

Flow Measurement

SITRANS FM (electromagnetic)

Flow sensors

MAG 1100 and MAG 1100 HT

Overview



The SITRANS FM MAG 1100 is an electromagnetic flow sensor in a compact wafer design designed for flow applications in the process industry.

Benefits

- Sensor sizes: DN 2 ... 100 ($\frac{1}{12}$ " ... 4")
- Compact wafer design meets EN 1092, DIN and ANSI flange standards
- Corrosion resistant AISI 316 stainless steel sensor housing
- Highly resistant liner and electrodes fitting most extreme process media
- Temperature rating up to 200 °C (392 °F)
- Hose proof IP67/NEMA 4X enclosure rating
- Designed that patented in-situ verification can be conducted. Using SENSORPROM fingerprints.

Application

The main applications of the SITRANS FM electromagnetic flow sensors can be found in the following fields:

- Process industry
- Chemical industry
- Pharmaceutical industry
- Water treatment like e.g. chemical dosing

Design

- Compact or remote mounting possible
- Easy "plug & play" field changeability of transmitter
- Simple on site upgrade to IP68/NEMA 6P terminal box
- ATEX 2G D version
- FM Class I Div 2

Mode of operation

The flow measuring principle is based on Faraday's law of electromagnetic induction according to which the sensor converts the flow into an electrical voltage proportional to the velocity of the flow.

Integration

The complete flowmeter consists of a flow sensor and an associated transmitter SITRANS FM MAG 5000, 6000 or 6000 I. The flexible communication concept USM II simplifies integration and update to a variety of fieldbus systems such as HART, FOUNDATION Fieldbus H1, DeviceNet, PROFIBUS DP and PA, Modbus RTU/RS 485.

Flow Measurement

SITRANS FM (electromagnetic)

Flow sensors

MAG 1100 and MAG 1100 HT

Technical specifications

Version	MAG 1100	MAG 1100 HT (High temperature)
Measuring principle	Electromagnetic induction	Electromagnetic induction
Excitation frequency (Mains supply: 50 Hz/60 Hz)	DN 2 ... 65 (1/12" ... 2½"): 12.5 Hz/15 Hz DN 80, 100 (3", 4"): 6.25 Hz/7.5 Hz	DN 15 ... 50 (½" ... 2"): 12.5 Hz/15 Hz DN 80, 100 (3", 4"): 6.25 Hz/7.5 Hz
Process connection		
Nominal size	DN 2 ... DN 100 (1/12" ... 4") DN 10 ... DN 100 (3/8" ... 4")	DN 15 ... DN 100 (½" ... 4")
- MAG 1100 (Ceramic) - MAG 1100 (PFA)		
Mating flanges	EN 1092-1 (DIN 2501), ANSI B 16.5 class 150 and 300 or equivalent Option: DN 2 ... 10 (1/12" ... 3/8"): G½"/NPT ½" pipe connection adapters	EN 1092-1 (DIN 2501), ANSI B 16.5 class 150 and 300 or equivalent
Rated operating conditions		
<u>Ambient conditions</u>		
Ambient temperature		
- Standard sensor - Ex sensor - Compact with transmitter MAG 5000/6000 - Compact with transmitter MAG 6000 I - Compact with transmitter MAG 6000 I Ex	-40 ... +100 °C (-40 ... +212 °F) -20 ... +60 °C (-4 ... +140 °F) -20 ... +60 °C (-4 ... +140 °F) -20 ... +60 °C (-4 ... +140 °F) -20 ... +60 °C (-4 ... 140 °F)	-40 ... +100 °C (-40 ... +212 °F) -20 ... +60 °C (-4 ... +140 °F)
<u>Temperature of medium</u>		
- MAG 1100 (Ceramic) - MAG 1100 Ex (Ceramic) - MAG 1100 (PFA)	-20 ... +150 °C (-4 ... +302 °F) -20 ... +150 °C (-4 ... +302 °F) -30 ... +130 °C (-22 ... +266 °F) Suitable for steam sterilization at 150 °C (302 °F)	-20 ... +200 °C (-4 ... +392 °F) -20 ... +180 °C (-4 ... +356 °F)
<u>Temperature shock</u>		
- MAG 1100 (Ceramic) - Duration ≤ 1 min, followed by 10 min rest	- DN 2, 3 (1/12", 1/8") No limitations - DN 6, 10, 15, 25: Max. ΔT ≤ 80 °C/min (½", 3/8", ½", 1": Max. ΔT ≤ 144 °F/min) - DN 40, 50, 65: Max. ΔT ≤ 70 °C/min (1½", 2", 2½": Max. ΔT ≤ 126 °F/min) - DN 80, 100: Max. ΔT ≤ 60 °C/min (3", 4": Max. ΔT ≤ 108 °F/min) - Max. ± 100 °C (212 °F) momentarily	- DN 15, 25: Max. ΔT ≤ 80 °C/min (½", 1": Max. ΔT ≤ 144 °F/min) - DN 40, 50: Max. ΔT ≤ 70 °C/min (1½", 2": Max. ΔT ≤ 126 °F/min) - DN 80, 100: Max. ΔT ≤ 60 °C/min (3", 4": Max. ΔT ≤ 108 °F/min)
<u>Operating pressure</u>		
- MAG 1100 (Ceramic) - MAG 1100 (PFA)	- DN 2 ... 65: 40 bar (1/12" ... 2½": 580 psi) - DN 80: 37.5 bar (3": 540 psi) - DN 100: 30 bar (4": 435 psi) Vacuum: 1 x 10 ⁻⁶ bar _{abs} (1.5 x 10 ⁻⁵ psi _{abs}) 20 bar (290 psi) Vacuum: 0.02 bar _{abs} (0.3 psi _{abs}) DN 80 ... DN 100: CO ₂ pressure max. 7 bar (101.5 psi)	- DN 15 ... 50: 40 bar (½" ... 2": 580 psi) - DN 80: 37.5 bar (3": 540 psi) - DN 100: 30 bar (4": 435 psi) Vacuum: 1 x 10 ⁻⁶ bar _{abs} (1.5 x 10 ⁻⁵ psi _{abs})
<u>Mechanical load (vibration)</u>		
	18 ... 1000 Hz random in x, y, z, directions for 2 hours according to EN 60068-2-36 - Sensor: 3.17 g RMS - Sensor with compact MAG 5000/6000 mounted transmitter: 3.17 g RMS - Sensor with compact MAG 6000 I/6000 I Ex mounted transmitter: 1.14 g RMS - For compact installation with the MAG 6000 I, transmitter to be supported to avoid tension on sensor part.	18 ... 1000 Hz random in x, y, z, directions for 2 hours according to EN 60068-2-36 - Sensor: 3.17 g RMS
<u>Enclosure rating (standard)</u>		
EMC	IP67 to EN 60529 (NEMA 4X), 1 mH ₂ O for 30 min 2014/30/EU	IP67 to EN 60529 (NEMA 4X), 1 mH ₂ O for 30 min 2014/30/EU

Flow Measurement

SITRANS FM (electromagnetic)

Flow sensors

MAG 1100 and MAG 1100 HT**Technical specifications (continued)**

Version	MAG 1100	MAG 1100 HT (High temperature)
Design		
Weight	See Dimensional drawings	See Dimensional drawings
Material		
• Enclosure		
- MAG 1100	Stainless steel AISI 316L/1.4404	Stainless steel AISI 316L/1.4404
• Terminal box		
- Standard	Fibre glass reinforced polyamide (not for Ex)	Stainless steel AISI 316/1.4436
- Option	Stainless steel AISI 316/1.4436	
• Fixing studs	Stainless steel AISI 304/1.4301, Number and size to EN 1092-1:2001	Stainless steel AISI 304/1.4301, Number and size to EN 1092-1:2001
• Gaskets		
- Standard	EPDM (max. 150 °C, PN 40 (max. 302 °F, 600 psi))	Graphite (max. 200 °C, PN 40 (max. 392 °F, 600 psi))
- Option	• Graphite (max. 200 °C, PN 40 (max. 392 °F, 600 psi)) • PTFE (max. 130 °C, PN 25 (max. 266 °F, 300 psi)) • Stainless steel, AISI 316 /1.4436 • Hastelloy C22/2.4602 • PVDF	
• Pipe connection adapters: DN 2, 3, 6 and 10 (1/12", 1/8", 1/4" and 3/8")		
Liner		
• MAG 1100 (Ceramic)	• DN 2, 3 (1/12", 1/8"): Zirconium oxide (ZrO₂) (ceramic) • DN 6 ... 100 (1/4" ... 4"): Aluminum oxide Al₂O₃	DN 15 ... 100 (1/2", 4"): Aluminum oxide Al ₂ O ₃
• MAG 1100 (PFA)	Reinforced PFA (not for Ex)	
Electrodes		
• MAG 1100 (Ceramic)	• DN 10 ... 100 (3/8" ... 4"): Platinum with gold/Titanium brazing alloy • DN 2 ... 6 (1/12" ... 1/4"): Platinum • DN 10 ... 15 (3/8" ... 1/2"): Hastelloy C276/2.4819 • DN 25 ... 100 (1" ... 4"): Hastelloy C22/2.4602	Platinum with gold/Titanium brazing alloy
• MAG 1100 (PFA)		
Cable entries	• Remote installation 2 x M20 or 2 x 1/2" NPT • Compact installation - MAG 5000/MAG 6000: 4 x M20 or 4 x 1/2" NPT - MAG 6000 I: 2 x M25 (for supply/output) - MAG 6000 I Ex: 2 x M25 (for supply/output)	Remote installation 2 x M20 or 2 x 1/2" NPT
Certificates and approvals		
Calibration		
• Default calibration	Zero-point, 2 x 25 %, 2 x 90 %	Zero-point, 2 x 25 %, 2 x 90 %
• Special calibration	5-point calibration: 20 %, 40 %, 60 %, 80 %, 100 % of factory Q _{max} 10-point calibration: ascending and descending at 20 %, 40 %, 60 %, 80 %, 100 % of factory Q _{max} Matched-pair calibration: default, 5-point or 10-point	
Hazardous areas		
• MAG 1100 F (Ceramic)		
- Ex-sensor in compact or remote version with MAG 6000 I Ex	• ATEX, EAC Ex - Zone 1 Ex d e ia IIB T6 Gb • ATEX - Zone 21 Ex tD A21 IP67 • FM - NI Class I Div. 2 Groups A, B, C, D	• ATEX, EAC Ex - Zone 1 Ex d e ia IIB T6 Gb • ATEX - Zone 21 Ex tD A21 IP67 • FM - NI Class I Div. 2 Groups A, B, C, D
- Standard sensor in compact or remote version with MAG 5000/6000/6000 I		
• MAG 1100 F (PFA)		
- Standard sensor in compact or remote version with MAG 5000/6000/6000 I	• FM - NI Class I Div. 2 Groups A, B, C, D	
Pressure equipment	• PED – 2014/68/EU • CRN (only PFA)	• PED – 2014/68/EU
Others	• EAC (Russia, Belarus, Kazakhstan)	• EAC (Russia, Belarus, Kazakhstan)

For technical specification for transmitter - please see section about transmitters.

Flow Measurement

SITRANS FM (electromagnetic)

Flow sensors

MAG 1100 and MAG 1100 HT

Selection and ordering data	Article No.	Order code
Sensor SITRANS FM MAG 1100 EPDM gaskets included Click on the Article No. for the online configuration in the PIA Life Cycle Portal.	7ME6110- AA00	Additional information Please add "-Z" to Article No. and specify Order code(s) and plain text.
Diameter DN 2 (1/12") DN 3 (1/8") DN 6 (1/4") DN 10 (3/8") DN 15 (1/2") DN 25 (1") DN 40 (1 1/2") DN 50 (2") DN 65 (2 1/2") DN 80 (3") DN 100 (4")	1 D 1 H 1 M 1 R 1 V 2 D 2 R 2 Y 3 F 3 M 3 T	Certificates • Material certificate according to EN 10204-3.1 • Factory certificate according to EN 10204-2.2 • Factory certificate according to EN 10204-2.1 Special calibration • 5-point calibration ¹⁾ • 10-point calibration ²⁾ • Default (2 × 25 % and 2 × 90 %) matched-pair calibration • 5-point, matched-pair calibration ¹⁾ • 10-point, matched-pair calibration ²⁾ Terminal blocks • Factory mounted terminal blocks Country specific label • CRN (Canadian Registration Number) Tag name plate, stainless steel (specify in plain text) Tag name plate, plastic (self adhesive) Customer-specific transmitter setting
Liner material PFA - DN 10 ... 100 (3/8" ... 4") Ceramic	1 2	C12 C14 C15 D01 D06 D11 D15 D18 N02
Electrode material Hastelloy C (only with PFA liner) Platinum (only with ceramic liner)	1 2	Y17 Y18 Y20 Y40 Y41
Transmitter Standard sensor for remote transmitter (order transmitter separately) Ex sensor for remote transmitter (order transmitter separately) MAG 6000 I, Aluminum 18 ... 90 V DC, 115 ... 230 V AC MAG 6000 I, Aluminum 18 ... 30 V DC, Ex MAG 6000 I, Aluminum 115 ... 230 V AC, Ex MAG 6000 Polyamide, 11 ... 30 V DC/11 ... 24 V AC MAG 6000, Polyamide, 115 ... 230 V AC MAG 5000, Polyamide, 11 ... 30 V DC/11 ... 24 V AC MAG 5000, Polyamide, 115 ... 230 V AC	A B C D E H J K L	Factory mounted sensor cables • Sensor cables wired (specify Article No. for sensor cables and order cables separately) • Sensor cables wired and IP68 sealing (specify Article No. for sensor cables and order cables separately) Additional calibrations • Accredited matched-pair calibration acc. to ISO/IEC 17025: 2005 • Customer-specified calibration up to 10 points • Customer-witnessed calibration Any of above calibration
Communication No communication, add-on possible HART PROFIBUS PA Profile 3 (only MAG 6000/MAG 6000 I) PROFIBUS DP Profile 3 (not for Ex) (only MAG 6000/MAG 6000 I) Modbus RTU/RS 485 (not for Ex) (only MAG 6000/MAG 6000 I) FOUNDATION Fieldbus H1 (only MAG 6000/MAG 6000 I)	A B F G E J	On request³⁾ On request³⁾ On request³⁾
Cable glands/terminal box Metric: Polyamide terminal box or MAG 6000 I compact 1/2" NPT: Polyamide terminal box or MAG 6000 I compact Metric: Stainless steel terminal box 1/2" NPT: Stainless steel terminal box	1 2 3 4	

¹⁾ Quick ship only in combination with Ceramic liner

Flow Measurement

SITRANS FM (electromagnetic)

Flow sensors

MAG 1100 and MAG 1100 HT

Selection and ordering data

Article No.

Sensor SITRANS FM MAG 1100 HT High Temperature

Ceramic liner, Platinum electrode, Graphite gaskets included

Click on the Article No. for the online configuration in the PIA Life Cycle Portal.

Diameter

DN 15 (½")

DN 25 (1")

DN 40 (1½")

DN 50 (2")

DN 80 (3")

DN 100 (4")

Transmitter

Standard sensor for remote transmitter (order transmitter separately)

Ex sensor for remote transmitter (order transmitter separately)

Cable glands/terminal box

Metric: Stainless steel terminal box

½" NPT: Stainless steel terminal box

Additional information

Please add "-Z" to Article No. and specify Order code(s) and plain text.

Certificates

- Material certificate according to EN 10204-3.1
- Factory certificate according to EN 10204-2.2
- Factory certificate according to EN 10204-2.1

Special calibration

- 5-point calibration¹⁾
- 10-point calibration²⁾
- Default (2 × 25 % and 2 × 90 %) matched-pair calibration
- 5-point, matched-pair calibration¹⁾
- 10-point, matched-pair calibration²⁾

Terminal blocks

- Factory mounted terminal blocks

Tag name plate, stainless steel (specify in plain text)

Tag name plate, plastic (self adhesive)

Customer-specific transmitter setting

Factory mounted sensor cables

- Sensor cables wired (specify Article No. for sensor cables and order cables separately)
- Sensor cables wired and IP68 sealing (specify Article No. for sensor cables and order cables separately)

Additional calibrations

- Accredited matched-pair calibration acc. to ISO/IEC 17025: 2005
 - Customer-specified calibration up to 10 points
 - Customer-witnessed calibration
- Any of above calibration

¹⁾ 20 %, 40 %, 60 %, 80 %, 100 % of factory Q_{max}

²⁾ Ascending and descending at 20 %, 40 %, 60 %, 80 %, 100 % of factory Q_{max}

³⁾ Product Variation Request (PVR)

Operating instructions for SITRANS FM MAG 1100

Description

Article No.

- English

A5E02435647

All literature is available to download for free, in a range of languages, at <https://www.siemens.com/processinstrumentation/documentation>

Accessories

Description

Article No.

Potting kit for IP68/ NEMA 6P sealing of sensor junction box

FDK:085U0220



Flow Measurement

SITRANS FM (electromagnetic)

Flow sensors

MAG 1100 and MAG 1100 HT

Selection and ordering data

Article No.

Article No.

Accessories for MAG 1100 sensor**Pipe connection 1/2" external thread**

For DN 2 ... 10 (1/12" ... 3/8") sensor, material: Stainless steel AISI 316L 2 pcs. pipe connections, 2 pcs. EPDM gaskets, 12 pcs. M4x12 screws

- R $\frac{1}{2}$ " ISO 7-1 tapered thread
- 1/2" NPT thread

For DN 2 ... 10 (1/12" ... 3/8") sensor, material: Hastelloy C, 2 pcs. pipe connections, 2 pcs. PTFE gaskets, 12 pcs. M4x12 screws

- R $\frac{1}{2}$ " ISO 7-1 tapered thread
- 1/2" NPT thread

For DN 2 ... 10 (1/12" ... 3/8") sensor, material PVDF (Kynar 1000) 2 pcs. pipe connections (max. 70 °C, PN 8 bar/max 158 °F, 116 PSI), 1 pc. grounding ring 1), 1 pc. grounding wire, 3 pcs. PTFE gaskets, 2 pcs. space rings, 6 pcs. M4x12 and 6 pcs. M4x20 screws

- R $\frac{1}{2}$ " ISO 7-1 tapered thread incl. grounding ring
- 1/2" NPT thread incl. grounding ring

EPDM gaskets

Material: EPDM; each set includes: 2 pcs. EPDM gaskets, 1 pc. grounding wire, 1 pc. M6 screw, 1 pc. nut, 1 pc. washer, 1 pc. bolt grounding plate

- DN 2 ... 10 (1/12" ... 3/8")
- DN 15 (1/2")
- DN 25 (1")
- DN 40 (1 1/2")
- DN 50 (2")
- DN 65 (2 1/2")
- DN 80 (3")
- DN 100 (4")

PTFE gaskets

Material: PTFE; each set includes: 2 pcs. gaskets, 2 pcs. grounding wires, 3 pcs. M6 screws (DN 2 ... DN 10: 12 pcs. M4x14)

- DN 2 ... 10 (1/12" ... 3/8")
- DN 15 (1/2")
- DN 25 (1")
- DN 40 (1 1/2")
- DN 50 (2")
- DN 65 (2 1/2")
- DN 80 (3")
- DN 100 (4")

Graphite gaskets

Material: Graphite; conductive, each set includes: 2 pcs. gaskets (can also be used as grounding ring)

- DN 2 ... 10 (1/12" ... 3/8")
- DN 15 (1/2")
- DN 25 (1")
- DN 40 (1 1/2")
- DN 50 (2")
- DN 65 (2 1/2")
- DN 80 (3")
- DN 100 (4")



FDK:083G0080
FDK:083G4330

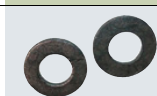
FDK:083G4332
FDK:083G4331

A5E01018395
A5E01018400

FDK:083G3116
FDK:083G3117
FDK:083G3119
FDK:083G3121
FDK:083G3122
FDK:083G3123
FDK:083G3124
FDK:083G3125



FDK:083G0156
FDK:083G0157
FDK:083G0159
FDK:083G0161
FDK:083G0162
FDK:083G0163
FDK:083G0164
FDK:083G0165



FDK:083G0116
FDK:083G0117
FDK:083G0119
FDK:083G0121
FDK:083G0122
FDK:083G0123
FDK:083G0124
FDK:083G0125

Grounding ring (stainless steel)

Material: AISI 316/1.4436; each set includes: 1 pc. grounding ring¹⁾, 3 pcs. PTFE gaskets, 1 pc. earth wire, 1 pc. M6 screw

- DN 2 ... 10 (1/12" ... 3/8")
- DN 15 (1/2")
- DN 25 (1")
- DN 40 (1 1/2")
- DN 50 (2")
- DN 65 (2 1/2")
- DN 80 (3")
- DN 100 (4")

Grounding ring (Hastelloy C)

Material: Hastelloy C22/2.4602; each set includes: 1 pc. grounding ring¹⁾, 3 pcs. PTFE gaskets, 1 pc. earth wire, 1 pc. M6 screw

- DN 2 ... 10 (1/12" ... 3/8")
- DN 15 (1/2")
- DN 25 (1")
- DN 40 (1 1/2")
- DN 50 (2")
- DN 65 (2 1/2")
- DN 80 (3")
- DN 100 (4")

Grounding ring (Tantalum)

Material: Tantalum; each set includes: 1 pc. grounding ring¹⁾, 3 pcs. PTFE gaskets, 1 pc. earth wire, 1 pc. M6 screw

- DN 2 ... 10 (1/12" ... 3/8")

- DN 15 (1/2")
- DN 25 (1")
- DN 40 (1 1/2")
- DN 50 (2")
- DN 65 (2 1/2")
- DN 80 (3")
- DN 100 (4")

Studs and nuts

for DN 100 PN 25/40, 8 pcs. M20 studs, 16 pcs. M20 nuts
Material: AISI 304/1.4305

- DN 100 (4")

Mounting kit

Material: Stainless steel 300 series, each kit includes: 1 pc. clamp block, 1 pc. clamp, 1 pc. bracket, 4 pcs. M8x20 screw, 2 pcs. M8 nut, 6 pcs. M8 split lockwasher, 2 pcs. M6 U-bolts

- DN 2 ... 100 (1/12" ... 4")



FDK:083G0686
FDK:083G0687
FDK:083G0689
FDK:083G0691
FDK:083G0692
FDK:083G0693
FDK:083G0694
FDK:083G0695



FDK:083G3256
FDK:083G3257
FDK:083G3259
FDK:083G3261
FDK:083G3262
FDK:083G3263
FDK:083G3264
FDK:083G3265



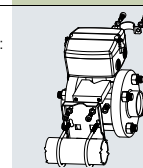
A5E01181599



A5E01181606
A5E01181610
A5E01181613
A5E01181615
A5E01181616
A5E01181619
A5E01181622



FDK:083G0226



A5E38288519

¹⁾ Thickness of grounding ring is 2 mm (0.08 inch), material Hastelloy C22/2.4602.

Flow Measurement

SITRANS FM (electromagnetic)

Flow sensors

MAG 1100 and MAG 1100 HT

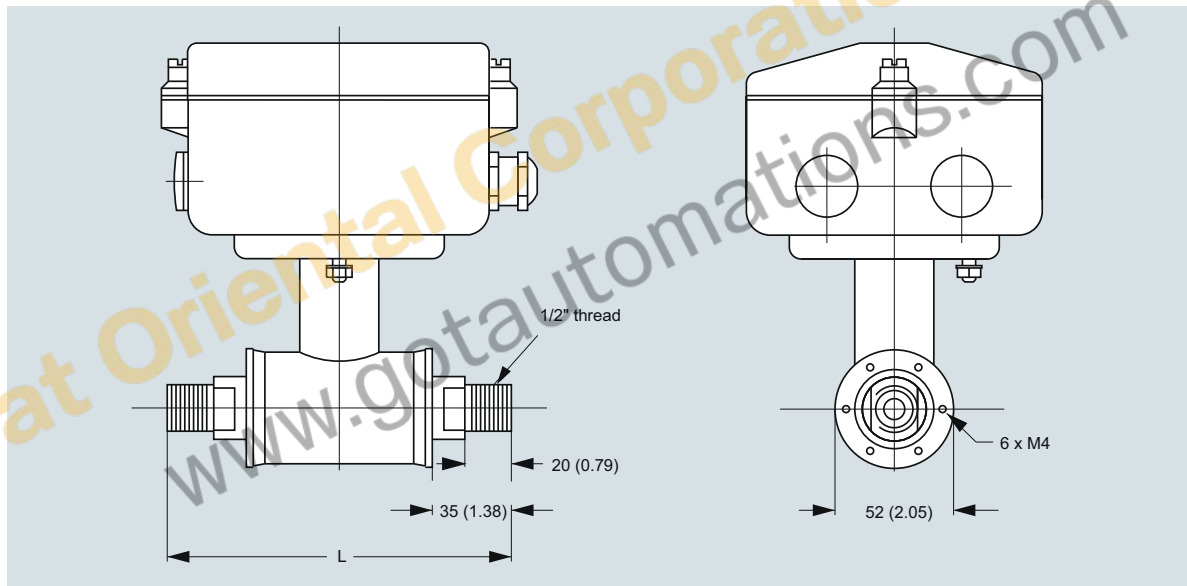
Dimensional drawings (continued)

The total built-in length "L" [mm]/[inch] before assembling depends on the gasket selected.

Size		EPDM		Graphite		PTFE (Teflon)		Without gasket		Grounding ring	
DN	Inch	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]
2 ... 10 ¹⁾	$\frac{1}{12}$... $\frac{3}{8}$	64	2.52	66	2.60	70	2.75	64	2.52	77	3.03
15	$\frac{1}{2}$	65	2.56	66	2.60	70	2.75	64	2.52	77	3.03
25	1	80	3.15	81	3.19	85	3.35	79	3.10	92	3.62
40	$1\frac{1}{2}$	95	3.74	96	3.78	100	3.94	94	3.70	107	4.21
50	2	105	4.13	106	4.17	110	4.33	104	4.05	117	4.61
65	$2\frac{1}{2}$	130	5.12	131	5.15	135	5.31	129	5.05	142	5.60
80	3	155	6.10	156	6.14	160	6.30	154	6.00	167	6.57
100	4	185	7.28	186	7.31	190	7.48	184	7.20	197	7.76

¹⁾ Mounting between two flanges

Sensor MAG 1100 DN 2 ... 10 ($\frac{1}{12}$ " ... $\frac{3}{8}$ ") with adapters



The MAG 1100 DN 2, 3, 6 and 10 ($\frac{1}{12}$ ", $\frac{1}{8}$ ", $\frac{1}{4}$ " and $\frac{3}{8}$ ") are prepared for assembly with the $\frac{1}{2}$ " pipe connections. Dimensions in mm (inch)

The length "L" varies dependent on the gasket choice.

Stainless steel and Hastelloy pipe connections								PVDF pipe connections	
Without gasket		EPDM		Graphite		PTFE		PTFE	
[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]
150	5.9	150	5.9	152	6.0	156	6.1	133	5.2

Important note:

For compact installation with the MAG 6000 I, transmitter to be supported to avoid tension on sensor part.