

Flow Measurement

SITRANS FM (electromagnetic)

Flow sensors

MAG 5100 W

Overview



The SITRANS FM MAG 5100 W is an electromagnetic flow sensor designed to meet ground water, drinking water, waste water, sewage or sludge applications.

Benefits

- DN 15 to DN 1200/2000 (½" to 48"/78")
- Stock program of MAG 5100 W secures short delivery time
- Connection flanges EN 1092-1 (DIN 2501), ANSI, AWWA, AS and JIS
- NBR Hard Rubber and Ebonite Hard Rubber liner for all water applications
- EPDM liner with drinking water approvals
- Hastelloy integrated grounding and measuring electrodes
- Increased low flow accuracy for water leak detection, due to coned liner design.
- Drinking water approvals
- Suitable for direct burial and constant flooding
- Custody transfer approvals
- Built-in length according to ISO 20456; the standard includes sizes up to DN 400.
- Easy commissioning, SENSORPROM unit automatically uploads calibration values and settings.
- Designed so patented in-situ verification can be conducted. Using SENSORPROM fingerprint.
- Custody transfer option for water billing, with type approval after OIML R 49 and verified according to MI-001 - OD inlet/OD outlet installation
 - Pattern approval OIML R 49
 - Conform to ISO 4064 and EN 14154 for mechanical flowmeters
 - PTB K7.2
 - Kiwa water approval
- FM Fire Service Meter (Class Number 1044) for automatic fire protection systems.
- Meets EEC directives: PED 2014/68/EU pressure directive for EN 1092-1 flanges
- Simple onsite or factory upgrade to IP68/NEMA 6P of a standard sensor
- Type approval of marine equipment (ABS, Bureau Veritas, DNV-GL, Lloyd's Register)

Application

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

- Water abstraction
- Water treatment
- Water distribution network (leak detection management)
- Custody transfer water meters
- Irrigation
- Waste water treatment
- Filtration plant (e.g. reverse osmosis and ultra filtration)
- Industrial water applications

Mode of operation

The flow measuring principle is based on Faradays 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 flow meter consists of a flow sensor and an associated transmitter SITRANS FM MAG 5000, MAG 6000 or MAG 6000 I.

The flexible communication concept USM II simplifies integration and update to a variety of fieldbus systems, e.g. HART, DeviceNet, PROFIBUS DP and PA, FOUNDATION Fieldbus H1 or Modbus RTU/RS 485.

Flow Measurement

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Flow sensors

MAG 5100 W

Technical specifications

Product characteristic	MAG 5100 W (7ME6520) Mainly for the European market EPDM or NBR lining	MAG 5100 W (7ME6580) Mainly for the non-European market Ebonite lining
Design and nominal size	Coned sensor (octagon liner): DN 15 ... 40 (½" ... 1½") Coned sensor: DN 50 ... 300 (2" ... 12") Full bore sensor: DN 350 ... 1200 (14" ... 48")	Full bore sensor: DN 25 ... 2 000 (1" ... 78")
Measuring principle Excitation frequency (Mains supply: 50/60 Hz)	Electromagnetic induction DN 15 ... 65 (½" ... 2½"): 12.5 Hz/15 Hz DN 80 ... 150 (3" ... 6"): 6.25 Hz/7.5 Hz DN 200 ... 300 (8" ... 12"): 3.125 Hz/3.75 Hz DN 350 ... 1200 (14" ... 48"): 1.5625 Hz/1.875 Hz	Electromagnetic induction DN 25 ... 65 (1" ... 2½"): 12.5 Hz/15 Hz DN 80 ... 150 (3" ... 6"): 6.25 Hz/7.5 Hz DN 200 ... 300 (8" ... 12"): 3.125 Hz/3.75 Hz DN 350 ... 2000 (14" ... 78"): 1.5625 Hz/1.875 Hz
Process connection Flanges ¹⁾ • EN 1092-1 • ANSI B16.5 • AWWA C-207 • AS4087 • JIS B 2220:2004	PN 10 (145 psi): DN 200 ... 300 (8" ... 12") Flat face PN 10 (145 psi): DN 350 ... 1200 (14" ... 48") Raised face ³⁾ PN 16 (232 psi): DN 50 ... 300 (2" ... 12") Flat face ³⁾ PN 16 (232 psi): DN 350 ... 1200 (14" ... 48") Raised face PN 40 (580 psi): DN 15 ... 40 (½" ... 1½") Flat face Class 150: ½" ... 12" Flat face; 14" ... 24" raised face Class D: 28" ... 48", Flat face PN 16 (232 psi): DN 50 ... DN 300 (2" ... 12") Flat Face; DN 350 ... DN 1200 (14" ... 48") Raised face K10 (1" ... 24")	Raised face ³⁾ (EN 1092-1, DIN 2501 and BS 4504 have the same mating dimensions) PN 6 (87 psi): DN 1400 ... 2000 (54" ... 78") PN 10 (145 psi): DN 200 ... 2000 (8" ... 78") PN 16 (232 psi): DN 65 ... 600 (2½" ... 24") PN 40 (580 psi): DN 25 ... 50 (1" ... 2") Class 150: 1" ... 24"; Raised face Class D: 28" ... 78", Flat face PN 16 (232 psi): DN 50 ... DN 1200 (2" ... 48") Raised face K10 (1" ... 24")
Rated Operation conditions Ambient temperature • Sensor • Compact with transmitter MAG 5000/6000 ⁴⁾ Operating pressure (Abs) [abs. bar] (Maximum operating pressure depending on flange standard, decreases with increasing operating temperature) Enclosure rating • Standard • Option Pressure drop Test pressure Mechanical load (vibration)	DN 15 ... 40 (½" ... 1½"): 0.01 ... 40 bar (0.15 ... 580 psi) DN 50 ... 300 (2" ... 12"): 0.03 ... 20 bar (0.44 ... 290 psi) DN 350 ... 1200 (14" ... 48"): 0.01 ... 16 bar (0.15 ... 232 psi) IP67 to EN 60529/NEMA 4X/6 (1 mH ₂ O for 30 min) IP68 to EN 60529/NEMA 6P (10 mH ₂ O continuously) DN 15 and 25 (½" and 1") : Max. 20 mbar (0.29 psi) at 1 m/s (3 ft/s) DN 40 ... 300 (1½" ... 12") : Max. 25 mbar (0.36 psi) at 3 m/s (10 ft/s) DN 350 ... 1200 (14" ... 48") : Insignificant 1.5 x PN (where applicable) FM Fire Service: 2 x PN 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 mounted transmitter: 1.14 g RMS	DN 25 ... 50 (1" ... 2"): 0.01 ... 40 bar (0.15 ... 580 psi) DN 65 ... 1200 (2½" ... 48"): 0.01 ... 16 bar (0.15 ... 232 psi) DN 1400 ... 2000 (54" ... 78"): 0.01 ... 10 bar (0.15 ... 145 psi) IP67 to EN 60529/NEMA 4X/6 (1 mH ₂ O for 30 min) IP68 to EN 60529/NEMA 6P (10 mH ₂ O continuously) Insignificant 1.5 x PN (where applicable) 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 mounted transmitter: 1.14 g RMS
Medium conditions Temperature of medium • NBR • EPDM • EPDM (MI-001) • Ebonite EMC	-10 ... +70 °C (14 ... 158 °F) -10 ... +70 °C (14 ... 158 °F) 0.1 ... 30 °C (32 ... 76 °F) - 2014/30/EU	- - - -10 ... +70 °C (14 ... 158 °F) 2014/30/EU

Technical specifications (continued)

Product characteristic	MAG 5100 W (7ME6520) Mainly for the European market EPDM or NBR lining	MAG 5100 W (7ME6580) Mainly for the non-European market Ebonite lining
Design		
Material	Carbon steel ASTM A 105, with corrosion-resistant coating of category C4 or C5 according to ISO 12944-2	Carbon steel ASTM A 105, with corrosion-resistant coating of category C4 or C5 according to ISO 12944-2
• Housing and flanges	Hastelloy C276	Hastelloy C276
• Electrode	Hastelloy C276	Hastelloy C276
• Grounding electrode	Fibre glass reinforced polyamide	Fibre glass reinforced polyamide
• Terminal box		
Certificates and approvals		
Calibration	Zero-point, 2 x 25 % and 2 x 90 %	Zero-point, 2 x 25 % and 2 x 90 %
• Default calibration	5-point calibration: 20 %, 40 %, 60 %, 80 %, 100 % of factory Q_{max}	5-point calibration: 20 %, 40 %, 60 %, 80 %, 100 % of factory Q_{max}
• Special calibration	10-point calibration: ascending and descending at 20 %, 40 %, 60 %, 80 %, 100 % of factory Q_{max}	10-point calibration: ascending and descending at 20 %, 40 %, 50 %, 80 %, 100 % of factory Q_{max}
	Matched pair calibration: default, 5-point or 10-point	Matched pair calibration: default, 5-point or 10-point
Custody transfer	• MI-001 cold water (EU): DN 50 ... DN 1200 (2" ... 48") • Kiwa water approval (NL): DN 50 ... DN 1200 (2" ... 48") • Chilled water pattern approval PTB K 7.2 DN 15 ... DN 1200 (Germany) ⁵⁾	-
Drinking water	EPDM liner: • WRAS (WRc, BS690 cold water, GB) • NSF/ANSI Standard 61 ⁶⁾ (Cold water, US) • ACS listed (F) • DVGW W270 (D) • Belgacqua (B) • AS/NZS 4020 (Australia/New Zealand)	• WRAS (WRc, BS690 cold water, GB) • NSF/ANSI Standard 61 ⁶⁾ (Cold water, US)
Marine ⁷⁾	• American Bureau of Shipping (ABS) • Bureau Veritas • DNV-GL • Lloyd's Register	
Hazardous areas ⁷⁾		
Standard sensor with/without MAG 5000/6000/6000 I	• FM - NI Class I Div. 2 Groups A, B, C, D - NI Class I Zone 2 Groups IIC	• FM - NI Class I Div. 2 Groups A, B, C, D - NI Class I Zone 2 Groups IIC
Pressure equipment	• PED conforming: All EN1092-1 flanges and ANSI Class 150 (< DN 300 / < 12") – 2014/68/EU ⁹⁾ • CRN	• PED conforming: All EN1092-1 flanges (< DN 600 / < 24") – 2014/68/EU ⁹⁾ • CRN
Others	• EAC (Russia, Belarus, Kazakhstan) • KCC (South Korea) • FM Fire Service Approval acc. to class 1044 ⁸⁾ • VdS: Extinguishing systems DN 50 ... 300 • MCERTS (GB environmental)	• EAC (Russia, Belarus, Kazakhstan) • CMC/CPA (China)

¹⁾ DN 750, DN 1050 and DN 1100 (30", 42" and 44") not available with EN 1092-1 (PN 10 and PN 16) and AS4087 flanges

²⁾ Type 01 (SORF)

³⁾ DN ≤ 600 type 01 (SORF); DN > 600 type 11 (WNRF)

⁴⁾ Compact with transmitter MAG 5000 CT/6000 CT -20 ... +50 °C (-4 ... 122 °F)

⁵⁾ For verification submit Product Variation Request

⁶⁾ Including Annex G

⁷⁾ In remote version with sensor size DN 50 ... DN 300 (2" ... 12")

⁸⁾ For sizes larger than 600 mm (24") in PN 16 PED conformity is available as a cost-added option. The basic unit will only carry the LVD (Low Voltage Directive) and EMC approval. All products sold outside of EU and EFTA are excluded from the directive, also products sold into certain market sectors are excluded. These include:

a) Meters used in networks for the supply, distribution and discharge of water.

b) Meters used in pipelines for the conveyance of any fluid from offshore to onshore.

c) Meters used in the extraction of petroleum or gas, including Christmas tree and manifold equipment.

d) Any meter mounted on a ship or mobile offshore platform. For further information on the PED standard and requirements see Pressure Equipment Directive in Appendix (chapter 10).

⁹⁾ Not for sensors with 300 µm coating.

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Technical specifications (continued)

MAG 5100 W (7ME6520) with MAG 6000 CT (Revenue program) MI-001

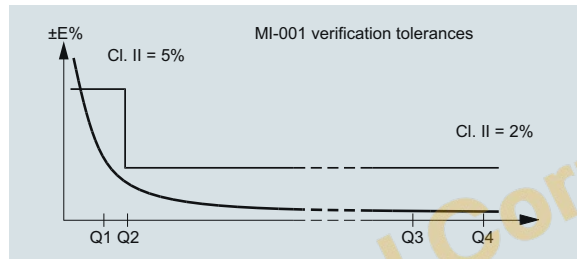
MAG 5100 W CT program is type approved according to international water meter standard OIML R 49. Since the first November 2006 the MI-001 water meter directive is in force, which means that all water meters can be sold across the EU borders if the water meters contain a MI-001 label.

The MAG 5100 W MI-001 verified and labeled products are a Class II approval according to Directive 2014/32/EU of the European Parliament and Council of 26 February, 2014 on measuring instruments, Annex III Water meters (MI-001) in the sizes from DN 50 to DN 1200 (Article No. 7ME6520).

The MID certification is obtained as a modul B + D module approval according to the above mentioned directive.

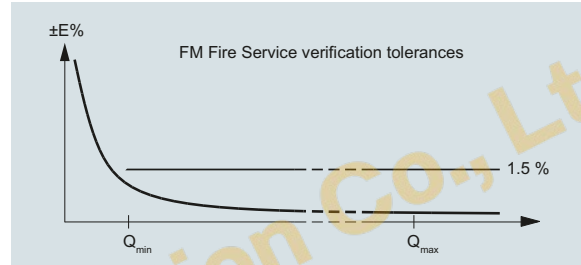
Module B: Type approval according to OIML R 49

Module D: Quality insurance approval of production



MAG 5100 W (7ME6520) with MAG 5000/MAG 6000 or MAG 6000 CT for Fire Service applications

MAG 5100 W (7ME6520) is FM Fire Service approved for automatic fire protection systems. The approval is applicable for the sizes DN 50, DN 80, DN 100, DN 150, DN 200, DN 250 and DN 300 (2", 3", 4", 6", 8", 10" and 12") with ANSI B16.5 Class 150 flanges. The FM Fire Service approved product can be ordered via the Z-options P20, P21 and P22.



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Technical specifications (continued)

MAG 5100 W (7ME6520) MI-001 verified and labeled products at a given Q3 and Q3/Q4 = 1.25 and Q2/Q1 = 1.6 measuring ranges see table below:

Order code: P11	DN 50 (2")	DN 65 (2½")	DN 80 (3")	DN 100 (4")	DN 125 (5")	DN 150 (6")	DN 200 (8")	DN 250 (10")	DN 300 (12")
"R" Q3/Q1	40	40	40	40	40	40	40	40	40
Q4 [m³/h]	20	31.25	50	78.75	125	200	312.5	500	787.5
Q3 [m³/h]	16	25	40	63	100	160	250	400	630
Q2 [m³/h]	0.64	1.0	1.6	2.52	4.0	6.4	10.0	16.0	25.2
Q1 [m³/h]	0.4	0.63	1.0	1.58	2.5	4.0	6.25	10.0	15.75
Order code: P12	DN 50 (2")	DN 65 (2½")	DN 80 (3")	DN 100 (4")	DN 125 (5")	DN 150 (6")	DN 200 (8")	DN 250 (10")	DN 300 (12")
"R" Q3/Q1	63	63	63	63	63	63	63	63	63
Q4 [m³/h]	20	31.25	50	78.75	125	200	312.5	500	787.5
Q3 [m³/h]	16	25	40	63	100	160	250	400	630
Q2 [m³/h]	0.41	0.63	1.02	1.6	2.5	4.1	6.3	10.2	16.0
Q1 [m³/h]	0.25	0.40	0.63	1.00	1.59	2.54	3.97	6.35	10.0
Order code: P13	DN 50 (2")	DN 65 (2½")	DN 80 (3")	DN 100 (4")	DN 125 (5")	DN 150 (6")	DN 200 (8")	DN 250 (10")	DN 300 (12")
"R" Q3/Q1	80	80	80	80	80	80	80	80	80
Q4 [m³/h]	20	31.3	50	78.75	125	200	312.5	500	787.5
Q3 [m³/h]	16	25	40	63	100	160	250	400	630
Q2 [m³/h]	0.32	0.5	0.8	1.26	2.0	3.2	5.0	8.0	12.6
Q1 [m³/h]	0.20	0.31	0.50	0.79	1.25	2.00	3.13	5.00	7.9
Order code: P16	DN 50 (2")	DN 65 (2½")	DN 80 (3")	DN 100 (4")	DN 125 (5")	DN 150 (6")	DN 200 (8")	DN 250 (10")	DN 300 (12")
"R" Q3/Q1	160	160	160	160	160	160	160	160	160
Q4 [m³/h]	50	78.5	125	200	312.5	500	787.5	1250	2000
Q3 [m³/h]	40	63	100	160	250	400	630	1000	1600
Q2 [m³/h]	0.4	0.63	1.0	1.6	2.5	4.0	6.3	10.0	16.0
Q1 [m³/h]	0.25	0.39	0.63	1.0	1.56	2.5	3.94	6.3	10.0
Order code: P17	DN 50 (2")	DN 65 (2½")	DN 80 (3")	DN 100 (4")	DN 125 (5")	DN 150 (6")	DN 200 (8")	DN 250 (10")	DN 300 (12")
"R" Q3/Q1	200	200	200	200	200	200	200	200	200
Q4 [m³/h]	50	78.5	125	200	312.5	500	787.5	1250	2000
Q3 [m³/h]	40	63	100	160	250	400	630	1000	1600
Q2 [m³/h]	0.32	0.50	0.80	1.28	2.0	3.2	5.0	8.0	12.8
Q1 [m³/h]	0.2	0.32	0.50	0.8	1.25	2.0	3.15	5.0	8.0
Order code: P18	DN 50 (2")	DN 65 (2½")	DN 80 (3")	DN 100 (4")	DN 125 (5")	DN 150 (6")	DN 200 (8")	DN 250 (10")	DN 300 (12")
"R" Q3/Q1	250	250	250	250	250	250	250	250	250
Q4 [m³/h]	50	78.5	125	200	312.5	500	787.5	1250	2000
Q3 [m³/h]	40	63	100	160	250	400	630	1000	1600
Q2 [m³/h]	0.26	0.4	0.64	1.02	1.6	2.56	4.0	6.4	10.24
Q1 [m³/h]	0.16	0.25	0.4	0.64	1.0	1.6	2.52	4.0	6.4
Order code: P24	DN 350 (14")	DN 400 (16")	DN 450 (18")	DN 500 (20")	DN 600 (24")				
"R" Q3/Q1	40	40	40	40	40				
Q4 [m³/h]	1250	1250	2000	2000	3125				
Q3 [m³/h]	1000	1000	1600	1600	2500				
Q2 [m³/h]	40.0	40.0	64.0	64.0	100.0				
Q1 [m³/h]	25.0	25.0	40.0	40.0	62.5				
Order code: P25	DN 350 (14")	DN 400 (16")	DN 450 (18")	DN 500 (20")	DN 600 (24")				
"R" Q3/Q1	63	63	63	63	63				
Q4 [m³/h]	1250	2000	3125	3125	5000				
Q3 [m³/h]	1000	1600	2500	2500	4000				
Q2 [m³/h]	25.4	40.63	63.49	63.49	101.6				
Q1 [m³/h]	15.9	25.4	39.7	39.7	63.49				

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Flow sensors

MAG 5100 W**Technical specifications** (continued)

Order code: P26	DN 350 (14")	DN 400 (16")	DN 450 (18")	DN 500 (20")	DN 600 (24")
"R" Q3/Q1	80	80	80	80	80
Q4 [m³/h]	2000	3125	5000	5000	7875
Q3 [m³/h]	1600	2500	4000	4000	6300
Q2 [m³/h]	32.0	50.0	80.0	80.0	126.0
Q1 [m³/h]	20.0	31.25	50.0	50.0	78.75

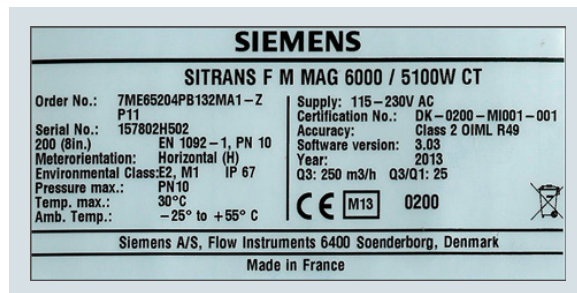
Order code: P27	DN 350 (14")	DN 400 (16")	DN 450 (18")	DN 500 (20")	DN 600 (24")
"R" Q3/Q1	100	100	100	100	100
Q4 [m³/h]	3125	3125	5000	5000	7875
Q3 [m³/h]	2500	2500	4000	4000	6300
Q2 [m³/h]	40.0	2540.0	64.0	64.0	100.8
Q1 [m³/h]	25.0	25.0	40.0	40.0	63.0

Order code: P29	DN 700 (28")	DN 750 (30")	DN 800 (32")	DN 900 (36")	DN 1000 (40")	DN 1200 (48")
"R" Q3/Q1	40	40	40	40	40	40
Q4 [m³/h]	5000	5000	5000	7875	7875	7875
Q3 [m³/h]	4000	4000	4000	6300	6300	6300
Q2 [m³/h]	160.0	160.0	160.0	252.0	252.0	252.0
Q1 [m³/h]	100.0	100.0	100.0	157.5	157.5	157.5

Order code: P30	DN 700 (28")	DN 750 (30")	DN 800 (32")	DN 900 (36")	DN 1000 (40")	DN 1200 (48")
"R" Q3/Q1	63	63	63	63	63	-
Q4 [m³/h]	5000	5000	5000	7875	7875	-
Q3 [m³/h]	4000	4000	4000	6300	6300	-
Q2 [m³/h]	101.6	101.6	101.6	160.0	160.0	-
Q1 [m³/h]	63.5	63.5	63.5	100.0	100.0	-

Order code: P31	DN 700 (28")	DN 750 (30")	DN 800 (32")	DN 900 (36")	DN 1000 (40")	DN 1200 (48")
"R" Q3/Q1	80	80	80	80	80	-
Q4 [m³/h]	5000	5000	5000	7875	7875	-
Q3 [m³/h]	4000	4000	4000	6300	6300	-
Q2 [m³/h]	80.0	80.0	80.0	126.0	126.0	-
Q1 [m³/h]	50.0	50.0	50.0	78.75	78.75	-

The label is placed on the transmitter housing. An example of the product label is shown below:



OIML R 49/MI-001 approvals valid for:

- DN 50 to 1200 mm (2" to 48")
- Horizontal and vertical installation
- Compact or remote with max. 500 m cable
- Power supply 115 to 230 V AC, 12 to 24 V AC/DC
- With or without communication module

Other restrictions may apply (see certificate)

Special OIML / MI-001 settings:

- Unit: m³
- Qmax: Q3
- Low flow cut-off: 0.1 %
- Digital output: Frequency

For other factory settings, see Operating Instructions.

Flow Measurement

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MAG 5100 W

Selection and ordering data

Article No.

Sensor SITRANS FM MAG 5100 W

Hastelloy electrodes, carbon steel flanges,
EU water markets and low flow applications

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

Diameter

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")
DN 125 (5")
DN 150 (6")
DN 200 (8")
DN 250 (10")
DN 300 (12")
DN 350 (14")
DN 400 (16")
DN 450 (18")
DN 500 (20")
DN 600 (24")
DN 700 (28")
DN 750 (30")
DN 800 (32")
DN 900 (36")
DN 1000 (40")
(42")
(44")
DN 1200 (48")

1 V
2 D
2 R
2 Y
3 F
3 M
3 T
4 B
4 H
4 P
4 V
5 D
5 K
5 R
5 Y
6 F
6 P
6 Y
7 D
7 H
7 M
7 R
7 U
7 V
8 B

Ord.
code

Flange norm and pressure rating

EN 1092-1

PN 10 (DN 200 ... 1200/8" ... 48")
PN 16 (DN 50 ... 1200/2" ... 48")
PN 16, non PED (DN 700 ... 1200/28" ... 48")
PN 40 (DN 15 ... 40/1/2" ... 1 1/2")

B
C
D
F

ANSI B16.5

class 150 (1/2" ... 24")

J

AWWA C-207

Class D (28" ... 48")

L

AS 4087

PN 16 (DN 50 ... 1200/2" ... 48")

N

JIS

B 2220:2004 K10 (1" ... 24")

R

Flange material and coating

Carbon steel flanges ASTM A 105,
corrosion-resistant coating of category C4
Carbon steel flanges ASTM A 105, 300 µm
corrosion-resistant coating of category C5

1
4

Liner material

EPDM
NBR

2
3

Article No.

Sensor SITRANS FM MAG 5100 W

Hastelloy electrodes, carbon steel flanges,
EU water markets and low flow applications

Transmitter

Sensor for remote transmitter
(Order transmitter separately)

A

MAG 6000 I, Aluminum, 18 ... 90 V DC,
115 ... 230 V AC

C

MAG 6000, Polyamid,
11 ... 30 V DC/11 ... 24 V AC

H

MAG 6000, Polyamid, 115 ... 230 V AC

J

MAG 5000, Polyamid,
11 ... 30 V DC/11 ... 24 V AC

K

MAG 5000, Polyamid, 115 ... 230 V AC

L

MAG 6000 CT, Polyamid, 115 ... 230 V AC

M

MAG 6000 CT, Polyamid,
11 ... 30 V DC/11 ... 24 V AC

R

Transmitter including wall-mounting kit for
remote designMAG 5000, Polyamid, 115 ... 230 V AC, incl.
special wall-mounting unit (approved marine
equipment)

- M20x1.5 cable glands
- 1/2" NPT cable glands

Z
Z

P O C
P O D

MAG 6000, Polyamid, 115 ... 230 V AC, incl.
special wall-mounting unit (approved marine
equipment)

- M20x1.5 cable glands
- 1/2" NPT cable glands

Z
Z

P O G
P O H

MAG 6000 CT, Polyamid,
11 ... 30 V DC/11 ... 24 V AC,
incl. wall-mounting unit

- M20x1.5 cable glands
- 1/2" NPT cable glands

Z
Z

P O J
P O K

MAG 6000 CT, Polyamid, 115 ... 230 V AC,
incl. wall-mounting unit

- M20x1.5 cable glands
- 1/2" NPT cable glands

Z
Z

P O L
P O M

Communication

None

A

HART

B

PROFIBUS PA Profile 3
(only MAG 6000/ MAG 6000 I)

F

PROFIBUS DP Profile 3
(only MAG 6000/ MAG 6000 I)

G

Modbus RTU/RS 485
(only MAG 6000/ MAG 6000 I)

E

FOUNDATION Fieldbus H1
(only MAG 6000/ MAG 6000 I)

J

Cable glands/terminal box

Metric: Polyamide terminal box or
MAG 6000 I compact

1

1/2" NPT: Polyamide terminal box or
MAG 6000 I compact

2

Flow Measurement

SITRANS FM (electromagnetic)

Flow sensors

MAG 5100 W

Selection and ordering data	Order code	Order code
Additional information Please add "-Z" to Article No. and specify Order code(s) and plain text.		Additional information Please add "-Z" to Article No. and specify Order code(s) and plain text.
Certificates <ul style="list-style-type: none"> Pressure test certificate according to EN 10204-3.1 Material certificate according to EN 10204-3.1 Factory certificate according to EN 10204-2.2 Factory certificate according to EN 10204-2.1 	C01 C12 C14 C15	Approval/Verification³⁾ <ul style="list-style-type: none"> Without verification acc. to OIML R 49 (DN 50 ... DN 300) MI-001 Q3/Q1 = 40 (DN 50 ... DN 300) MI-001 Q3/Q1 = 63 (DN 50 ... DN 300) MI-001 Q3/Q1 = 80 (DN 50 ... DN 300) MI-001 Q3/Q1 = 160 (DN 50 ... DN 300) MI-001 Q3/Q1 = 200 (DN 50 ... DN 300) MI-001 Q3/Q1 = 250 (DN 50 ... DN 300) Without verification according to OIML R 49 (DN 350 ... DN 600) MI-001 Q3/Q1 = 40 (DN 350 ... DN 600) MI-001 Q3/Q1 = 63 (DN 350 ... DN 600) MI-001 Q3/Q1 = 80 (DN 350 ... DN 600) MI-001 Q3/Q1 = 100 (DN 350 ... DN 600) Without verification according to OIML R 49 (DN 700 ... DN 1200) MI-001 Q3/Q1 = 40 (DN 700 ... DN 1200) MI-001 Q3/Q1 = 63 (DN 700 ... DN 1200) MI-001 Q3/Q1 = 80 (DN 700 ... DN 1200) PTB K7.2 QP/QI=25 (DN 15 ... DN 300) PTB K7.2 QP/QI=50 (DN 15 ... DN 300) PTB K7.2 QP/QI=100 Low dynamic range (DN 15 ... DN 300) PTB K7.2 QP/QI=100 High dynamic range (DN 15 ... DN 300) PTB K7.2 QP/QI=250 (DN 50 ... DN 300) PTB K7.2 QP/QI=25 (DN 350 ... DN 600) PTB K7.2 QP/QI=50 (DN 350 ... DN 600) PTB K7.2 QP/QI=100 Low dynamic range (DN 350 ... DN 600)
Special calibration <ul style="list-style-type: none"> 5-point calibration for DN 15 ... DN 200¹⁾ 5-point calibration for DN 250 ... DN 600¹⁾ 5-point calibration for DN 700 ... DN 1200¹⁾ 10-point calibration for DN 15 ... DN 200²⁾ 10-point calibration for DN 250 ... DN 600²⁾ 10-point calibration for DN 700 ... DN 1200²⁾ Default (2 x 25 % and 2 x 90 %) matched-pair calibration for DN 15 ... DN 200 Default (2 x 25 % and 2 x 90 %) matched-pair calibration for DN 250 ... DN 600 Default (2 x 25 % and 2 x 90 %) matched-pair calibration for DN 700 ... DN 1200 5-point, matched-pair calibration for DN 15 ... DN 200¹⁾ 5-point, matched-pair calibr. for DN 250 ... DN 600¹⁾ 5-point, matched-pair calibr. for DN 700 ... DN 1200¹⁾ 10-point, matched-pair calibration for DN 15 ... DN 200²⁾ 10-point, matched-pair calibr. for DN 250 ... DN 600²⁾ 10-point, matched-pair calibr. for DN 700 ... DN 1200²⁾ Accredited 5-point matched-pair calibration acc. to ISO 17025 DN 15 ... DN 200 Accredited 5-point matched-pair calibration acc. to ISO 17025 DN 250 ... DN 600 Accredited 5-point matched-pair calibration acc. to ISO 17025 DN 600 ... DN 1200 	D01 D02 D03 D06 D07 D08 D11 D12 D13 D15 D16 D17 D18 D19 D20 D21 D22 D23	P10 P11 P12 P13 P16 P17 P18 P23 P24 P25 P26 P27 P28 P29 P30 P31 P41 P42 P43 P44 P45 P47 P48 P49
Country of origin <ul style="list-style-type: none"> France 	F55	
Sensor cables <ul style="list-style-type: none"> Standard coil and electrode cable, PVC jacket <ul style="list-style-type: none"> 5 m (16 ft) 10 m (33 ft) 20 m (65 ft) 30 m (98 ft) 40 m (131 ft) 50 m (164 ft) 60 m (197 ft) 100 m (328 ft) 150 m (492 ft) 200 m (656 ft) 500 m (1640 ft) Standard coil and special electrode cable, PVC jacket <ul style="list-style-type: none"> 5 m (16 ft) 10 m (33 ft) 20 m (65 ft) 30 m (98 ft) 40 m (131 ft) 50 m (164 ft) 60 m (197 ft) 100 m (328 ft) 150 m (492 ft) 200 m (656 ft) 500 m (1640 ft) 	K01 K02 K04 K06 K07 K08 K09 K10 K11 K12 K13 K51 K52 K54 K56 K57 K58 K59 K60 K61 K62 K63	L01 L02 L03 L04 L05 L06 L07 L08 L09 L10 L11 L12 L13 L14 L15 L16 L17 L61 L62 L63 L64 L65 L66 L67 L68
Terminal blocks <ul style="list-style-type: none"> Factory mounted terminal blocks 	N02	
		Pulse output setting Volume / Pulse <ul style="list-style-type: none"> 0.001 l/pulse 0.01 l/pulse 0.1 l/pulse 0.5 l/pulse 1 l/pulse 5 l/pulse 10 l/pulse 50 l/pulse 100 l/pulse 500 l/pulse 1 m³/pulse 5 m³/pulse 10 m³/pulse 50 m³/pulse 100 m³/pulse 500 m³/pulse 1000 m³/pulse Pulse width <ul style="list-style-type: none"> 2 ms 5 ms 10 ms 20 ms 50 ms 100 ms 200 ms 500 ms
		FM Fire Service Approval (with ANSI B16.5 Class 150 flanges) <ul style="list-style-type: none"> DN 50, DN 80 and DN 100 (2", 3" and 4") DN 150 and DN 200 (6" and 8") DN 250 and DN 300 (10" and 12")
		P20 P21 P22

Flow Measurement

SITRANS FM (electromagnetic)

Flow sensors

MAG 5100 W

Selection and ordering data		Article No.	Article No.
Additional information			
Please add "-Z" to Article No. and specify Order code(s) and plain text.			
Country specific label	Order code		
FP2E label (France)	H20		
ADDC label (Abu Dhabi)	H23		
CRN (Canadian Registration Number)	H25		
Tag name plate, stainless steel (specify in plain text)	Y17		
Tag name plate, plastic (self-adhesive)	Y18		
Customer-specific transmitter setting	Y20		
Factory mounted sensor cables			
• Sensor cables wired (specify Article No. for sensor cables and order cables separately or specify K-option)	Y40		
• Sensor cables wired and IP68 sealing (specify Article No. for sensor cables and order cables separately or specify K-option)	Y41		
Additional calibrations			
• Customer-witnessed calibration	On request ⁴⁾		
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) For more details and references of the ranges please see the tables on page 3/95.			
4) Product Variation Request (PVR)			
Sensor SITRANS FM MAG 5100 W		7ME6580-	
Hastelloy electrodes, carbon steel flanges, Non EU water markets			
Click on the Article No. for the online configuration in the PIA Life Cycle Portal.			
Diameter			
DN 25 (1")	2 D		
DN 40 (1½")	2 R		
DN 50 (2")	2 Y		
DN 65 (2½")	3 F		
DN 80 (3")	3 M		
DN 100 (4")	3 T		
DN 125 (5")	4 B		
DN 150 (6")	4 H		
DN 200 (8")	4 P		
DN 250 (10")	4 V		
DN 300 (12")	5 D		
DN 350 (14")	5 K		
DN 400 (16")	5 R		
DN 450 (18")	5 Y		
DN 500 (20")	6 F		
DN 600 (24")	6 P		
DN 700 (28")	6 Y		
DN 750 (30")	7 D		
DN 800 (32")	7 H		
DN 900 (36")	7 M		
DN 1000 (40")	7 R		
DN 1050 (42")	7 U		
DN 1100 (44")	7 V		
DN 1200 (48")	8 B		
DN 1400 (54")	8 F		
DN 1500 (60")	8 K		
DN 1600 (66")	8 P		
DN 1800 (72")	8 T		
DN 2000 (78")	8 Y		
Sensor SITRANS FM MAG 5100 W		7ME6580-	
Hastelloy electrodes, carbon steel flanges, Non EU water markets			
Flange norm and pressure rating			
EN 1092-1			
PN 6 (DN 1400 ... 2000 (54" ... 78")) ¹⁾		A	
PN 10 (DN 200 ... 2000 (8" ... 78")) ¹⁾		B	
PN 16 (DN 65 ... 600 (2½" ... 24"))		C	
PN 16, non-PED (DN 700 ... 2000 (28" ... 78"))		D	
PN 40 (DN 25 ... 50 (1" ... 2"))		F	
ANSI B16.5			
Class 150 (1" ... 24")		J	
AWWA C-207			
Class D (28" ... 78") ¹⁾		L	
AS 4087			
PN 16 (DN 50 ... 1200 (2" ... 48"))		N	
JIS			
B 2220:2004 K10 (1" ... 24")		R	
Flange material and coating			
Carbon steel flanges ASTM A 105, corrosion-resistant coating of category C4		1	
Carbon steel flanges ASTM A 105, 300 µm corrosion-resistant coating of category C5		4	
Liner material			
Ebonite		4	
Electrode material			
Hastelloy		2	
Transmitter			
Sensor for remote transmitter (Order transmitter separately)		A	
MAG 6000, Polyamid, 11 ... 30 V DC/11 ... 24 V AC		H	
MAG 6000, Polyamid, 115 ... 230 V AC		J	
MAG 5000, Polyamid, 11 ... 30 V DC/11 ... 24 V AC		K	
MAG 5000, Polyamid, 115 ... 230 V AC		L	
Communication			
No communication, add-on possible		A	
HART		B	
PROFIBUS PA Profile 3 (only MAG 6000)		F	
PROFIBUS DP Profile 3 (only MAG 6000)		G	
Modbus RTU/RS 485 (only MAG 6000)		E	
FOUNDATION Fieldbus H1 (only MAG 6000)		J	
Cable glands/terminal box			
Metric: Polyamide terminal box or MAG 6000 I compact		1	
½" NPT: Polyamide terminal box or MAG 6000 I compact		2	
1) DN 1400 to DN 2000 (54" to 78") do not conform to PED or CRN.			

1) DN 1400 to DN 2000 (54" to 78") do not conform to PED or CRN.

Flow Measurement

SITRANS FM (electromagnetic)

Flow sensors

MAG 5100 W

Selection and ordering data

Order code

Additional information

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

Certificates

Pressure test 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 for DN 15 ... DN 200¹⁾
- 5-point calibration for DN 250 ... DN 600¹⁾
- 5-point calibration for DN 700 ... DN 1200¹⁾
- 10-point calibration for DN 15 ... DN 200²⁾
- 10-point calibration for DN 250 ... DN 600²⁾
- 10-point calibration for DN 700 ... DN 1200²⁾
- Default (2 x 25 % and 2 x 90 %) match-pair calibration for DN 15 ... DN 200
- Default (2 x 25 % and 2 x 90 %) match-pair calibration for DN 250 ... DN 600
- Default (2 x 25 % and 2 x 90 %) match-pair calibration for DN 700 ... DN 1200
- 5-point, matched-pair calibration for DN 15 ... DN 200¹⁾
- 5-point, matched-pair calibration for DN 250 ... DN 600¹⁾
- 5-point, matched-pair calibration for DN 700 ... DN 1200¹⁾
- 10-point, matched-pair calibration for DN 15 ... DN 200²⁾
- 10-point, matched-pair calibration for DN 250 ... DN 600²⁾
- 10-point, matched-pair calibration for DN 700 ... DN 1200²⁾

Terminal blocks

- Factory mounted terminal blocks

Country specific label

CRN (Canadian Registration Number)

Tag name plate, stainless (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)

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

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

Operating instructions for SITRANS FM MAG 5100 W

Description

- English
- German

Article No.

A5E03063678

A5E03376527

All literature is available to download for free, in a range of languages, at

<http://www.siemens.com/processinstrumentation/documentation>

Accessories

Description

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

Article No.

FDK:085U0220



MAG 5000/6000 transmitters and sensors are packed in separate boxes, the final assembly takes place during installation at the customer's place. MAG 6000 I transmitters and sensors are delivered compact mounted from factory. Communication module will be pre-mounted in the transmitter.

Please use online Product selector to get latest updates:

<http://www.pia-selector.automation.siemens.com>

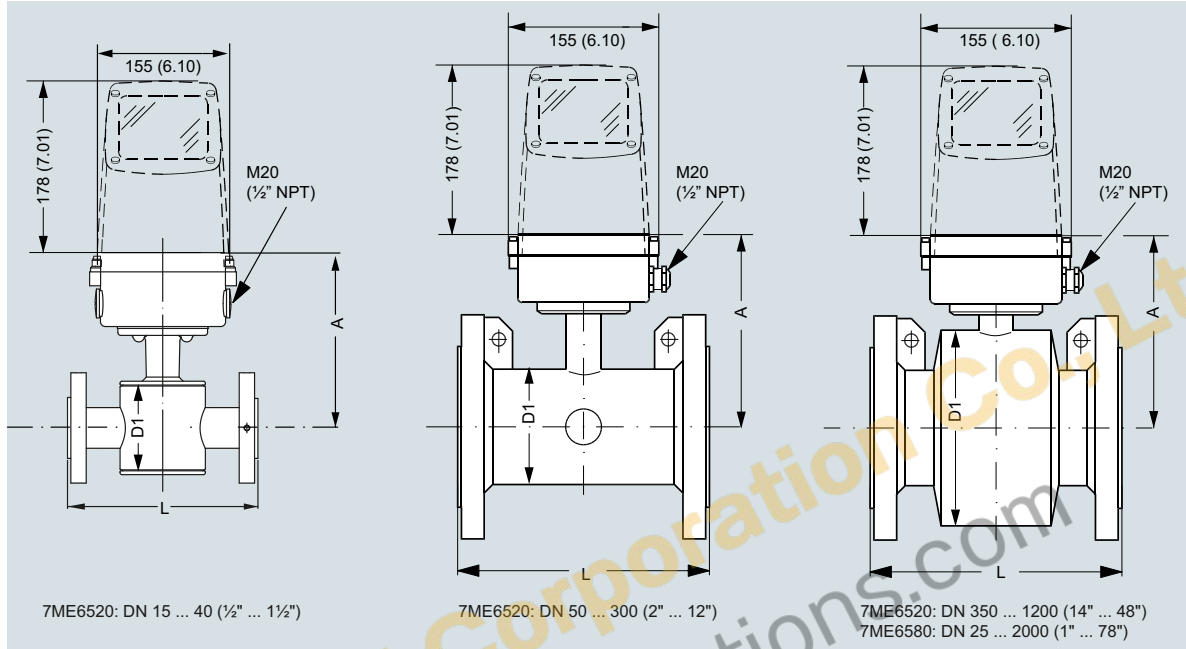
Flow Measurement

SITRANS FM (electromagnetic)

Flow sensors

MAG 5100 W

Dimensional drawings



Nominal size		7ME6520 NBR or EPDM liner				7ME6580 Ebonite liner				L ¹⁾	
[mm]	[inch]	A [mm]	[inch]	D1 [mm]	[inch]	A [mm]	[inch]	D1 [mm]	[inch]	[mm]	[inch]
15	½	177	7.0	77	3.0	-	-	-	-	200	7.9
25	1	187	7.4	96	3.8	187	7.4	104	4.09	200	7.9
40	1½	202	8.0	127	5.0	197	7.8	124	4.88	200	7.9
50	2	188	7.4	76	3.0	205	8.1	139	5.47	200	7.9
65	2½	194	7.6	89	3.5	212	8.3	154	6.06	200	7.9
80	3	200	7.9	102	4.0	222	8.7	174	6.85	200	7.9
100	4	207	8.1	114	4.5	242	9.5	214	8.43	250	9.8
125	5	217	8.5	140	5.5	255	10.0	239	9.41	250	9.8
150	6	232	9.1	168	6.6	276	10.9	282	11.1	300	11.8
200	8	257	10.1	219	8.6	304	12.0	338	13.31	350	13.8
250	10	284	11.2	273	10.8	332	13.1	393	15.47	450	17.7
300	12	310	12.2	324	12.8	357	14.1	444	17.48	500	19.7
350	14	382	15.0	451	17.8	362	14.3	451	17.76	550	21.7
400	16	407	16.0	502	19.8	387	15.2	502	19.76	600	23.6
450	18	438	17.2	563	22.2	418	16.5	563	22.16	600	23.6
500	20	463	18.2	614	24.2	443	17.4	614	24.17	600	23.6
600	24	514	20.2	715	28.2	494	19.4	715	28.15	600	23.6
700	28	564	22.2	816	32.1	544	21.4	816	32.13	700	27.6
750	30	591	23.3	869	34.2	571	22.5	869	34.21	750	29.5
800	32	616	24.3	927	36.5	606	23.9	927	36.5	800	31.5
900	36	663	26.1	1032	40.6	653	25.7	1032	40.63	900	35.4
1000	40	714	28.1	1136	44.7	704	27.7	1136	44.72	1000	39.4
	42	714	28.1	1136	44.7	704	27.7	1136	44.72	1000	39.4
	44	765	30.1	1238	48.7	755	29.7	1238	48.74	1100	43.3
1200	48	820	32.3	1348	53.1	810	31.9	1348	53.07	1200	47.2
1400	54	-	-	-	-	925	36.4	1574	65.94	1400	55.1
1500	60	-	-	-	-	972	38.2	1672	65.83	1500	59.1
1600	66	-	-	-	-	1025	40.4	1774	75.39	1600	63.0
1800	72	-	-	-	-	1123	44.2	1974	77.72	1800	70.9
2000	78	-	-	-	-	1223	48.1	2174	85.59	2000	78.7

¹⁾ Tolerances on built-in length:

DN 15 to DN 200 (½" to 8"): +0/-3 mm (+0/-0.12"), DN 250 to DN 400 (10" to 16"): +0/-5 mm (+0/-0.20"),

DN 450 to DN 600 (18" to 24"): +5/-5 mm (+0.20/-0.20"), DN 700 to DN 2000 (28" to 78"): +10/-10 mm (+0.39/-0.39")

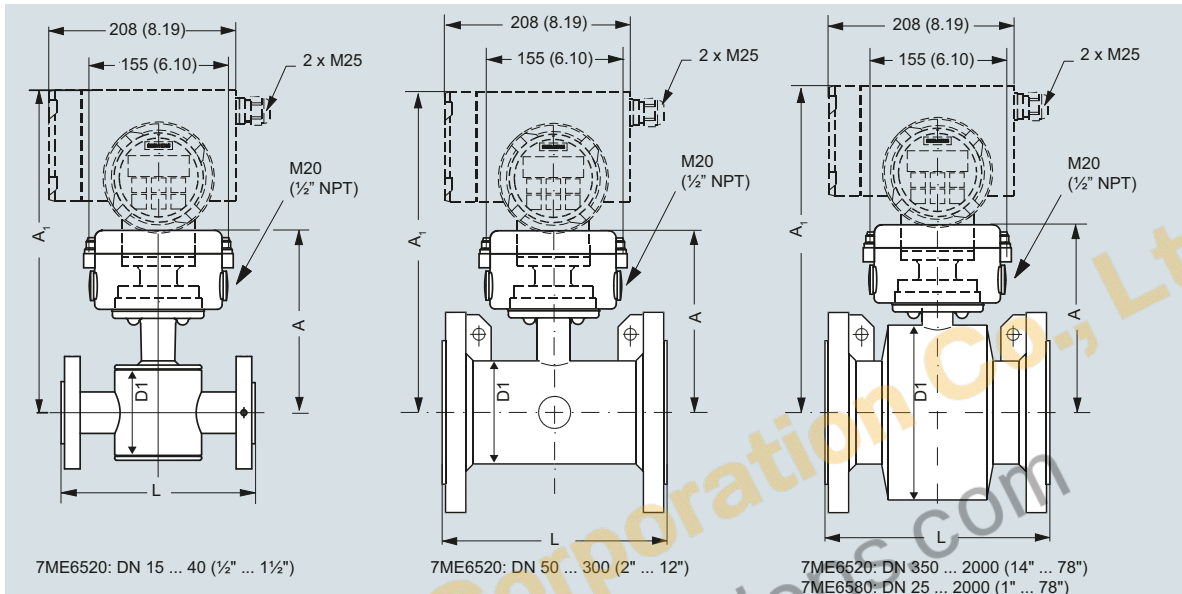
Flow Measurement

SITRANS FM (electromagnetic)

Flow sensors

MAG 5100 W**Dimensional drawings** (continued)

MAG 5100 W/6000 I Compact



Nominal size		7ME6520 NBR or EPDM liner						7ME6580 Ebonite liner						L ¹⁾	
		A	A1	D1				A	A1	D1					
[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]
15	1/2	177	7.0	331	13.0	77	3.0	187	7.4	-	-	-	-	200	7.9
25	1	187	7.4	341	13.4	96	3.8	187	7.4	341	13.4	104	4.09	200	7.9
40	1 1/2	202	8.0	356	14.0	127	5.0	197	7.8	351	13.8	124	4.88	200	7.9
50	2	188	7.4	342	13.5	76	3.0	205	8.1	359	14.1	139	5.47	200	7.9
65	2 1/2	194	7.6	348	13.7	89	3.5	212	8.3	366	14.4	154	6.06	200	7.9
80	3	200	7.9	354	14.0	102	4.0	222	8.7	376	14.8	174	6.85	200	7.9
100	4	207	8.1	361	14.2	114	4.5	242	9.5	396	15.6	214	8.43	250	9.8
125	5	217	8.5	371	14.6	140	5.5	255	10.0	409	16.1	239	9.41	250	9.8
150	6	232	9.1	386	15.2	168	6.6	276	10.9	430	16.9	282	11.1	300	11.8
200	8	257	10.1	411	16.2	219	8.6	304	12.0	458	18.0	338	13.31	350	13.8
250	10	284	11.2	438	17.2	273	10.8	332	13.1	486	19.1	393	15.47	450	17.7
300	12	310	12.2	464	18.3	324	12.8	357	14.1	511	20.1	444	17.48	500	19.7
350	14	382	15.0	536	21.1	451	17.8	362	14.3	516	20.3	451	17.76	550	21.7
400	16	407	16.0	561	22.1	502	19.8	387	15.2	541	21.3	502	19.76	600	23.6
450	18	438	17.2	592	23.3	563	22.2	418	16.5	572	22.5	563	22.16	600	23.6
500	20	463	18.2	617	24.3	614	24.2	443	17.4	597	23.5	614	24.17	600	23.6
600	24	514	20.2	668	26.3	715	28.2	494	19.4	648	25.5	715	28.15	600	23.6
700	28	564	22.2	718	28.3	816	32.1	544	21.4	698	27.5	816	32.13	700	27.6
750	30	591	23.3	745	29.3	869	34.2	571	22.5	725	28.5	869	34.21	750	29.5
800	32	616	24.3	770	30.3	927	36.5	606	23.9	760	29.9	927	36.5	800	31.5
900	36	663	26.1	817	32.2	1032	40.6	653	25.7	807	31.8	1032	40.63	900	35.4
1000	40	714	28.1	868	34.2	1136	44.7	704	27.7	858	33.8	1136	44.72	1000	39.4
	42	714	28.1	868	34.2	1136	44.7	704	27.7	858	33.8	1136	44.72	1000	39.4
	44	765	30.1	919	36.2	1238	48.7	755	29.7	904	35.6	1238	48.74	1100	43.3
1200	48	820	32.3	974	38.3	1348	53.1	810	31.9	964	38.0	1348	53.07	1200	47.2
1400	54	-	-	-	-	-	-	925	36.4	1079	42.5	1574	61.97	1400	55.1
1500	60	-	-	-	-	-	-	972	38.2	1126	44.3	1672	65.83	1500	59.1
1600	66	-	-	-	-	-	-	1025	40.4	1179	46.4	1774	59.84	1600	63.0
1800	72	-	-	-	-	-	-	1123	44.2	1277	50.3	1974	77.72	1800	70.9
2000	78	-	-	-	-	-	-	1223	48.1	1377	54.2	2174	85.59	2000	78.7

¹⁾ Tolerances on built in length:

DN 15 to DN 200 (1/2" to 8"): +0/-3 mm (+0/-0.12"), DN 250 to DN 400 (10" to 16"): +0/-5 mm (+0/-0.20")

DN 450 to DN 600 (18" to 24"): +5/-5 mm (+0.20/-0.20"), DN 700 to DN 2000 (28" to 78"): +10/-10 mm (+0.39/-0.39")

Flow Measurement
SITRANS FM (electromagnetic)
Flow sensors

MAG 5100 W

Dimensional drawings (continued)

Nominal size DN [mm] [inch]		7ME6520 NBR or EPDM liner										7ME6580 Ebonite liner			
		PN 10		PN 16		PN 40		Class 150/AWWA		AS		PN 16		JIS 10K	
		[kg]	[lbs]	[kg]	[lbs]	[kg]	[lbs]	[kg]	[lbs]	[kg]	[lbs]	[kg]	[lbs]	[kg]	[lbs]
15	½	-	-	-	-	4	9	4	9	4	9	5	11	4.18	9.22
25	1	-	-	-	-	6	12	5	11	4	9	5	11	5.68	12.52
40	1½	-	-	-	-	8	18	7	15	7	15	8	17	7.52	16.58
50	2	-	-	9	20	-	-	8	20	9	20	9	20	8.18	18.03
65	2½	-	-	10.7	24	-	-	11	24	10.7	24	11	24	9.44	20.81
80	3	-	-	11.6	26	-	-	13	28	11.6	26	12	26	10.46	23.06
100	4	-	-	15.2	33	-	-	19	41	15.2	33	16	35	13.7	30.20
125	5	-	-	20.4	45	-	-	24	52	-	-	19	42	20.22	44.58
150	6	-	-	26	57	-	-	29	64	26	57	27	60	24.1	53.13
200	8	48	106	48	106	-	-	56	124	48	106	40	88	43.42	95.72
250	10	64	141	69	152	-	-	79	174	69	152	60	132	63.64	140.30
300	12	76	167	86	189	-	-	110	243	86	189	80	176	72.62	160.01
350	14	104	229	125	274	-	-	139	307	115	254	110	242	-	-
400	16	119	263	143	314	-	-	159	351	125	277	125	275	-	-
450	18	136	299	173	381	-	-	182	400	141	311	175	385	-	-
500	20	163	359	223	491	-	-	225	495	189	418	200	440	-	-
600	24	236	519	338	744	-	-	320	704	301	664	287	633	-	-
700	28	270	595	314	692	-	-	273	602	320	704	330	728	-	-
750	30	-	-	-	-	-	-	329	725	-	-	360	794	-	-
800	32	346	763	396	873	-	-	365	804	428	944	450	992	-	-
900	36	432	951	474	1043	-	-	495	1089	619	1362	530	1168	-	-
1000	40	513	1130	600	1321	-	-	583	1282	636	1399	660	1455	-	-
42	-	-	-	-	-	-	-	687	1512	-	-	-	-	-	-
44	-	-	-	-	-	-	-	763	1680	-	-	-	-	-	-
1200	48	643	1415	885	1948	-	-	861	1896	813	1789	1180	2601	-	-
1400	54	1592	3510	-	-	-	-	-	-	-	-	1600	3528	-	-
1500	60	-	-	-	-	-	-	-	-	-	-	2460	5423	-	-
1600	66	2110	4652	-	-	-	-	-	-	-	-	2525	5566	-	-
1800	72	2560	5644	-	-	-	-	-	-	-	-	2930	6460	-	-
2000	78	3640	8025	-	-	-	-	-	-	-	-	3665	8080	-	-

With transmitter MAG 5000 and MAG 6000 compact, weight is increased by approximately 0.8 kg (1.8 lbs),
with MAG 6000 I, weight is increased by 5.5 kg (12.1 lb).