## Flow sensor MAG 5100 W



### Overview

The SITRANS F M 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 13359; 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 - 0D inlet/ 0D 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 EN1092-1 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 F M 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 flowmeter consists of a flow sensor and an associated transmitter SITRANS F M 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.

## Technical specifications

| **Product characteristic** | **MAG 5100 W (7ME6520)**<br>**Mainly for the European market**<br>**EPDM or NBR lining** | **MAG 5100 W (7ME6580)**<br>**Mainly for the non-European market**<br>**Ebonite lining** |
|---|---|---|
| Design and nominal size | Coned sensor (octagon liner): DN 15 ... 40 (½" ... 1½")<br>Coned sensor: DN 50 ... 300 (2" ... 12")<br>Full bore sensor: DN 350 ... 1200 (14" ... 48") | Full bore sensor: DN 25 ... 2000 (1" ... 78") |
| **Measuring principle** | Electromagnetic induction | Electromagnetic induction |
| Excitation frequency (Mains supply: 50/60 Hz) | DN 15 ... 65 (½" ... 2½"): 12.5 Hz/15 Hz<br>DN 80 ... 150 (3" ... 6"): 6.25 Hz/7.5 Hz<br>DN 200 ... 300 (8" ... 12"): 3.125 Hz/3.75 Hz<br>DN 350 ... 1200 (14" ... 48"): 1.5625 Hz/1.875 Hz | DN 25 ... 65 (1" ... 2½"): 12.5 Hz/15 Hz<br>DN 80 ... 150 (3" ... 6"): 6.25 Hz/7.5 Hz<br>DN 200 ... 1200 (8" ... 48"): 3.125 Hz/3.75 Hz<br>DN 1400 ... 2000 (54" ... 78"): 1.5625 Hz/1.875 Hz |
| **Process connection** | | |
| Flanges[1] | | |
| • EN 1092-1 | PN 10 (145 psi) : DN 200 ... 300 (8" ... 12") Flat face<br>PN 10 (145 psi): DN 350 ... 1200 (14" ... 48") Raised face[2]<br>PN 16 (232 psi): DN 50 ... 300 (2" ... 12") Flat face[3]<br>PN 16 (232 psi): DN 350 ... 1200 (14" ... 48") Raised face<br>PN 40 (580 psi): DN 15 ... 40 (½" ... 1½") Flat face | Raised face[3] (EN 1092-1, DIN 2501 and BS 4504 have the same mating dimensions)<br>PN 6 (87 psi): DN 1400 ... 2000 (54" ... 78")<br>PN 10 (145 psi): DN 200 ... 2000 (8" ... 78")<br>PN 16 (232 psi): DN 65 ... 600 (2½" ... 24")<br>PN 40 (580 psi): DN 25 ... 50 (1" ... 2") |
| • ANSI B16.5 | Class 150: ½" ... 12" Flat face; 14" ... 24" Raised face | Class 150: 1" ... 24"; Raised face |
| • AWWA C-207 | Class D: 28" ... 48", Flat face | Class D: 28" ... 78", Flat face |
| • AS4087 | PN 16 (232 psi): DN 15 ... DN 300 (2" ... 12") Flat Face; DN 350 ... DN 1200 (14" ... 48") Raised face | PN 16 (232 psi): DN 50 ... DN 1200 (2" ... 48") Raised face |
| • JIS B 2220:2004 | - | K10 (1" ... 24") |
| **Rated Operation conditions** | | |
| Ambient temperature | | |
| • Sensor | -40 ... +70 °C (-40 ... +158 °F) | -20 ... +70 °C (-4 ... +158 °F) |
| • Compact with transmitter MAG 5000/6000[4] | -20 ... +60 °C (-4 ... +140 °F) | -20 ... +60 °C (-4 ... +140 °F) |
| Operating pressure (Abs) [abs. bar] (Maximum operating pressure depending on flange standard, decreases with increasing operating temperature) | DN 15 ... 40 (½" ... 1½"): 0.01 ... 40 bar (0.15 ... 580 psi)<br>DN 50 ... 300 (2" ... 12"): 0.03 ... 20 bar (0.44 ... 290 psi)<br>DN 350 ... 1200 (14" ... 48"): 0.01 ... 16 bar (0.15 ... 232 psi) | DN 25 ... 50 (1" ... 2"): 0.01 ... 40 bar (0.15 ... 580 psi)<br>DN 65 ... 1200 (2½" ... 48"): 0.01 ... 16 bar (0.15 ... 232 psi)<br>DN 1400 ... 2000 (54" ... 78"): 0.01 ... 10 bar (0.15 ... 145 psi) |
| Enclosure rating | | |
| • Standard | IP67 to EN 60529/NEMA 4X/6 (1 m$H_2O$ for 30 min) | IP67 to EN 60529/NEMA 4X/6 (1 m$H_2O$ for 30 min) |
| • Option | IP68 to EN 60529/NEMA 6P (10 m$H_2O$ continuously) | IP68 to EN 60529/NEMA 6P (10 m$H_2O$ continuously) |
| Pressure drop | DN 15 and 25 (½" and 1"): Max. 20 mbar (0.29 psi) at 1 m/s (3 ft/s).<br>DN 40 ... 300 (1½" ... 12"): Max 25 mbar (0.36 psi) at 3 m/s (10 ft/s)<br>DN 350 ... 1200 (14" ... 48"): Insignificant | Insignificant |
| Test pressure | 1.5 x PN (where applicable)<br>FM Fire Service: 2 x PN | 1.5 x PN (where applicable) |
| Mechanical load (vibration) | 18 ... 1000 Hz random in x, y, z, directions for 2 hours according to EN 60068-2-36<br>Sensor: 3.17 g RMS<br>Sensor with compact MAG 5000/6000 mounted transmitter: 3.17 g RMS<br>Sensor with compact MAG 6000 I mounted transmitter: 1.14 g RMS | 18 ... 1000 Hz random in x, y, z, directions for 2 hours according to EN 60068-2-36<br>Sensor: 3.17 g RMS<br>Sensor with compact MAG 5000/6000 mounted transmitter: 3.17 g RMS<br>Sensor with compact MAG 6000 I mounted transmitter: 1.14 g RMS |

## Flow sensor MAG 5100 W

| Product characteristic | Mainly for the European market (7ME6520)<br>EPDM or NBR lining | Mainly for the non-European market (7ME6580)<br>Ebonite lining |
|---|---|---|
| Medium conditions | | |
| Temperature of medium | | |
| • NBR | -10 ... +70 °C (14 ... 158 °F) | - |
| • EPDM | -10 ... +70 °C (14 ... 158 °F) | - |
| • EPDM/NBR (MI-001) | 0.1 ... 30 °C (32 ... 76 °F) | - |
| • Ebonite | - | -10 ... +70 °C (14 ... 158 °F) |
| EMC | 2014/30/EU | 2014/30/EU |
| **Design** | | |
| Material | | |
| • Housing and flanges | Carbon steel ASTM A 105, with corrosion-resistant coating<br>Corrosivity category C4, according to ISO 12944-2 | Carbon steel ASTM A 105, with corrosion-resistant coating<br>Corrosivity category C4, according to ISO 12944-2 |
| • Electrode | Hastelloy C276 | Hastelloy C276 |
| • Grounding electrode | Hastelloy C276 | Hastelloy C276 |
| • Terminal box | Fibre glass reinforced polyamide | Fibre glass reinforced polyamide |
| **Certificates and approvals** | | |
| Calibration | | |
| • Standard production calibration | Zero-point, 2 x 25 % and 2 x 90 % | Zero-point, 2 x 25 % and 2 x 90 % |
| • Special calibration | 5-point calibration: 20 %, 40 %, 60 %, 80 %, 100 % of factory $Q_{max}$<br>10-point calibration: ascending and descending at 20 %, 40 %, 60 %, 80 %, 100 % of factory $Q_{max}$<br>Matched-pair calibration: default, 5-point or 10-point | 5-point calibration: 20 %, 40 %, 60 %, 80 %, 100 % of factory $Q_{max}$<br>10-point calibration: ascending and descending at 20 %, 40 %, 60 %, 80 %, 100 % of factory $Q_{max}$<br>Matched-pair calibration: default, 5-point or 10-point |
| Custody transfer | • MI-001 cold water (EU): DN 50 ... DN 1200 (2" ... 48")<br>• Kiwa water approval (NL): DN 50 ... DN 1200 (2" ... 48")<br>• Chilled water pattern approval PTB K 7.2 DN 50 ... DN 300 (Germany)[5] | - |
| Drinking water | EPDM liner:<br>• WRAS (WRc, BS690 cold water, GB)<br>• NSF/ANSI Standard 61[6] (Cold water, US)<br>• ACS listed (F)<br>• DVGW W270 (D)<br>• Belgaqua (B)<br>• MCERTS (GB environmental) | • WRAS (WRc, BS690 cold water, GB)<br>• NSF/ANSI Standard 61[6] (Cold water, US) |
| Marine[7] | • American Bureau of Shipping (ABS)<br>• Bureau Veritas<br>• Det Norske Veritas (DNV)<br>• Germanischer Lloyd (GL)<br>• Lloyd's Register of Shipping | |
| Hazardous areas[8] | | |
| • Standard sensor with/without MAG 5000/6000/6000 I | • FM<br>- NI Class I Div. 2 Groups A, B, C, D<br>- NI Class I Zone 2 Groups IIC | • FM<br>- NI Class I Div. 2 Groups A, B, C, D<br>- 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]<br>• CRN | • PED conforming: All EN1092-1 flanges (< DN 600 /<24") – 2014/68/EU[9]<br>• CRN |
| Others | • EAC (Russia, Belarus, Kazakhstan)<br>• KCC (South Korea)<br>• FM Fire Service Approval acc. to class 1044[8]<br>• VdS: Extinguishing systems DN 50 ... 300 | • EAC (Russia, Belarus, Kazakhstan)<br>• 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
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 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 page 10/15.
9) Not for sensors with 300 µm coating.

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

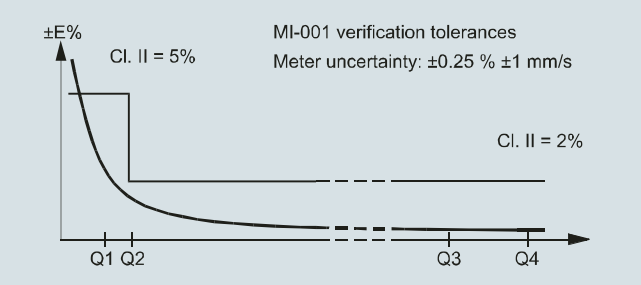
MAG 5100 W CT program is type approved according to international water meter standard OIML R 49. Since the first November 2006 the MI-001 water meter directive is in force, which means that all water meters can be sold across the EU borders if the water meters contain a MI-001 label.

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 VI Thermal Energy Meters (MI-004) 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.

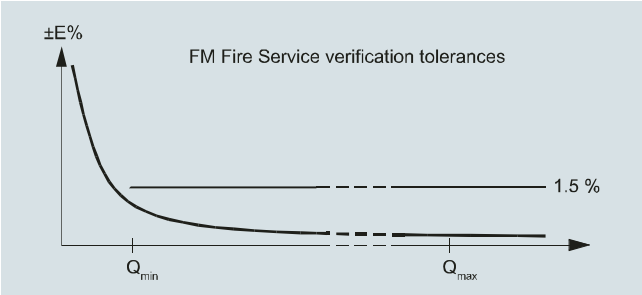
Module B : Type approval according to OIML R 49

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.



## Flow sensor MAG 5100 W

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 [$m^3$/h] | 20 | 31.25 | 50 | 78.75 | 125 | 200 | 312.5 | 500 | 787.5 |
| **Q3 [$m^3$/h]** | **16** | **25** | **40** | **63** | **100** | **160** | **250** | **400** | **630** |
| Q2 [$m^3$/h] | 0.64 | 1.0 | 1.6 | 2.52 | 4.0 | 6.4 | 10.0 | 16.0 | 25.2 |
| Q1 [$m^3$/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 [$m^3$/h] | 20 | 31.25 | 50 | 78.75 | 125 | 200 | 312.5 | 500 | 787.5 |
| **Q3 [$m^3$/h]** | **16** | **25** | **40** | **63** | **100** | **160** | **250** | **400** | **630** |
| Q2 [$m^3$/h] | 0.41 | 0.63 | 1.02 | 1.6 | 2.54 | 4.06 | 6.35 | 10.2 | 16.0 |
| Q1 [$m^3$/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 [$m^3$/h] | 20 | 31.25 | 50 | 78.75 | 125 | 200 | 312.5 | 500 | 787.5 |
| **Q3 [$m^3$/h]** | **16** | **25** | **40** | **63** | **100** | **160** | **250** | **400** | **630** |
| Q2 [$m^3$/h] | 0.32 | 0.5 | 0.8 | 1.26 | 2.0 | 3.2 | 5.0 | 8.0 | 12.6 |
| Q1 [$m^3$/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 [$m^3$/h] | 50 | 78.75 | 125 | 200 | 312.5 | 500 | 787.5 | 1250 | 2000 |
| **Q3 [$m^3$/h]** | **40** | **63** | **100** | **160** | **250** | **400** | **630** | **1000** | **1600** |
| Q2 [$m^3$/h] | 0.4 | 0.63 | 1.0 | 1.6 | 2.5 | 4.0 | 6.3 | 10.0 | 16.0 |
| Q1 [$m^3$/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 [$m^3$/h] | 50 | 78.75 | 125 | 200 | 312.5 | 500 | 787.5 | 1250 | 2000 |
| **Q3 [$m^3$/h]** | **40** | **63** | **100** | **160** | **250** | **400** | **630** | **1000** | **1600** |
| Q2 [$m^3$/h] | 0.32 | 0.50 | 0.80 | 1.28 | 2.0 | 3.2 | 5.0 | 8.0 | 12.8 |
| Q1 [$m^3$/h] | 0.2 | 0.32 | 0.5 | 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 [$m^3$/h] | 50 | 78.75 | 125 | 200 | 312.5 | 500 | 787.5 | 1250 | 2000 |
| **Q3 [$m^3$/h]** | **40** | **63** | **100** | **160** | **250** | **400** | **630** | **1000** | **1600** |
| Q2 [$m^3$/h] | 0.26 | 0.4 | 0.64 | 1.02 | 1.6 | 2.56 | 4.0 | 6.4 | 10.24 |
| Q1 [$m^3$/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 [$m^3$/h] | 1250 | 1250 | 2000 | 2000 | 3125 |
| **Q3 [$m^3$/h]** | **1000** | **1000** | **1600** | **1600** | **2500** |
| Q2 [$m^3$/h] | 40.0 | 40.0 | 64.0 | 64.0 | 100.0 |
| Q1 [$m^3$/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 [$m^3$/h] | 1250 | 2000 | 3125 | 3125 | 5000 |
| **Q3 [$m^3$/h]** | **1000** | **1600** | **2500** | **2500** | **4000** |
| Q2 [$m^3$/h] | 25.4 | 40.63 | 63.49 | 63.49 | 101.6 |
| Q1 [$m^3$/h] | 15.9 | 25.4 | 39.7 | 39.7 | 63.49 |

| 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 [$m^3$/h] | 2000 | 3125 | 5000 | 5000 | 7875 |
| **Q3 [$m^3$/h]** | **1600** | **2500** | **4000** | **4000** | **6300** |
| Q2 [$m^3$/h] | 32.0 | 50.0 | 80.0 | 80.0 | 126.0 |
| Q1 [$m^3$/h] | 20.0 | 31.25 | 50.0 | 50.0 | 78.75 |

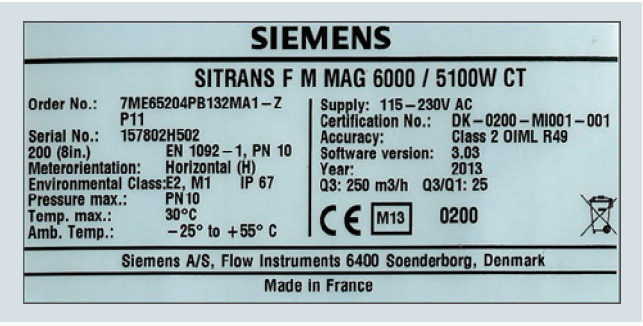
| Order code: P27 | DN 350 (14") | DN 400 (16“) | DN 450 (18“) | DN 500 (20“) | DN 600 (24“) |
|---|---|---|---|---|---|
| „R“ Q3/Q1 | 100 | 100 | 100 | 100 | 100 |
| Q4 [$m^3$/h] | 3125 | 3125 | 5000 | 5000 | 7875 |
| **Q3 [$m^3$/h]** | **2500** | **2500** | **4000** | **4000** | **6300** |
| Q2 [$m^3$/h] | 40.0 | 40.0 | 64.0 | 64.0 | 100.8 |
| Q1 [$m^3$/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 [$m^3$/h] | 5000 | 5000 | 5000 | 7875 | 7875 | 7875 |
| **Q3 [$m^3$/h]** | **4000** | **4000** | **4000** | **6300** | **6300** | **6300** |
| Q2 [$m^3$/h] | 160.0 | 160.0 | 160.0 | 252.0 | 252.0 | 252.0 |
| Q1 [$m^3$/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 [$m^3$/h] | 5000 | 5000 | 5000 | 7875 | 7875 | - |
| **Q3 [$m^3$/h]** | **4000** | **4000** | **4000** | **6300** | **6300** | **-** |
| Q2 [$m^3$/h] | 101.6 | 101.6 | 101.6 | 160.0 | 160.0 | - |
| Q1 [$m^3$/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 [$m^3$/h] | 5000 | 5000 | 5000 | 7875 | 7875 | - |
| **Q3 [$m^3$/h]** | **4000** | **4000** | **4000** | **6300** | **6300** | **-** |
| Q2 [$m^3$/h] | 80.0 | 80.0 | 80.0 | 126.0 | 126.0 | - |
| Q1 [$m^3$/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 DN 1200 (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: $m^3$
- Qmax: Q3
- Low flow cut-off: 0.1 %
- Digital output: Frequency

For other factory settings, see Operating Instructions.

## Flow sensor MAG 5100 W

3

| Selection and Ordering data | Article No. Order Code |
|---|---|
| **Sensor SITRANS F M MAG 5100 W** ↗ | **7ME6520-** |
| Hastelloy electrodes, carbon steel flanges, EU water markets and low flow applications | **-2** |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | |
| **Diameter** | |
| DN 15 (½") | **1V** |
| DN 25 (1") | **2D** |
| DN 40 (1½") | **2R** |
| DN 50 (2") | **2Y** |
| DN 65 (2½") | **3F** |
| DN 80 (3") | **3M** |
| DN 100 (4") | **3T** |
| DN 125 (5") | **4B** |
| DN 150 (6") | **4H** |
| DN 200 (8") | **4P** |
| DN 250 (10") | **4V** |
| DN 300 (12") | **5D** |
| DN 350 (14") | **5K** |
| DN 400 (16") | **5R** |
| DN 450 (18") | **5Y** |
| DN 500 (20") | **6F** |
| DN 600 (24") | **6P** |
| DN 700 (28") | **6Y** |
| DN 750 (30") | **7D** |
| DN 800 (32") | **7H** |
| DN 900 (36") | **7M** |
| DN 1000 (40") | **7R** |
| (42") | **7U** |
| (44") | **7V** |
| DN 1200 (48") | **8B** |
| **Flange norm and pressure rating** | |
| EN 1092-1 | |
| PN 10 (DN 200 ... 1200/8" ... 48") | **B** |
| PN 16 (DN 50 ... 1200/2" ... 48") | **C** |
| PN 16, non PED (DN 700 ... 1200/28" ... 48") | **D** |
| PN 40 (DN 15 ... 40/½" ... 1½") | **F** |
| ANSI B16.5 | |
| class 150 (½" ... 24") | **J** |
| AWWA C-207 | |
| Class D (28" ... 48") | **L** |
| AS 4087 | |
| PN 16 (DN 50 ... 1200/2" ... 48") | **N** |
| **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 C4 | **4** |
| **Liner material** | |
| EPDM | **2** |
| NBR Hard Rubber | **3** |

| Selection and Ordering data | Article No. Order Code |
|---|---|
| **Sensor SITRANS F M MAG 5100 W** | **7ME6520-** |
| Hastelloy electrodes, carbon steel flanges, EU water markets and low flow applications | **-2** |
| **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 design | |
| MAG 5000, Polyamid, 115 ... 230 V AC, incl. special wall-mounting unit (approved marine equipment) | |
| • M20x1.5 cable glands | **Z P0C** |
| • ½" NPT cable glands | **Z P0D** |
| MAG 6000, Polyamid, 115 ... 230 V AC, incl. special wall-mounting unit (approved marine equipment) | |
| • M20x1.5 cable glands | **Z P0G** |
| • ½" NPT cable glands | **Z P0H** |
| MAG 6000 CT, Polyamid, 11 ... 30 V DC/ 11 ... 24 V AC, incl. wall-mounting unit | |
| • M20x1.5 cable glands | **Z P0J** |
| • ½" NPT cable glands | **Z P0K** |
| MAG 6000 CT, Polyamid, 115 ... 230 V AC, incl. wall-mounting unit | |
| • M20x1.5 cable glands | **Z P0L** |
| • ½" NPT cable glands | **Z P0M** |
| **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** |

| 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 | **C01** |
| • Material certificate according to EN 10204-3.1 | **C12** |
| • Factory certificate according to EN 10204-2.2 | **C14** |
| • Factory certificate according to EN 10204-2.1 | **C15** |
| Special calibration | |
| • 5-point calibration for DN 15 ... DN 200[1)] | **D01** |
| • 5-point calibration for DN 250 ... DN 600[1)] | **D02** |
| • 5-point calibration for DN 700 ... DN 1200[1)] | **D03** |
| • 10-point calibration for DN 15 ... DN 200[2)] | **D06** |
| • 10-point calibration for DN 250 ... DN 600[2)] | **D07** |
| • 10-point calibration for DN 700 ... DN 1200[2)] | **D08** |
| • Default (2 x 25 % and 2 x 90 %) match-pair calibration for DN 15 ... DN 200 | **D11** |
| • Default (2 x 25 % and 2 x 90 %) match-pair calibration for DN 250 ... DN 600 | **D12** |
| • Default (2 x 25 % and 2 x 90 %) match-pair calibration for DN 700 ... DN 1200 | **D13** |
| • 5-point, matched-pair calibration for DN 15 ... DN 200[1)] | **D15** |
| • 5-point, matched-pair calibr. for DN 250 ... DN 600[1)] | **D16** |
| • 5-point, matched-pair calibr. for DN 700 ... DN 1200[1)] | **D17** |
| • 10-point, matched-pair calibration for DN 15 ... DN 200[2)] | **D18** |
| • 10-point, matched-pair calibr. for DN 250 ... DN 600[2)] | **D19** |
| • 10-point, matched-pair calibr. for DN 700 ... DN 1200[2)] | **D20** |
| Country of origin | |
| • France | **F55** |
| Sensor cables | |
| • Standard coil and electrode cable, PVC jacket | |
| - 5 m (16 ft) | **K01** |
| - 10 m (33 ft) | **K02** |
| - 20 m (65 ft) | **K04** |
| - 30 m (98 ft) | **K06** |
| - 40 m (131 ft) | **K07** |
| - 50 m (164 ft) | **K08** |
| - 60 m (197 ft) | **K09** |
| - 100 m (328 ft) | **K10** |
| - 150 m (492 ft) | **K11** |
| - 200 m (656 ft) | **K12** |
| - 500 m (1640 ft) | **K13** |
| • Standard coil and special electrode cable, PVC jacket | |
| - 5 m (16 ft) | **K51** |
| - 10 m (33 ft) | **K52** |
| - 20 m (65 ft) | **K54** |
| - 30 m (98 ft) | **K56** |
| - 40 m (131 ft) | **K57** |
| - 50 m (164 ft) | **K58** |
| - 60 m (197 ft) | **K59** |
| - 100 m (328 ft) | **K60** |
| - 150 m (492 ft) | **K61** |
| - 200 m (656 ft) | **K62** |
| - 500 m (1640 ft) | **K63** |
| Terminal blocks | |
| • Factory mounted terminal blocks | **N02** |
| Approval/Verification[3)] | |
| • Without verification acc. to OIML R 49 (DN 50 ... DN 300) | **P10** |
| • MI-001 Q3/Q1 = 40 (DN 50 ... DN 300) | **P11** |
| • MI-001 Q3/Q1 = 63 (DN 50 ... DN 300) | **P12** |
| • MI-001 Q3/Q1 = 80 (DN 50 ... DN 300) | **P13** |
| • MI-001 Q3/Q1 = 160 (DN 50 ... DN 300) | **P16** |
| • MI-001 Q3/Q1 = 200 (DN 50 ... DN 300) | **P17** |
| • MI-001 Q3/Q1 = 250 (DN 50 ... DN 300) | **P18** |

| Selection and Ordering data | Order code |
|---|---|
| • Without verification according to OIML R 49 (DN 350 ... DN 600) | **P23** |
| • MI-001 Q3/Q1 = 40 (DN 350 ... DN 600) | **P24** |
| • MI-001 Q3/Q1 = 63 (DN 350 ... DN 600) | **P25** |
| • MI-001 Q3/Q1 = 80 (DN 350 ... DN 600) | **P26** |
| • MI-001 Q3/Q1 = 100 (DN 350 ... DN 600) | **P27** |
| • Without verification according to OIML R 49 (DN 700 ... DN 1200) | **P28** |
| • MI-001 Q3/Q1 = 40 (DN 700 ... DN 1200) | **P29** |
| • MI-001 Q3/Q1 = 63 (DN 700 ... DN 1200) | **P30** |
| • MI-001 Q3/Q1 = 80 (DN 700 ... DN 1200) | **P31** |
| FM Fire Service Approval (with ANSI B16.5 Class 150 flanges) | |
| • DN 50, DN 80 and DN 100 (2", 3" and 4") | **P20** |
| • DN 150 and DN 200 (6" and 8") | **P21** |
| • DN 250 and DN 300 (10" and 12") | **P22** |
| Region/customer specific labels | |
| • Chinese label | **W06** |
| • KCC label (South Korea) | **W28** |
| • FP2E label (France) | **H20** |
| 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** |
| Special version (specify in plain text) | **Y99** |
| Additional calibrations | |
| • Accredited Siemens Flow Instruments matched pair calibration acc. to ISO/IEC 17025:2005 | **On request[4)]** |
| • Customer-witnessed calibration Any of above calibration | **On request[4)]** |

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 3/94.
4) Product Variation Request (PVR).

### Operating instructions for SITRANS F M MAG 5100 W

| Description | Article No. |
|---|---|
| • English | **A5E03063678** |
| • German | **A5E03376527** |

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

### *Accessories*

| Description | Article No. | |
|---|---|---|
| Potting kit for IP68/NEMA 6P sealing of sensor junction box | **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.

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Product selector link:
www.pia-portal.automation.siemens.com