 ÷ 42m3/h
0050E2	DN50 / 1.6MPa / PFA (-40° + +150°C); range 3 ÷ 66m3/h
0065E2	DN65 / 1.6MPa / PFA (-40° + +150°C); range 5,8 ÷ 120m3/h
0080E2	DN80 / 1.6MPa / PFA (-40° + +150°C); range 8,9 ÷ 180m3/h
0100E2	DN100 / 1.6MPa / PFA (-40° + +150°C); range 11 ÷ 282m3/h
0125E2	DN125 / 1.6MPa / PFA (-40° + +150°C); range 20 ÷ 450m3/h
0150E2	DN150 / 1.6MPa / PFA (-40° + +150°C); range 30 ÷ 600m3/h
0200E2	DN200 / 1.6MPa / PFA (-40° + +150°C); range 50 ÷ 1100m3/h
Process connection	
D	DIN 11851
E	SS304 CLAMP DIN 32676
Z	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

Output	
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)



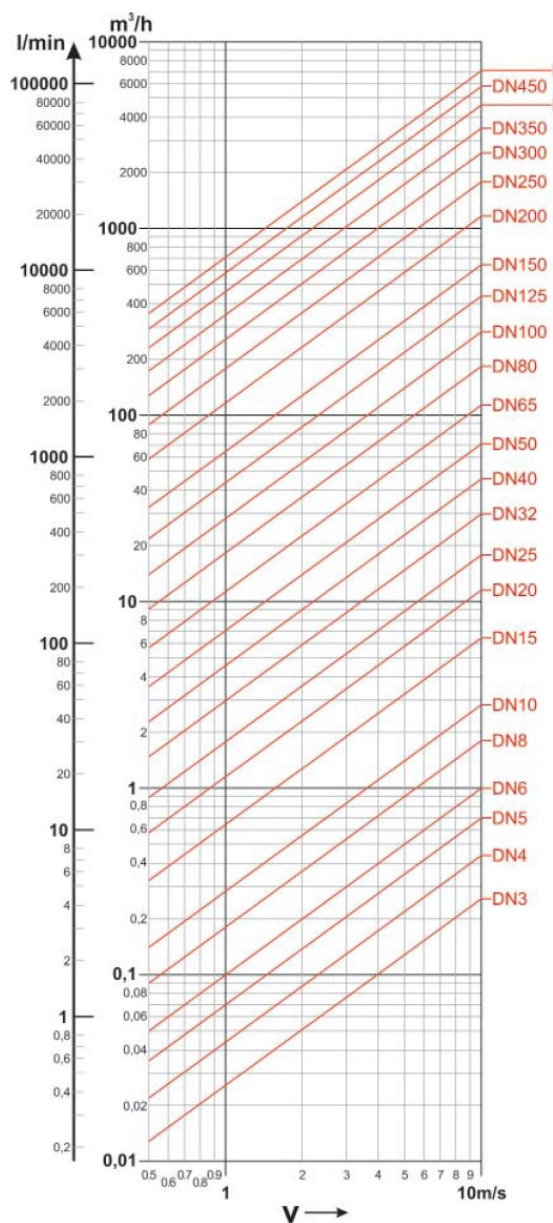
COMPACT VERSION

- 1. Sensor
- 2. Converter



REMOTE VERSION

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



RBMAG

battery powered electromagnetic flow meter

Misura di portata per liquidi conduttivi

Dn da 10 a 1000 mm

Accuratezza della misura: $\pm 0,2\%$; $\pm 0,5\%$

Trasmissione dati wireless (in attesa)

Alimentazione a batteria, autonomia 5 anni



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

<0,1m³/h ÷ >110000m³/h

Accuracy

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

Repeatability

$\pm 0,1\%$

Fluid conductivity

>5 μ 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%Q_{max}. 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

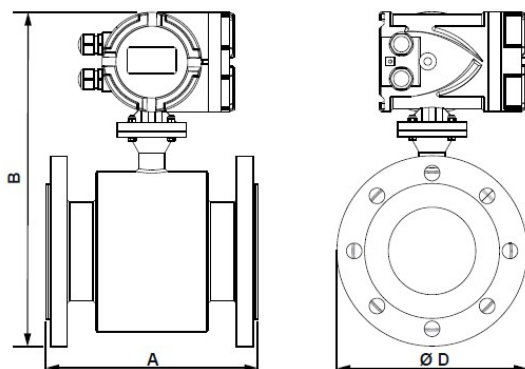
IP67

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	-	-

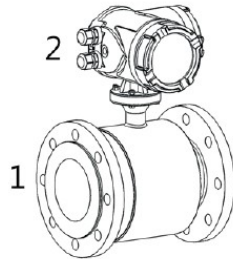
RBMAG

Battery electromagnetic flowmeter

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

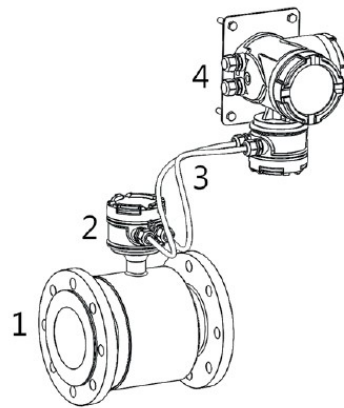
Version	
E	Remote - accuracy 0,2% up to DN250 (fm DN300 on 0,3%) - standard cable length 5m (over 5m, price each additional meter - max 50m)
F	Remote - standard cable length 5m (over 5m, price each additional meter) max 50m)
W	Compact - accuracy 0,2% up to DN250 (fm DN300 on 0,3%) - max temperature of the fluid 100°C
Y	Compact - 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
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	
D	Battery - 5 years life
Accessories	
0	None
1	316SS or Hastelloy C grounding rings for plastic pipe installation (price on request)
3	3rd electrode - price on request
Output	
A	Pulse output
E	Pulse output + MODBUS
Pipe protection degree	
1	IP67
2	IP68 (only for remote version)



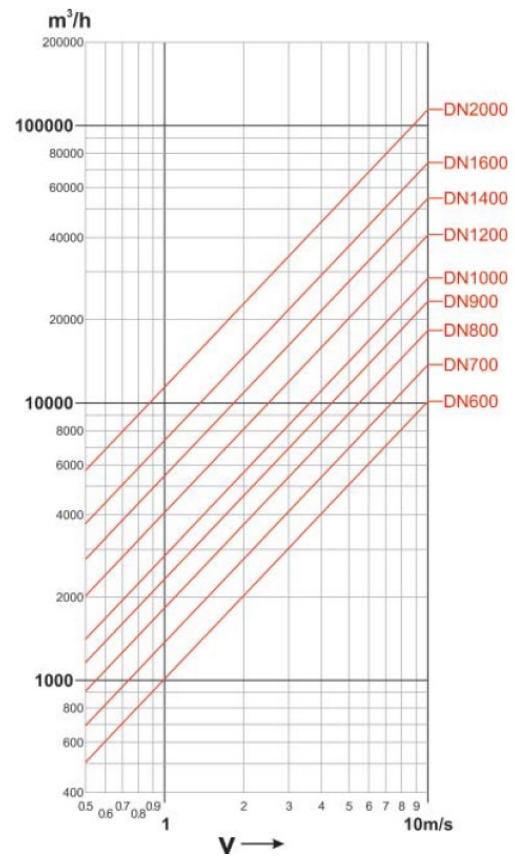
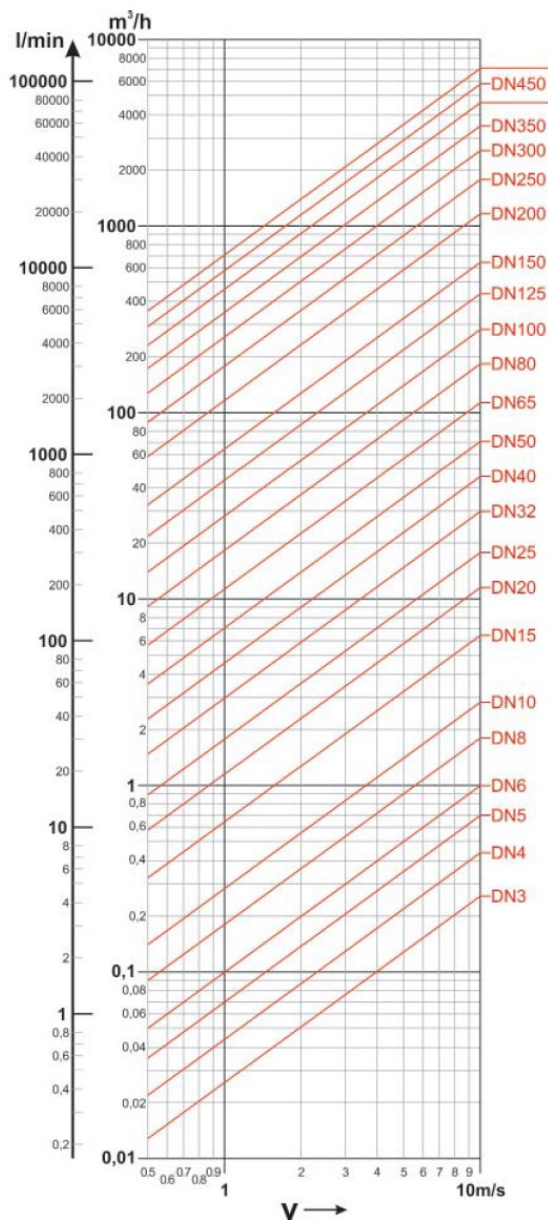
COMPACT VERSION

- 1. Sensor
- 2. Converter



REMOTE VERSION

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



ULTRASONIC TRANSIT TIME

SGM-101F and 200H meters work according to the time difference principle of ultrasound pulses. The big advantage is in the installation, as it is not necessary to cut the pipe.

The sensors are simply wrapped around the outer surface of the tube, which is why pressure and aggressiveness of the liquid being measured is not a problem for the meter.

The system measures bi-directionally and is suitable for clean or moderately dirty liquids.



	SGM-101F
Pipe diameter range	DN20 ÷ DN4000
Piping material	carbon steel / stainless steel / fiberglass / cast iron / copper / PE / PVC / aluminum
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



	SGM-200H
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

transit time ultrasonic flowmeter

For conductive and non-conductive liquids

Measure range $<0,2\text{m}^3/\text{h} \div >400000 \text{ m}^3/\text{h}$

Accuracy $\pm 1\%$

Clamp on IP68 sensors also for high temperatures

Pipe dimension range:
DN20 ÷ 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 ÷ 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÷20mA o 0÷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÷5000Hz

Relay output

n.1 for pulse totalizer or alarm

Medium speed range

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

Unit working temperature

-20÷60°C

Instrument humidity

non condensing 85% RH (40°C)

Transducer working temperature

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

PT100 sensors working temperature

-40°C +160°C

Transducer cable std. length

5mt

PT100 sensor cable std. length

15mt

Power Supply

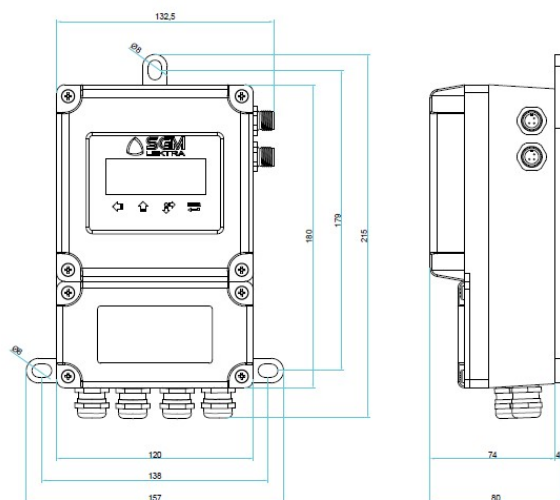
230Vac o 10÷30Vdc (depending on model)

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

SGM-200H

transit time ultrasonic flowmeter

Handheld system for conductive and non-conductive fluids, even with the suspended material presence (<10g/l; <Ø1mm)

Measure range <0,2m³/h ÷ >400000m³/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 ± 20 m/s. Simultaneous display of flowrate and cumulative volume data
 Accuracy: not better $\pm 1\%$
 Ambient temperature: $-20^{\circ} + 60^{\circ}\text{C}$ - 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	
A0--	None
TS-2	Couple of transducers for pipes from DN20 to DN100 ($-40^{\circ}+90^{\circ}\text{C}$) + 2 fast clamp belts (590A011A)
TS2H	Couple of high temperature transducers for pipes from DN20 to DN100 ($-40^{\circ}+160^{\circ}\text{C}$) + steel hose clamps (590A010A)
TM-1	Couple of transducers for pipes from DN50 to DN700 ($-40^{\circ}+90^{\circ}\text{C}$) + 2 ratchet belts (590A012A)
TM1H	Couple of high temperature transducers for pipes from DN50 to DN700 ($-40^{\circ}+160^{\circ}\text{C}$) + steel hose clamps (590A010A)
TL-1	Couple of transducers for pipes from DN300 to DN4000 ($-40^{\circ}+90^{\circ}\text{C}$) + 2 ratchet belts (590A012A)
HSNN	Couple of transducers on metric frame for pipes from DN20 to DN100 ($-30^{\circ}+90^{\circ}\text{C}$) + 2 fast clamp belts (590A011A)
HMNN	Couple of transducers on metric frame for pipes from DN50 to DN300 ($-30^{\circ}+90^{\circ}\text{C}$) + 2 ratchet belts (590A012A)
HMEN	Couple of transducers on metric frame for pipes from DN50 to DN700 ($-30^{\circ}+90^{\circ}\text{C}$) + 4 ratchet belts (590A012A)
Accessories	
A	None
D	Grease for high temperature

SGM-100T

ultrasonic thickness gauge

Compact digital thickness gauge
Measuring ranges from 1.2mm to 225mm
Suitable for steel, cast iron, PVC, glass etc.
Measurement 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 backlit; 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

Base	
SGM-100T	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

ULTRASONIC DOPPLER

clamp-on system for flow measurement of liquids containing solids in suspension in pressurized pipelines.
Measure solution suitable for applications with particularly "dirty" liquids in place of transit time ultrasound meters.



	SGM-300F
Pipe diameter range	DN40 ÷ DN4000
Piping material	carbon steel / stainless steel / fiberglass / cast iron / copper / PE / PVC / aluminum
Liquid conductivity	irrelevant
Sensor material	Stainles steel
Housing material	glass fiber
Process temperature	-35 ÷ 85° C
Accuracy	±2%
Analog output	4÷20 mA
Communication port	modbus
Pulse output	impulsive or alarm
Power supply	85 ÷ 265 Vac ; 24 Vdc



	SGM-300P
Pipe diameter range	DN40 ÷ DN4000
Piping material	carbon steel / stainless steel / fiberglass / cast iron / copper / PE / PVC / aluminum
Liquid conductivity	irrelevant
Sensor material	aluminum / Peek
Housing material	glass fiber
Process temperature	-35 ÷ 85° C
Accuracy	±2%
Analog output	4÷20 mA
Communication port	modbus
Pulse output	impulsive or alarm
Power supply	batteria al litio ricaricabile 12Vdc 12Ah autonomia 50 ore

SGM-300F

doppler ultrasonic flowmeter

Suitable for pipes with diameter from 40 to 4000mm

For dirty liquids with suspended solids or with air bubbles

Flow rate range from 0.05m / s to 12m / s

Relay, impulsive and 4 ÷ 20mA alarm outputs

2.0% calibration accuracy



SGM-300F is an ultrasonic doppler flow meter with wall mounting. SGM-300P is designed to measure the flow rates of liquids inside a totally full pipe. The presence of a certain quantity of air bubbles or solids suspended in the liquid is essential for the correct measurement of the flow rate. The Doppler ultrasonic flowmeter can display the value of the instantaneous flow and the volume totalizer, etc. SGM-300F is equipped with 4 ÷ 20mA output signals for the instantaneous, pulsating flow transmission for transmission of the totalizer volume count and transmission relay

TECHNICAL FEATURES

Pipe size range

Ø40 ÷ 4000mm

Speed range

0.05 to 12m / s

Resolution

0.5mm / s

Accuracy

± 2%

Housing material

Glass fiber

Degree of protection

IP66

Keyboard

6 buttons

Display

LCD

Electrical connection

Removable connectors

Working temperature

-20 ÷ + 60 ° C

Supply

85 ÷ 265Vac or 24Vdc

Analog output

n.1 4 ÷ 20mA

Relay output

Impulsive or alarm

Digital communication

MODBUS RTU

dimensions

244mm x 196mm x 144mm (HxWxD)

Transducers type

Clamp ON

Transducer protection

IP68

Transducer temperature range

Std. -35 ° ÷ + 85 ° C

Transducer dimensions

60 x 34 x 32mm (HxWxD)

Cable

10m std.

Transducer body material

AISI

SGM-300F Doppler ultrasonic flowmeter

For liquids with suspended solids or air bubbles
 Speed range 0,05 ÷ 12m/s - Pipe diameter range: 40 ÷ 4000mm
 Accuracy ±2% - Ambient temperature max 60°C
 Protection degrees: transmitter IP66 - transducers IP68

Power supply	
1	85÷265Vac
2	24Vdc
Output 1	
A	None
B	4÷20mA
C	Open collector
E	Relay
Output 2	
0	None
1	4÷20mA
2	Open collector
3	Relay
Transducers	
A	None
B	Standard (-35°÷ 85°C)
Transducers cables length	
1	10m
9	Special (max 300m)

SGM-300P

doppler ultrasonic flowmeter

Suitable for pipes with diameter from 40 to 4000mm

For dirty liquids with suspended solids or with air bubbles

Flow rate range from 0.05m / s to 12m / s

Relay, impulsive and 4 ÷ 20mA alarm outputs

2.0% calibration accuracy

Battery life 50 hours



SGM-300P is an ultrasonic doppler flow meter with a battery that allows an autonomy of use up to 50 hours. SGM-300P is designed to measure the flow rates of liquids inside a totally full pipe. The presence of a certain quantity of air bubbles or solids suspended in the liquid is essential for the correct measurement of the flow rate. The Doppler ultrasonic flowmeter can display the value of the instantaneous flow and the volume totalizer, etc. SGM-300P is equipped with 4 ÷ 20mA output signals for the instantaneous, pulsating flow transmission for transmission of the totalizer volume count and transmission relay

TECHNICAL FEATURES

Tubes size range

Ø40 ÷ 4000

Speed range

0.05 to 12m / s

Resolution

0.5mm / s

Accuracy

± 2%

Housing material

Glass fiber

Degree of protection

IP65

Keyboard

6 buttons

Display

LCD

Electrical connection

Removable connectors

Working temperature

-20 ÷ + 60 ° C

Supply

Rechargeable 12Vdc 12Ah lithium batteries, 50h autonomy

Battery charger 85 ÷ 265Vac, 50Hz, 200mA

Analog output

n.1 4 ÷ 20mA

Relay output

Impulsive or alarm

dimensions

244mm x 196mm x 144mm (HxWxD)

Transducers type

Clamp ON

Transducer protection

IP68

Transducer temperature range

Std. -35 ° ÷ 85 ° C

Transducer dimensions

60 x 34 x 32mm (HxWxD)

Cable

5m std.

Transducer body material

aluminum

SGM-300P Portable Doppler ultrasonic flowmeter

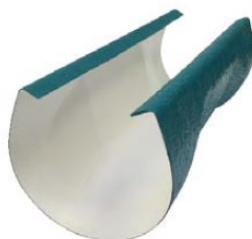
For liquids with suspended solids or air bubbles
 Speed range 0,05 ÷ 12m/s - Pipe diameter range: 40 ÷ 4000mm
 Accuracy ±2% - Ambient temperature max 60°C
 Protection degrees: transmitter IP65 - transducers IP68

Power supply	
1	85÷265Vac (battery charger)
Output 1	
A	None
B	4÷20mA
C	Open collector
Output 2	
0	None
1	4÷20mA
2	Open collector
Transducers	
A	None
B	Standard (-35°÷ 85°C)
Transducers cables length	
1	5m
9	Special (max 300m)

OPEN CHANNEL HYDRAULIC JUMP

The flow measurement in open channels with the hydraulic relief method is carried out with the use, inside the channel or partially filled pipe, of a hydraulic modeller, a probe for measuring the level (in this case ultrasound, without contact with the liquid itself) and an associated control unit for the conversion of the level in the corresponding instantaneous flow.

Thanks to the ever-increasing integration of the systems, a compact ultrasonic probe has been created that incorporates both the measurement of the hydraulic level and the conversion into its instantaneous flow rate.



	PB - Palmer Bowlus	BS - Venturi Flumes
Material:	Fiberglass	PP
Pepe/Channel dimension:	DN100 ÷ 800	150 ÷ 1200 mm
Flow min/max	0,4 ÷ 1800 m³/h	1 ÷ > 7700 m³/h



	FLOWMETER	FLOW51	CA400
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

CA400

complete system for flow measurement

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



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

TECHNICAL FEATURES

V LW90M housing material

ABS

PTU sensor material

Polypropylene (PP)

Degree of protection VLW90M

IP66

Sensor protection degree

IP68

VLW90M electrical connection

Terminal Blocks

Electrical connection sensors

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

Working temperature

-25 ÷ + 75 ° C

VLW90M power supply

85 ÷ 230VAC; 24 Vdc / Vac

Absorbed power

Max. 10W

Keyboard

5 buttons

Display

320x240 color LCD backlit matrix

Analog output

n.2 4 ÷ 20mA configurable; isolated

Output relay

5 relays (5A 250Vac) configurable

Digital outputs

2 open collectors (max 24Vdc 50mA)

Analog inputs

n.2 4 ÷ 20mA

Digital inputs

n.2 (max 24Vdc 10mA)

Digital communication

MODBUS RTU

Datalogger

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

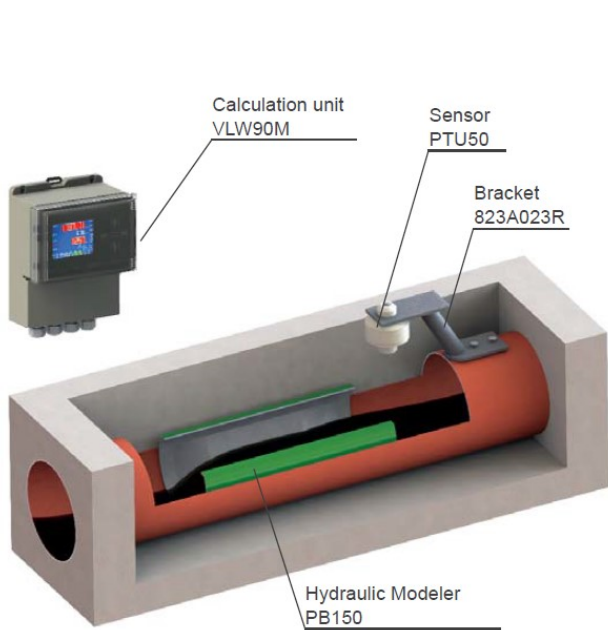
CA400

System for measurement of flow in open channels

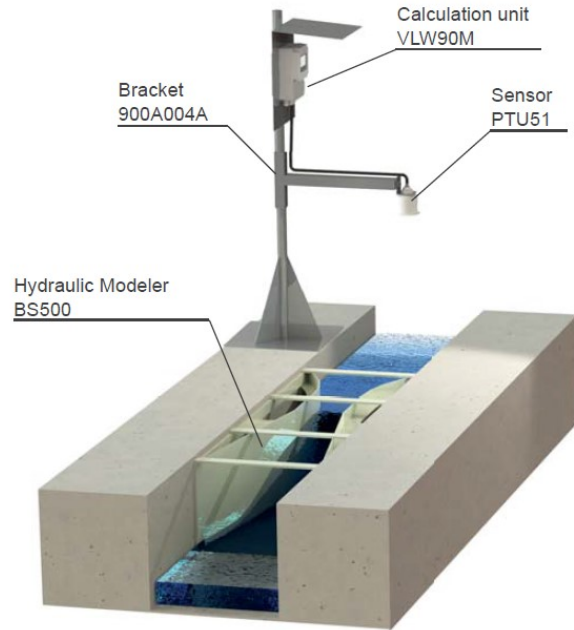
Measurement of flow by hydraulic jump - Venturi and standard weirs
 Primary devices for rectangular channels (BS) and partially filled pipes (PB).
 Up to 2 simultaneous measurements of flow with different devices.
 Backlit color LCD display - 5 push buttons for calibration
 USB port for pen drive (datalogger) - MODBUS RTU communication
 Nr. 2 4+20mA optoisolated outputs + nr. 2 optoisolated open collectors
 Wall or DIN rail mounting - IP 66 (control unit) - -20 ÷ +60°C
 IP68 proof (sensors)

Sensor type	
0	PTU50 - 0,05 ÷ 1,5m - temperature range -25 ÷ +75°C (to be used only with PB100/200/300/400/500 and BS150/200/300)
1	PTU51 - 0,3 ÷ 6m - temperature range -25 ÷ +75°C
9	Special
Sensor connection	
E	With SS316 male connector
P	With plastic (PA) male connector
Z	Special
Cable length	
M	5m cable with IP68 female connector in plastic (PA)
T	5m cable with IP68 female connector in SS316
U	10m cable with IP68 female connector in SS316
V	15m cable with IP68 female connector in SS316
W	20m cable with IP68 female connector in SS316
Z	Special
Power supply	
A	85+265Vac 50+60Hz
B	24Vdc/24Vac
Z	Special
Primary device	
AA000	None
PB100	DN100 (4"); range 0,45÷ 8m ³ /h (max. 8,9m ³ /h)
PB150	DN150 (6"); range 0,68÷21m ³ /h (max. 22m ³ /h)
PB200	DN200 (8") - with 2 spacing bars; range 1,2÷50m ³ /h (max. 52m ³ /h)
PB250	DN250 (10"); range 1,29÷80m ³ /h (max. 82m ³ /h)
PB300	DN300 (12") - with 2 spacing bars; range 2,27÷100m ³ /h (max. 102m ³ /h)
PB400	DN400 (16"); range 2,23÷256m ³ /h (max. 262m ³ /h)
PB500	DN500 (20") - with 3 spacing bars; range 5,34÷490m ³ /h (max.496m ³ /h)
PB600	DN600 (24"); range 10÷700m ³ /h (max.709m ³ /h)
PB700	DN700 (28"); range 15÷1150m ³ /h (max.1177m ³ /h)
PB800	DN800 (32") - with 4 spacing bars; range 18÷1800m ³ /h (max.1841m ³ /h)
BSx00	Coppia di restrizioni laterali per canale Length 2,5m; width 0,3m; height 1,3m
BS150	Qmin=1 m ³ /h - 0,28 l/sec; Qmax=50 m ³ /h - 13,8 l/s Length 0,480m; width 0,15m; height 0,27m
BS200	Qmin=2 m ³ /h - 0,55 l/sec; Qmax=55 m ³ /h - 15,27 l/s Length 0,639m; width 0,2m; height 0,24m
BS300	Qmin=3 m ³ /h - 0,83 l/sec; Qmax=150 m ³ /h - 41,6 l/s Length 0,958m; width 0,3m; height 0,36m
BS400	Qmin=10 m ³ /h - 2,7 l/sec; Qmax=310 m ³ /h - 86,1 l/s Length 1,278m; width 0,4m; height 0,48m
BS500	Qmin=20 m ³ /h - 5,5 l/sec; Qmax=500 m ³ /h - 138,8 l/s Length 1,598m; width 0,5m; height 0,60m
BS600	Qmin=25 m ³ /h - 7,15 l/sec; Qmax=850 m ³ /h - 236 l/s Length 1,5m; width 0,6m; height 0,72m
BS800	Qmin=50 m ³ /h - 13,9 l/sec; Qmax=1400 m ³ /h - 389 l/s Length 2m; width 0,8m; height 0,90m
BS101	Qmin=60 m ³ /h - 16,6 l/sec; Qmax=2250 m ³ /h - 625 l/s Length 2,5m; width 1m; height 1m
Accessories	
0	None
2	PTU50/51 holder in PVC for PB mounting (835A027R)
3	Pedestal mounting kit in SS316 for PTU - to be used with BS Venturi and weirs (900A004A)
4	Wall mounting kit in SS316 for PTU - to be used with BS Venturi and weirs (900A001A)
5	Basin edge mounting kit in SS316 for PTU - to be used with BS Venturi and weirs (900A002A)
9	Special
Packing	
A	None
B	Wooden crate necessary for PB (from DN400 and bigger) and for BS (from BS300 and bigger) - price on request

EXAMPLES OF INSTALLATION

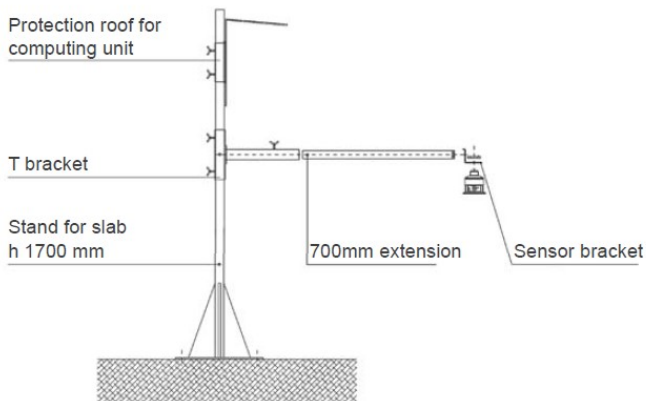
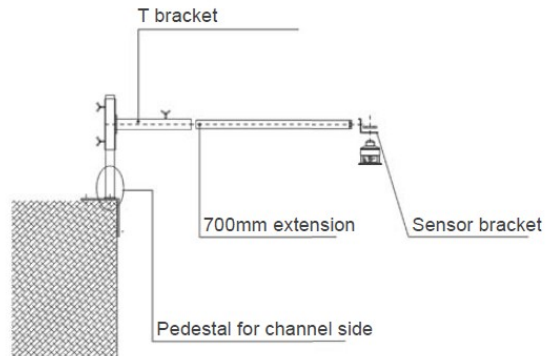
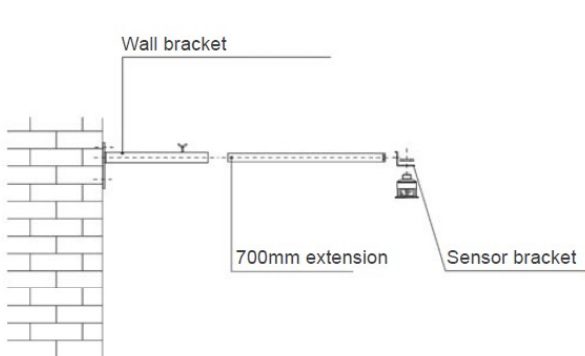


CA400 in non-pressurized pipe DN150



CA400 in a rectangular section channel

ACCESSORIES, MOUNTING SYSTEMS



FLOWMETER

compact flowmeter

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

Solution with excellent price performance ratio

Instantaneous and totalized flow measurement

No. 2 freely programmable relays

MODBUS communication protocol



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

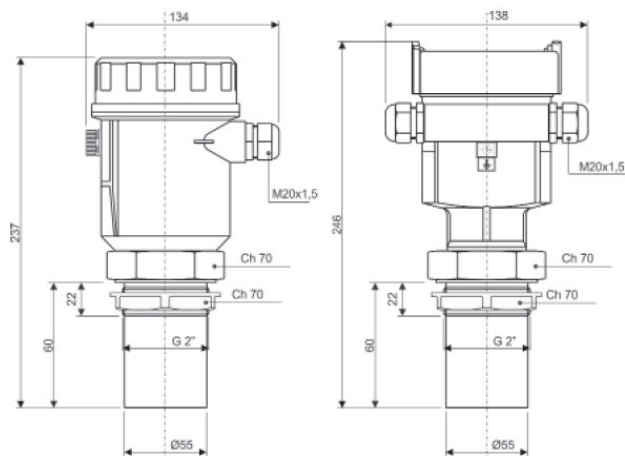
4 buttons or via MODBUS

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 Bowllus (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 flowmeter

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

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 Bowlius, Marshall 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

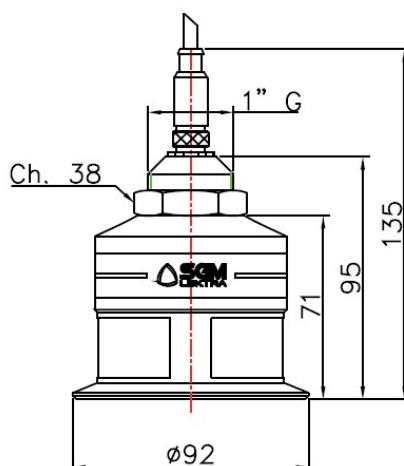
VLW601 prog. module with 4 buttons; MODBUS

Warm-up

30 minuts

Display

LCDdisplay on VLW601 module (opt.)



FLOW51

Ultrasonic open channel flow control unit

Compact - Suitable for upstream installation in weir, Venturi, Palmer Bowllus (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	
E	With SS316 male connector
Z	Special
Process connection / Sensor material	
0	G 1" / PP + nr. 1 1" BSP/ PP fixing bolt
1	DN100 PN6 UNI 1092-1 flange / PP
9	Special
Accessories	
A	None
F	MODBUS PC communication S/W (010F119A)
H	Extension L=250mm in PP + DN100 flange
L	Adjustable extension for PTU5x in PP + DN100 flange (Lmin= 85mm Lmax=690mm)
T	IP68 female connector with 5m linking cable
U	IP68 female connector with 10m linking cable
V	IP68 female connector with 15m linking cable
W	IP68 female connector with 20m linking cable
Z	Special

PB PALMER BOWLUS

hydraulic modeler

For flow measurement in outflow pipe or
no pressurized pipes

Direct installation in the pipe or manhole

Flow rates from 0,45 m³/h to 1800m³/h

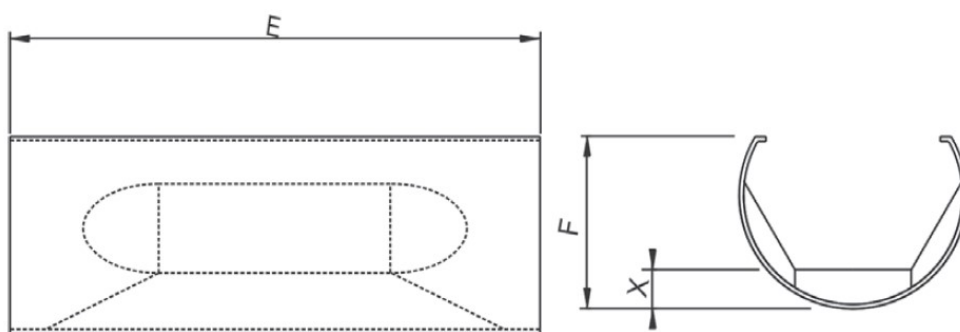
Matching Sets with all SGM-LEKTRA open
channels flow measurement systems

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 ³ /h (max. 8,9m ³ /h)
150	DN150 (6"); range 0,68÷21m ³ /h (max. 22m ³ /h)
200	DN200 (8") - with 2 spacing bars; range 1,2÷50m ³ /h (max. 52m ³ /h)
250	DN250 (10"); range 1,29÷80m ³ /h (max. 82m ³ /h)
300	DN300 (12") - with 2 spacing bars; range 2,27÷100m ³ /h (max. 102m ³ /h)
400	DN400 (16"); range 2,23÷256m ³ /h (max. 262m ³ /h)
500	DN500 (20") - with 3 spacing bars; range 5,34÷490m ³ /h (max. 496m ³ /h)
600	DN600 (24"); range 10÷700m ³ /h (max. 709m ³ /h)
700	DN700 (28"); range 15÷1150m ³ /h (max. 1177m ³ /h)
800	DN800 (32") - with 4 spacing bars; range 18÷1800m ³ /h (max. 1841m ³ /h)
Construction materials	
A	Fiberglass
Z	Special
Accessories	
0	None
2	PTU50/51 holder (835A027R)
3	FLOWMETER holder (835B027R)
9	Special

BS VENTURI

hydraulic modeler

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%.

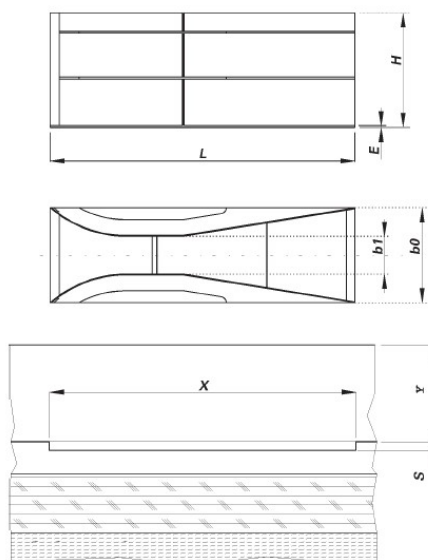


Fig. 1

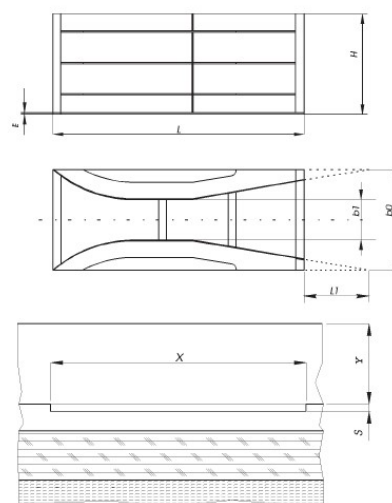


Fig. 2

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

OPEN CHANNEL AREA VELOCITY

Flowmeter for open-air ducts and open channels with the possibility of satisfying the most varied channel geometries. The system is able to receive the average speed by ultrasonic doppler method and to read the level of the hydraulic head by means of a hydrostatic detector. The system is also applicable in situations of heavy submergence or regurgitation (Q = average V for wet area). SGM-600 is installed without the need for hydraulic modelers such as venturi or weir.



	SGM-600F
Pipes diameter range:	Ø 30 ÷ 6000
Channel diameter range:	200 ÷ 6000 mm
Sensor material:	PVC / SS
Electronic housing material:	glass fiber
Process temperature:	-20 ÷ +60° C
Speed sensor accuracy:	±2%
Level sensor accuracy:	±0,25%
Analog output:	4÷20 mA
Communication port:	MODBUS
Impulse output:	yes
Supply:	85 ÷ 265 Vac ; 12 ÷ 38 Vdc
Data logger:	SD card



	SGM-600P
Pipes diameter range:	Ø 30 ÷ 6000
Channel diameter range:	200 ÷ 6000 mm
Sensor material:	PVC / SS
Electronic housing material:	ABS
Process temperature:	-20 ÷ +60° C
Speed sensor accuracy:	±2%
Level sensor accuracy:	±0,25%
Analog output:	4÷20 mA
Communication port:	MODBUS
Impulse output:	yes
Supply:	lasting rechargeable battery 50 h
Data logger:	SD card

SGM-600F

area velocity flowmeter

Flow measurements in open channels

No need for a hydraulic primary

4 ÷ 20mA analogue output

MODBUS RTU communication port

16GB SD card datalogger

Up to 20 points for the configuration of the irregular profile of a channel



The SGM-600F is suitable for flow measurement in partially filled pipes, drainage channels, man-made channels, waterways, drainage ducts, etc. The instrument is composed of a flow calculator, a speed transducer (with a doppler effect) and level. SGM-600F can display speed, level, flow rate and totalizer. It can record flow and total flow data on an SD card up to 16 GB. SGM-600F can calculate the cross-sectional area of partially filled pipes, open channel or river, and up to 20 coordinate points can be entered to describe cross-section of the river or channel with irregular shape. The velocity and level transducer integrates in it the instruments for measuring water speed, depth and temperature. SGM-600F is an indispensable instrument for flow measurement in all those applications where there is no hydraulic projection in the channel or in the pipe.

TECHNICAL FEATURES

Housing material

Glass fiber

Degree of protection

IP66

Keyboard

6 buttons

Display

LCD

Electrical connection

Removable terminal blocks

Working temperature

-20 ÷ + 60 ° C

Supply

85 ÷ 265Vac or 12 ÷ 28Vdc

Analog output (opt.)

n.1 4 ÷ 20mA, with min. load 250ohm and max. 500ohm

Digital communication (opt.)

MODBUS RTU

Datalogger (opt.)

on 16GB SD card

dimensions

244mm x 196mm x 114mm (LxWxH)

Tubes / channels size range

Ø300 ÷ 6000mm / 200 ÷ 6000mm

Speed range

21 to 4500mm / s bidirectional

Speed resolution

1mm / s

Speed accuracy

± 2%

Speed sensor signal path

30 ° above the horizontal

Level range

0 ÷ 3000mm or 0 ÷ 6000mm

Level accuracy

± 0.25%

Level resolution

1mm (0 ÷ 1m); 2mm (1 ÷ 3m)

3mm (0 ÷ 3m); 5mm (3 ÷ 6m)

Temperature range

-17 ° ÷ 60 ° C

Temperature resolution

0.1 ° C

Cable

15m std. (max 100m opz)

Transducer body material

PVC / AISI (fixing plate)

SGM-600F "Area Velocity" flowmeter

Flow measurement in open channel without flumes/weirs or pipes.

Speed range 0,021÷ 4,5 m/s

Accuracy ±2% - Working temperature -20°÷ 60°C

Protection degree: transmitter IP66 - transducer IP68

Power supply	
1	85÷265Vac
2	12÷28Vdc
Output	
A	None
B	4÷20mA
C	MODBUS RTU (RS485)
D	Data logger
Head range	
2	0÷2m
5	0÷5m
Transducers cables length	
A	15m
Z	Special (max 100m)
Accessories for installation	
A	None
B	Submersible fixing bracket
C	Expanding hoop for pipes up to ø 600mm (price on request)
D	Expanding hoop for pipes fm ø 601 to 1200mm (price on request)
E	Expanding hoop for pipes fm ø 1201 to 1800mm (price on request)

SGM-600P

area velocity flowmeter

- Flow measurements in open channels
- No need for a hydraulic primary
- 4 ÷ 20mA analogue output (opt.)
- MODBUS RTU communication port (opt.)
- 16GB SD card datalogger (opt.)
- Battery autonomy 40h
- Up to 20 points for configuring the irregular profile of a channel



The SGM-600P is suitable for measuring flow in partially filled pipes, drainage channels, man-made channels, waterways, drainage ducts, etc. The instrument is composed of a flow calculator, a speed transducer (with a Doppler effect) and level. SGM-600P can display speed, level, flow rate and totalizer. It can record flow and total flow data on an SD card up to 16 GB. SGM-600P can calculate the cross-sectional area of partially filled pipes, open channel or river, and it is possible to input up to 20 coordinate points to describe cross-section of the river or channel with irregular shape. The velocity and level transducer integrates in it the instruments for measuring water speed, depth and temperature. SGM-600P is an indispensable instrument for flow measurement in all those applications where there is no hydraulic projection in the channel or in the pipe.

TECHNICAL FEATURES

Housing material

ABS

Degree of protection

IP65

Keyboard

6 buttons

Display

LCD

Electrical connection

Connectors

Working temperature

-20 ÷ + 60 ° C

Supply

Rechargeable 12Vdc 12Ah lithium batteries, 40h autonomy

Battery charger 85 ÷ 265Vac, 50Hz, 200mA

Analog output (opt.)

n.1 4 ÷ 20mA, with min. load 250ohm and max. 500ohm

Digital communication (opt.)

MODBUS RTU

Datalogger (opt.)

on 16GB SD card

dimensions

270mm x 215mm x 175mm (LxWxH)

Tubes / channels size range

Ø300 ÷ 6000mm / 200 ÷ 6000mm

Speed range

21 to 4500mm / s bidirectional

Speed resolution

1mm / s

Speed accuracy

± 2%

Speed sensor signal path

30 ° above the horizontal

Level range

0 ÷ 3000mm or 0 ÷ 6000mm

Level accuracy

± 0.25%

Level resolution

1mm (0 ÷ 1m); 2mm (1 ÷ 3m)

3mm (0 ÷ 3m); 5mm (3 ÷ 6m)

Temperature range

-17 ° ÷ 60 ° C

Temperature resolution

0.1 ° C

Cable

15m std. (max 100m opz)

Transducer body material

PVC / AISI (fixing plate)

SGM-600P

Portable "Area Velocity" flowmeter

Flow measurement in open channel without flumes/weirs or pipes.

Speed range 0,021÷ 4,5 m/s

Accuracy ±2% - Working temperature -20°÷ 60°C

Protection degree: transmitter IP65 - transducer IP68

Power supply	
1	85÷265Vac (battery charger)
Output	
A	None
B	4÷20mA
C	MODBUS RTU (RS485)
D	Data logger
Head range	
2	0÷2m
5	0÷5m
Transducers cables length	
A	15m
Z	Special (max 100m)

SLM2X

total flow indicator

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



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

SLM2XH3

total flow indicator

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



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

SLM2X

Total flow indicator with analog input

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

Power supply	
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

WASYS BENELUX



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FLOW BROCHURE