

#### Overview



Transmitter MAG 5000/6000 compact version (left) and 19" insert version (right)

The MAG 5000 and 6000 are transmitters engineered for high performance, easy installation, commissioning and maintenance. The transmitters evaluate the signals from the SITRANS F M sensors type MAG 1100, MAG 1100 F, MAG 3100, MAG 3100 P and MAG 5100 W.

- Transmitter types:
- MAG 5000: Max. measuring error  $\pm 0.4\% \pm 1 \text{ mm/s}$  (incl. sensor)
- MAG 6000: Max. measuring error  $\pm 0.2\% \pm 1 \text{ mm/s}$  (incl. sensor, see also sensor specifications) and with additional features such as: "plug & play" insert bus modules; integrated batch functions.

#### Benefits

- Superior signal resolution for optimum turn down ratio
- Digital signal processing with many possibilities
- Automatic reading of SENSORPROM data for easy commissioning
- User configurable operation menu with password protection.
- 3 lines, 20 characters display in 11 languages.
- Flow rate in various units
- Totalizer for forward, reverse and net flow as well as additional information available
- Multiple functional outputs for process control, minimum configuration with analogue, pulse/frequency and relay output (status, flow direction, limits)
- Comprehensive self-diagnostic for error indication and error logging (see under SITRANS F M diagnostics)
- Batch control (MAG 6000 only)
- Custody transfer approval: PTB, OIML R 75, OIML R 117, OIML R 49, MI-001 and PTB K 7.2 for chilled water
- MAG 6000 with add-on bus modules for HART, FOUNDATION Fieldbus H1, DeviceNet, Modbus RTU/RS485, PROFIBUS PA and DP

#### Application

The SITRANS F M flowmeters are suitable for measuring the flow of almost all electrically conductive liquids, pastes and slurries. The main applications can be found in:

- Water and waste water
- Chemical and pharmaceutical industries
- Food and beverage industries
- Power generation and utility

#### Design

The transmitter is designed as either IP67 NEMA 4X/6 enclosure for compact or wall mounting or 19" version as a 19" insert as a base to be used in:

- 19" rack systems
- Panel mounting IP20/NEMA 1 (prepared for IP65/NEMA 2 display side)
- Back of panel mounting IP20/NEMA 1
- Wall mounting IP66/NEMA 4X

Several options on 19" versions are available such as:

- Transmitters mounted in safe area for Ex ATEX approved flow sensors (incl. barriers)
- Transmitters with electrode cleaning unit on request

#### Function

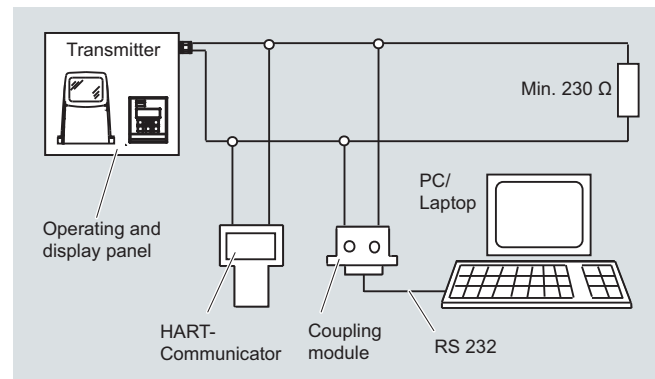
The MAG 5000/6000 are transmitters with a build-in alphanumeric display in several languages. The transmitters evaluate the signals from the associated electromagnetic sensors and also fulfil the task of a power supply unit which provides the magnet coils with a constant current.

Further information on connection, mode of operation and installation can be found in the data sheets for the sensors.

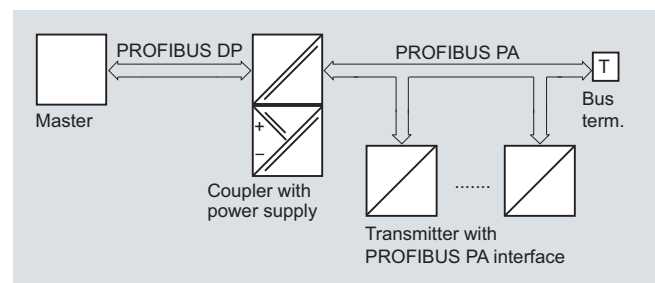
#### Displays and controls

Operation of the transmitter can be carried out using:

- Control and display unit
- HART communicator
- PC/laptop and SIMATIC PDM software via HART communication
- PC/laptop and SIMATIC PDM software using PROFIBUS or Modbus communication



HART communication



PROFIBUS PA communication

# Flow Measurement

## SITRANS F M

### Transmitter MAG 5000/6000

#### Technical specifications

##### Mode of operation and design

Measuring principle	Electromagnetic with pulsed constant field
Empty pipe	Detection of empty pipe (special cable required in remote mounted installation)
Excitation frequency	Depend on sensor size
Electrode input impedance	$> 1 \times 10^{14} \Omega$

##### Input

<b>Digital input</b>	11 ... 30 V DC, $R_i = 4.4 \text{ K}\Omega$
• Activation time	50 ms
• Current	$I_{11 \text{ V DC}} = 2.5 \text{ mA}$ , $I_{30 \text{ V DC}} = 7 \text{ mA}$

##### Output

<b>Current output</b>	
• Signal range	0 ... 20 mA or 4 ... 20 mA
• Load	$< 800 \Omega$
• Time constant	0.1 ... 30 s, adjustable
<b>Digital output</b>	
Frequency	0 ... 10 kHz, 50% duty cycle (uni/bidirectional)
Pulse (active)	24 V DC, 30 mA, $1 \text{ K}\Omega \leq R_i \leq 10 \text{ K}\Omega$ , short-circuit-protected (power supplied from flowmeter)
Pulse (passive)	3 ... 30 V DC, max. 110 mA, $200 \Omega \leq R_i \leq 10 \text{ K}\Omega$ (powered from connected equipment)
Time constant	0.1 ... 30 s, adjustable
<b>Relay output</b>	
Time constant	Changeover relay, same as current output
Load	42 V AC/2 A, 24 V DC/1 A

<b>Low flow cut off</b>	0 ... 9.9% of maximum flow
<b>Galvanic isolation</b>	All inputs and outputs are galvanically isolated

##### Max. measuring error (incl. sensor and zero point)

MAG 5000	0.4 % $\pm 1$ mm/s
MAG 6000	0.2 % $\pm 1$ mm/s

##### Rated operation conditions

Ambient temperature	
• Operation	<ul style="list-style-type: none"> <li>Display version: -20 ... +60 °C (-4 ... +140 °F)</li> <li>Blind version: -20 ... +60 °C (-4 ... +140 °F)</li> </ul>
• Storage	-40 ... +70 °C (-40 ... +158 °F)

##### Mechanical load (vibration)

Compact version	18 ... 1000 Hz, 3,17 g rms, sinusoidal in all directions to IEC 68-2-36
19" insert	1 ... 800 Hz, 1 g, sinusoidal in all directions to IEC 68-2-36

##### Degree of protection

Compact version	IP67/NEMA 4X/6 to IEC 529 and DIN 40050 (1 mH <sub>2</sub> O 30 min.)
19" insert	IP20/NEMA 1 to IEC 529 and DIN 40050

<b>EMC performance</b>	IEC/EN 61326-1 (all environments) IEC/EN 61326-2-5
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##### Display and keypad

Totalizer	Two eight-digit counters for forward, net or reverse flow
<b>Display</b>	Background illumination with alphanumeric text, 3 x 20 characters to indicate flow rate, totalized values, settings and faults; Reverse flow indicated by negative sign
Time constant	Time constant as current output time constant

##### Design

Enclosure material	
• Compact version	Fiber glass reinforced polyamide; optional (IP65 only): AISI 316 stainless steel
• 19" insert	Standard 19" insert of aluminium/steel (DIN 41494), width: 21 TE, height: 3 HE
• Back of panel	IP20/NEMA 1; Aluminium
• Panel mounting	IP20/NEMA 1 (prepared for IP65/NEMA 2 display side); ABS plastic
• Wall mounting	IP66/NEMA 4X; ABS plastic

##### Dimensional drawings

Compact version	See dimensional drawings
19" insert	See dimensional drawings

##### Weight

Compact version	0.75 kg (2 lb)
19" insert	See dimensional drawings

##### Power supply

	<ul style="list-style-type: none"> <li>115 ... 230 V AC +10% -15%, 50 ... 60 Hz</li> <li>11 ... 30 V DC or 11 ... 24 V AC</li> </ul>
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##### Power consumption

	<ul style="list-style-type: none"> <li>230 V AC: 17 VA</li> <li>24 V AC: 9 VA, <math>I_N = 380 \text{ mA}</math>, <math>I_{ST} = 8 \text{ A}</math> (30 ms)</li> <li>12 V DC: 11 W, <math>I_N = 920 \text{ mA}</math>, <math>I_{ST} = 4 \text{ A}</math> (250 ms)</li> </ul>
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##### Certificates and approvals

CE, C-UL general purpose, C-tick; FM Class 1, Div 2, CSA Class 1, Div 2	
Custody transfer approval (MAG 5000/6000 CT)	<ul style="list-style-type: none"> <li>Cold water: MI-001, PTB/OIML R 49 (pattern approval DE/DK)</li> <li>Hot water: PTB and DANAK OIML R 75 (pattern approval DE/DK) (MAG 6000 CT)</li> <li>Chilled water: PTB K 7.2</li> <li>Other media than water (milk, beer etc.): PTB and DANAK OIML R 117 (pattern approval DE/DK) (MAG 6000 CT)</li> </ul>

##### Communication

Standard	
• MAG 5000	Without serial communication or HART as option
• MAG 6000	Prepared for client mounted add-on modules
Optional (MAG 6000 only)	HART, Modbus RTU/RS485, FOUNDATION Fieldbus H1, DeviceNet, PROFIBUS PA, PROFIBUS DP as add-on modules
• MAG 5000/6000 CT	No communication modules approved





# Flow Measurement

## SITRANS F M

### Transmitter MAG 5000/6000








#### Selection and Ordering data

##### Transmitter MAG 5000

Description	Order No.	
Transmitter MAG 5000 Blind for compact and wall mounting; IP67/NEMA 4X/6, fibre glass reinforced polyamide <ul style="list-style-type: none"> <li>• 11 ... 30 V DC / 11 ... 24 V AC</li> <li>• 115 ... 230 V AC, 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>7ME6910-1AA30-0AA0</b></li> <li>◆ <b>7ME6910-1AA10-0AA0</b></li> </ul>	
Transmitter MAG 5000 Display for compact and wall mounting; IP67/NEMA 4X/6, fibre glass reinforced polyamide <ul style="list-style-type: none"> <li>• 11 ... 30 V DC / 11 ... 24 V AC</li> <li>• 115 ... 230 V AC, 50/60 Hz</li> <li>• 115 ... 230 V AC, 50/60 Hz, with HART</li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>7ME6910-1AA30-1AA0</b></li> <li>◆ <b>7ME6910-1AA10-1AA0</b></li> <li>◆ <b>7ME6910-1AA10-1BA0</b></li> </ul>	
Transmitter MAG 5000 CT for compact and wall mounting, approved for custody transfer; IP67/NEMA 4X/6, fibre glass reinforced polyamide <ul style="list-style-type: none"> <li>• 11 ... 30 V DC / 11 ... 24 V AC</li> <li>• 115 ... 230 V AC, 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>7ME6910-1AA30-1AB0</b></li> <li>◆ <b>7ME6910-1AA10-1AB0</b></li> </ul>	
Transmitter MAG 5000 for 19" rack and wall mounting <ul style="list-style-type: none"> <li>• 11 ... 30 V DC / 11 ... 24 V AC</li> <li>• 115 ... 230 V AC, 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>7ME6910-2CA30-1AA0</b></li> <li>◆ <b>7ME6910-2CA10-1AA0</b></li> </ul>	

◆ Short lead time (details in PMD)

##### Transmitter MAG 6000

Description	Order No.	
Transmitter MAG 6000 Blind for compact and wall mounting; IP67/NEMA 4X/6, fibre glass reinforced polyamide <ul style="list-style-type: none"> <li>• 11 ... 30 V DC / 11 ... 24 V AC</li> <li>• 115 ... 230 V AC, 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>7ME6920-1AA30-0AA0</b></li> <li>◆ <b>7ME6920-1AA10-0AA0</b></li> </ul>	
Transmitter MAG 6000 for compact and wall mounting; IP67/NEMA 4X/6, fibre glass reinforced polyamide <ul style="list-style-type: none"> <li>• 11 ... 30 V DC / 11 ... 24 V AC</li> <li>• 115 ... 230 V AC, 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>7ME6920-1AA30-1AA0</b></li> <li>◆ <b>7ME6920-1AA10-1AA0</b></li> </ul>	
Transmitter MAG 6000 for compact and wall mounting; IP65/NEMA 4, AISI 316 stainless steel (only for sensor with SS terminal box) (for remote installation order SS terminal box separately) <ul style="list-style-type: none"> <li>• 11 ... 30 V DC / 11 ... 24 V AC</li> <li>• 115 ... 230 V AC, 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>7ME6920-1QA30-1AA0</b></li> <li>◆ <b>7ME6920-1QA10-1AA0</b></li> </ul>	
Transmitter MAG 6000 CT for compact and wall mounting, approved for custody transfer (no communication modules possible); IP67/NEMA 4X/6, fibre glass reinforced polyamide <ul style="list-style-type: none"> <li>• 11 ... 30 V DC / 11 ... 24 V AC</li> <li>• 115 ... 230 V AC, 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>7ME6920-1AA30-1AB0</b></li> <li>◆ <b>7ME6920-1AA10-1AB0</b></li> </ul>	
Transmitter MAG 6000 SV for compact and wall mounting; special excitation 44 Hz settings for Batch application DN ≤ 25/1" IP67/NEMA 4X/6, fibre glass reinforced polyamide <ul style="list-style-type: none"> <li>11 ... 30 V DC / 11 ... 24 V AC</li> <li>115 ... 230 V AC, 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>7ME6920-1AB30-1AA0</b></li> <li>◆ <b>7ME6920-1AB10-1AA0</b></li> </ul>	
Transmitter MAG 6000 for 19" rack and wall mounting <ul style="list-style-type: none"> <li>• 11 ... 30 V DC / 11 ... 24 V AC</li> <li>• 115 ... 230 V AC, 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>7ME6920-2CA30-1AA0</b></li> <li>◆ <b>7ME6920-2CA10-1AA0</b></li> </ul>	
Transmitter MAG 6000 SV for 19" rack and wall mounting; special excitation 44 Hz settings for Batch application DN ≤ 25/1" <ul style="list-style-type: none"> <li>• 11 ... 30 V DC / 11 ... 24 V AC</li> <li>• 115 ... 230 V AC, 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>7ME6920-2CB30-1AA0</b></li> <li>◆ <b>7ME6920-2CB10-1AA0</b></li> </ul>	

# Flow Measurement

## SITRANS F M

### Transmitter MAG 5000/6000

#### Schematics

##### Electrical connection

###### Grounding

PE must be connected due to safety class 1 power supply.

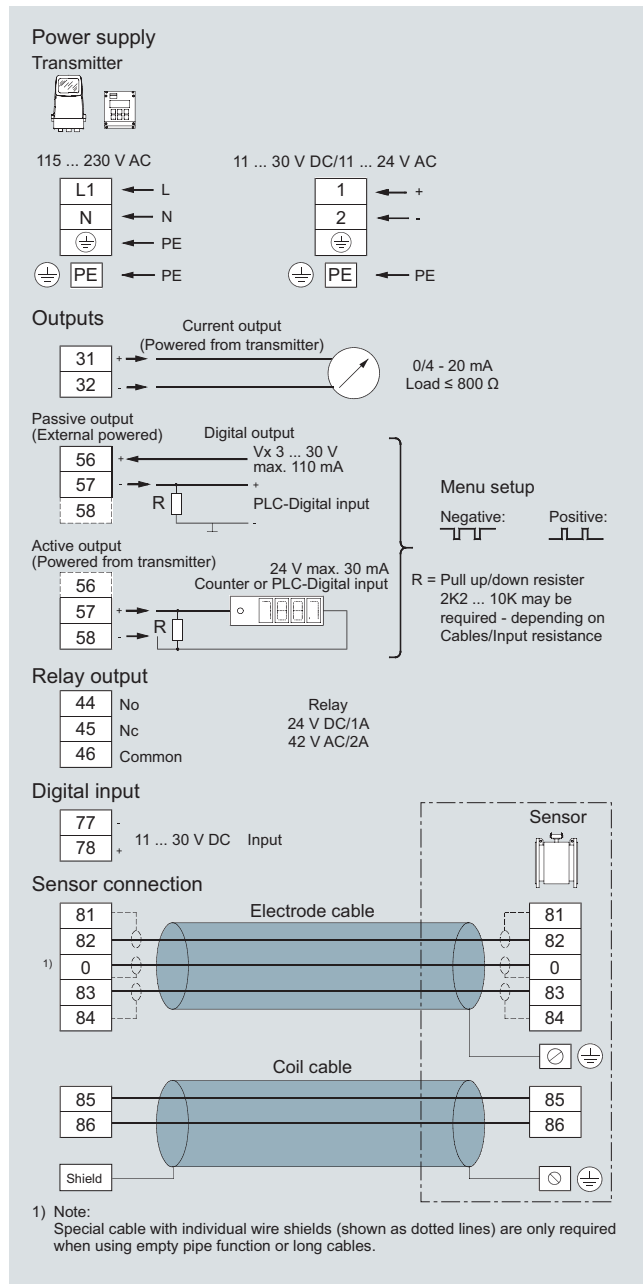
###### Mechanical counters

When mounting a mechanical counter to terminals 57 and 58 (active output), a 1000  $\mu$ F capacitor must be connected to the terminals 56 and 58. Capacitor + is connected to terminal 56 and capacitor - to terminal 58.

###### Output cables

If the output cable length is long in noisy environment, we recommend to use shielded cable.

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# Flow Measurement

## SITRANS F M

### 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 (Order No. 7ME6520, DN 15 to 300 mm (½" to 12")).
- Drinking water approvals
- Suitable for direct burial and constant flooding
- Custody transfer approvals
- Build-in length according to ISO 13359
- 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 R49 and verified according to MI-001 for DN 50 (2") to DN 300 (12")
  - Pattern approval OIML R 49 (Denmark, Germany)
  - conforms to ISO 4064 and EN 14154
  - MI-001 Custody Transfer approval for billing (EU)
- Meets EEC directives: PED, 97/23/EC pressure directive for EN1092-1 flanges
- Simple onsite or factory upgrade to IP68/NEMA 6P of a standard sensor
- MCERTS approval for UK environmental market

#### 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, Modbus RTU/RS485.

## Technical specifications

Product characteristic	Mainly for the European market (7ME6520)	Mainly for the non-European market (7ME6580)
	EPDM or NBR lining	Ebonite lining
Design and nominal size	Coned sensor: DN 15 ... 300 (½" ... 12") Full bore sensor: DN 350 ... 1200 (14" ... 48")	Full bore sensor: DN 25 ... 2000 (1" ... 78")
<b>Measuring principle</b>	Electromagnetic induction	Electromagnetic induction
Excitation frequency (Mains supply: 50/60 Hz)	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	DN 25 ... 65 (1" ... 2½"): 12.5 Hz/15 Hz DN 80 ... 150 (3" ... 6"): 6.25 Hz/7.5 Hz DN 200 ... 1200 (8" ... 48"): 3.125 Hz/3.75 Hz DN 1400 ... 2000 (54" ... 78"): 1.5625 Hz/1.875 Hz
<b>Process connection</b>		
Flanges		
• EN 1092-1	PN 10 (145 psi): DN 200 ... 300 (8" ... 12") Flat face flanges PN 10 (145 psi): DN 350 ... 1200 (14" ... 48") Raised face flanges PN 16 (232 psi): DN 50 ... 300 (2" ... 12") Flat face flanges PN 16 (232 psi): DN 350 ... 1200 (14" ... 48") Raised face flanges PN 40 (580 psi): DN 15 ... 40 (½" ... 1½") Flat face flanges	Raised face (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")
• ANSI B16.5	Class 150 lb: ½" ... 24"	Class 150 lb: 1" ... 24"
• AWWA C-207	Class D: 28" ... 48", flat face	Class D: 28" ... 78", flat face
• AS4087	PN 16 (DN 50 ... 1200), (2" ... 48") 16 bar (232 psi)	PN 16 (DN 50 ... 1200), (2" ... 48") 16 bar (232 psi)
• JIS B 2220:2004	-	K10 (1" ... 24")
<b>Rated Operation conditions</b>		
Ambient temperature		
• Sensor	-40 ... +70 °C (-40 ... +158 °F)	-20 ... +70 °C (-4 ... +158 °F)
• With compact transmitter MAG 5000/6000	-20 ... +60 °C (-4 ... +140 °F)	-20 ... +60 °C (-4 ... +140 °F)
• With compact transmitter MAG 6000 I	-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) 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)	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)
Enclosure rating		
• Standard	IP67 to EN 60529 / NEMA 4X/6 (1 mH <sub>2</sub> O for 30 min)	IP67 to EN 60529 / NEMA 4X/6 (1 mH <sub>2</sub> O for 30 min)
• Option	IP68 to EN 60529 / NEMA 6P (10 mH <sub>2</sub> O continuously)	IP68 to EN 60529 / NEMA 6P (10 mH <sub>2</sub> O continuously)
Pressure drop	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	Insignificant
Test pressure	1.5 x PN (where applicable)	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 Sensor: 3.17 grms Sensor with compact MAG 5000/6000 mounted transmitter: 3.17 grms Sensor with compact MAG 6000 I mounted transmitter: 1.14 grms	18 ... 1000 Hz random in x, y, z, directions for 2 hours according to EN 60068-2-36 Sensor: 3.17 grms Sensor with compact MAG 5000/6000 mounted transmitter: 3.17 grms Sensor with compact MAG 6000 I mounted transmitter: 1.14 grms

# Flow Measurement

## SITRANS F M

### Flow sensor MAG 5100 W

Product characteristic	Mainly for the European market (7ME6520)	Mainly for the non-European market (7ME6580)
	EPDM or NBR lining	Ebonite lining
<u>Medium conditions</u>		
Temperature of medium		
• NBR	-10 ... +70 °C (14 ... 158 °F)	-
• EPDM	-10 ... +70 °C (14 ... 158 °F)	-
• EPDM (MI-001)	0.1 ... 30 °C (32 ... 76 °F)	-
• Ebonite	-	-10 ... +70 °C (14 ... 158 °F)
EMC	2004/108/EC	2004/108/EC
<b>Design</b>		
Material		
• Housing and flanges	Carbon steel, with corrosion-resistant two-component epoxy coating (min. 150 µm) Corrosivity category C4, according to ISO 12944-2	Carbon steel ASTM A 105, with corrosion-resistant two-component epoxy coating (min. 150 µm) Corrosivity category C4, according to ISO 12944-2
• Measuring pipe	AISI 304 (1.4301)	AISI 304 (1.4301)
• Electrode	Hastelloy C	Hastelloy C
• Grounding electrode	Hastelloy C	Hastelloy C
• Terminal box	Fibre glass reinforced polyamide	Fibre glass reinforced polyamide
<b>Certificates and approvals</b>		
Calibration		
• Standard production calibration, calibration report shipped with sensor	Zero-point, 2 x 25 % and 2 x 90 % for sizes DN 15 -300  Zero-point, 1 x 25 % and 1 x 90 % for sizes DN 350-1200	Zero-point, 2 x 25 % and 2 x 90 %
Custody Transfer (only together with MAG 6000 CT)	OIML R 49 pattern approval cold water (Denmark and Germany): DN 50 ... 300 (2" ... 12") MI 001 cold water (EU): DN 50 ... 300 (2" ... 12")	
Drinking water approvals	EPDM liner: NSF/ANSI Standard 61 (Cold water, US) WRAS (WRc, BS6920 cold water, GB) ACS (F), DVGW W270 (D) Belgaqua (B)	NSF/ANSI Standard 61 (Cold water, US) WRAS (WRc, BS6920 cold water, GB)
Other approvals	MCERTS PED conforming: All EN1092-1 flanges and ANSI Class 150 (< DN 300 (<12")) – 97/23 EC <sup>1)</sup> CRN CSA Class 1, Div 2 FM Class 1, Div 2	PED (All EN1092-1 flanges conforms to PED) – 97/23 EC <sup>1)</sup> (only ≤ DN 600 (≤ 24")) FM Class 1, Div 2 CSA Class 1, Div 2

<sup>1)</sup> 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:

- Meters used in networks for the supply, distribution and discharge of water.
- Meters used in pipelines for the conveyance of any fluid from offshore to onshore.
- Meters used in the extraction of petroleum or gas, including Christmas tree and manifold equipment.
- Any meter mounted on a ship or mobile offshore platform.

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

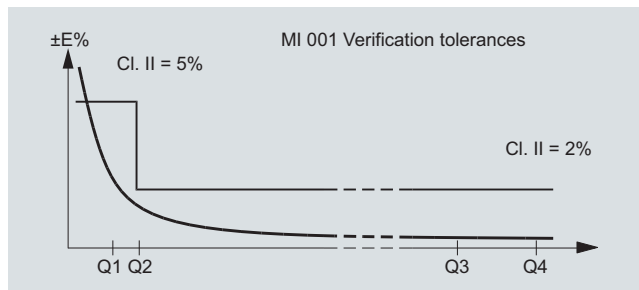
MAG 5100 W CT program is type approved according to international water meter standard OIML R 49. Since the first November 2006 the MI-001 water meter directive is in force, which means that all water meters can be sold across the EU borders if the water meters contain a MI-001 label.

The MAG 5100 W MI-001 verified and labeled products are a Class II approval according to Directive 2004/22/EC of the European Parliament and Council of March 31, 2004 on measuring instruments (MID), Annex MI-001 in the sizes from DN 50 to DN 300 (Order 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) 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:

DN	50 (2")	65 (2½")	80 (3")	100 (4")	125 (5")	150 (6")	200 (8")	250 (10")	300 (12")
„R“ Q3/Q1	25	25	25	25	25	25	25	25	25
Q4 [m³/h]	20	31.25	50	78.75	125	200	312.5	500	787.5
<b>Q3 [m³/h]</b>	<b>16</b>	<b>25</b>	<b>40</b>	<b>63</b>	<b>100</b>	<b>160</b>	<b>250</b>	<b>400</b>	<b>630</b>
Q2 [m³/h]	1.02	1.6	2.6	4.03	6.4	10.24	16	25.6	40.32
Q1 [m³/h]	0.64	1.00	1.60	2.52	4.0	6.4	10.0	16.0	25.2

DN	50 (2")	65 (2½")	80 (3")	100 (4")	125 (5")	150 (6")	200 (8")	250 (10")	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
<b>Q3 [m³/h]</b>	<b>16</b>	<b>25</b>	<b>40</b>	<b>63</b>	<b>100</b>	<b>160</b>	<b>250</b>	<b>400</b>	<b>630</b>
Q2 [m³/h]	0.41	0.63	1.02	1.6	2.54	4.06	6.35	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

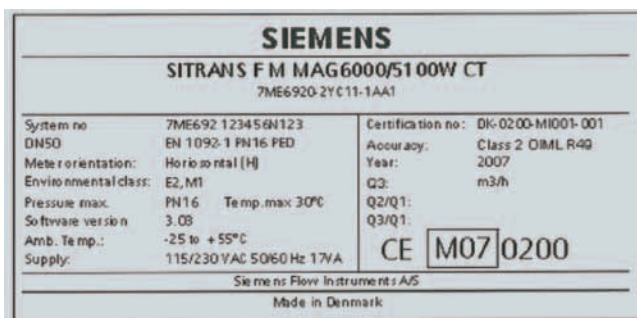
DN	50 (2")	65 (2½")	80 (3")	100 (4")	125 (5")	150 (6")	200 (8")	250 (10")	300 (12")
„R“ Q3/Q1	80	80	80	80	80	80	80	80	80
Q4 [m³/h]	20	31.25	50	78.75	125	200	312.5	500	787.5
<b>Q3 [m³/h]</b>	<b>16</b>	<b>25</b>	<b>40</b>	<b>63</b>	<b>100</b>	<b>160</b>	<b>250</b>	<b>400</b>	<b>630</b>
Q2 [m³/h]	0.32	0.50	0.80	1.20	2.00	3.20	5.0	8.0	12.6
Q1 [m³/h]	0.20	0.31	0.50	0.75	1.25	2.00	3.13	5.0	7.90

DN	50 (2")	65 (2½")	80 (3")	100 (4")	125 (5")	150 (6")	200 (8")	250 (10")	300 (12")
„R“ Q3/Q1	160	160	160	160	160	160	160	160	160
Q4 [m³/h]	50	78.75	125	200	312.5	500	787.5	1250	2000
<b>Q3 [m³/h]</b>	<b>40</b>	<b>63</b>	<b>100</b>	<b>160</b>	<b>250</b>	<b>400</b>	<b>630</b>	<b>1000</b>	<b>1600</b>
Q2 [m³/h]	0.40	0.63	1.00	1.60	2.50	4.00	6.3	10.0	16.0
Q1 [m³/h]	0.25	0.39	0.63	1.00	1.56	2.50	3.94	6.3	10.0

DN	50 (2")	65 (2½")	80 (3")	100 (4")	125 (5")	150 (6")	200 (8")	250 (10")	300 (12")
„R“ Q3/Q1	200	200	200	200	200	200	200	200	200
Q4 [m³/h]	50	78.75	125	200	312.5	500	787.5	1250	2000
<b>Q3 [m³/h]</b>	<b>40</b>	<b>63</b>	<b>100</b>	<b>160</b>	<b>250</b>	<b>400</b>	<b>630</b>	<b>1000</b>	<b>1600</b>
Q2 [m³/h]	0.32	0.50	0.80	1.28	2.00	3.20	5.0	8.0	12.8
Q1 [m³/h]	0.20	0.32	0.50	0.80	1.25	2.00	3.15	5.0	8.0

DN	50 (2")	65 (2½")	80 (3")	100 (4")	125 (5")	150 (6")	200 (8")	250 (10")	300 (12")
„R“ Q3/Q1	250	250	250	250	250	250	250	250	250
Q4 [m³/h]	50	78.75	125	200	312.5	500	787.5	1250	2000
<b>Q3 [m³/h]</b>	<b>40</b>	<b>63</b>	<b>100</b>	<b>160</b>	<b>250</b>	<b>400</b>	<b>630</b>	<b>1000</b>	<b>1600</b>
Q2 [m³/h]	0.26	0.40	0.64	1.02	1.60	2.56	4.0	6.4	10.24
Q1 [m³/h]	0.16	0.25	0.40	0.64	1.00	1.60	2.52	4.0	6.4

The Label is placed on the side of the encapsulation. An example of the product label is shown below:



OIML R 49 / MI 001 approvals valid for:

- DN 50 to 300 mm (2" to 12")
- Horizontal installation
- Compact or remote with max. 3 m cable
- Power supply 115/230 V AC

Other restrictions may apply (see certificate)



# Flow Measurement

## SITRANS F M

### Flow sensor MAG 5100 W

Selection and Ordering data	Order No.
<b>Sensor SITRANS F M MAG 5100 W</b>	<b>7ME6580-</b>
Hastelloy electrodes, carbon steel flanges, Non EU water markets	
<b>Diameter</b>	
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
(42")	7 U
(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
<b>Flange norm and pressure rating</b>	
<u>to EN 1092-1</u>	
PN 6 (DN 1400 ... 2000 (54" ... 78"))	◆ A
PN 10 (DN 200 ... 2000 (8" ... 78"))	◆ B
PN 16 (DN 65 ... 600 (2½" ... 24"))	◆ C
PN 16, non PED (DN 700 ... 1200/28" ... 48") (pending)	◆ D
PN 40 (DN 25 ... 50 (1" ... 2"))	◆ F
<u>to ANSI B16.5</u>	
class 150 (1" ... 24")	J
<u>to AWWA C-207</u>	
Class D (28" ... 78")	L
<u>to AS 4087</u>	
PN 16 (DN 50 ... 1200 (2" ... 48"))	N
<u>to JIS</u>	
B 2220:2004 K10 (1" ... 24")	R
<b>Flange material</b>	
Carbon steel flanges ASTM A 105	1
<b>Liner material</b>	
Ebonite Hard Rubber	4
<b>Electrode material</b>	
Hastelloy	2

Selection and Ordering data	Order No.
<b>Sensor SITRANS F M MAG 5100 W</b>	<b>7ME6580-</b>
Hastelloy electrodes, carbon steel flanges, Non EU water markets	
<b>Transmitter with display</b>	
Sensor for remote transmitter (Order transmitter separately)	◆ A
MAG 6000, Polyamid, 11 ... 30 V DC/11 ... 24V AC	◆ H
MAG 6000, Polyamid, 115 ... 230 V AC	◆ J
MAG 5000, Polyamid, 11 ... 30 V DC/11 ... 24V AC	◆ K
MAG 5000, Polyamid, 115 ... 230 V AC	◆ L
<b>Communication</b>	
No communication, add-on possible	◆ 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
<b>Cable glands/terminal box</b>	
Metric	◆ 1
½" NPT	◆ 2
◆ Short lead time (details in PMD)	

Selection and Ordering data	Order code
<b>Additional information</b>	
Please add <b>"-Z"</b> to Order No. and specify Order code(s) and plain text.	
Customer-specific converter setup	<b>C14</b>
Factory certificate according to EN 10204-2.2	<b>C15</b>
Factory certificate according to EN 10204-2.1	<b>Y17</b>
Tag name plate, stainless steel fixed with SS wire	<b>Y18</b>
Tag name plate, plastic (self-adhesive)	<b>Y18</b>
Customer-specific converter setup	<b>Y20</b>
Sensor cables wired (specify cable order no.)	<b>Y40</b>
Sensor for remote transmitter's junction box potted to IP68 with wired cable (specify cable order no.)	<b>Y41</b>
Other postproduction requirements (add desired text)	<b>Y99</b>

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

Description	Order No.
Operating instructions for SITRANS F M MAG 5100 W	
• English	<b>A5E03063678</b>
This device is shipped with a Quick Start guide and a CD containing further SITRANS F literature.	
All literature is also available for free at: <a href="http://www.siemens.com/flowdocumentation">http://www.siemens.com/flowdocumentation</a>	

Description	Order No.
Potting kit for terminal box of SITRANS F M sensors for IP68/NEMA 6P (Not for Ex)	◆ <b>FDK-085U0220</b>



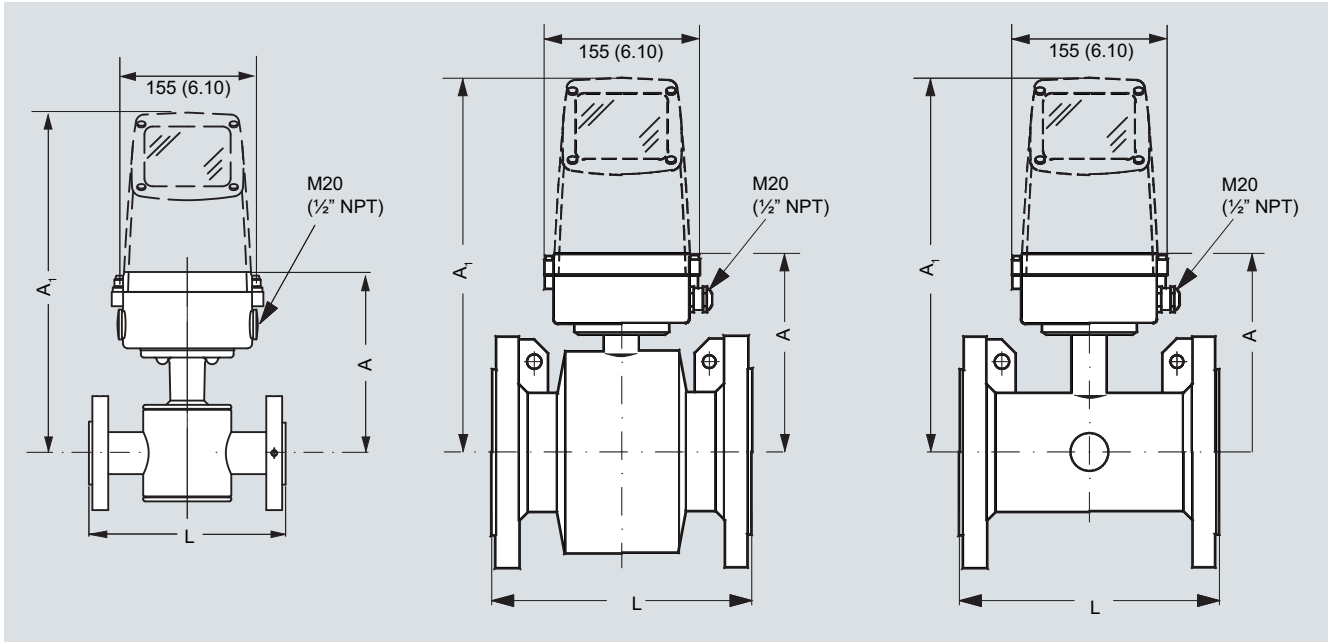
◆ Short lead time (details in PMD)

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.

Product selector link: [www.pia-selector.automation.siemens.com](http://www.pia-selector.automation.siemens.com)

Please also see [www.siemens.com/SITRANSFordering](http://www.siemens.com/SITRANSFordering) for practical examples of ordering

## Dimensional drawings



Nominal size A						L													
		7ME6520 NBR or EPDM liner		7ME6580 Ebonite liner		PN 6 <sup>1)</sup> , PN 10	PN 16		PN 16 non PED		PN 40		Class 150 / AWWA		JIS 10K		AS		
[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]
15	½	177	7.0	-	-	-	-	-	-	-	-	200	7.9	200	7.9	-	-	-	-
25	1	187	7.4	187	7.4	-	-	-	-	-	-	200	7.9	200	7.9	200	7.9	200	7.9
40	1½	202	8.0	197	7.8	-	-	-	-	-	-	200	7.9	200	7.9	200	7.9	200	7.9
50	2	188	7.4	205	8.1	-	-	-	-	-	-	200	7.9	200	7.9	200	7.9	200	7.9
65	2½	194	7.6	212	8.3	-	-	200	7.9	-	-	-	-	200	7.9	200	7.9	200	7.9
80	3	200	7.9	222	8.7	-	-	200	7.9	-	-	-	-	200	7.9	200	7.9	200	7.9
100	4	207	8.1	242	9.5	-	-	250	9.8	-	-	-	-	250	9.8	250	9.8	250	9.8
125	5	217	8.5	255	10.0	-	-	250	9.8	-	-	-	-	250	9.8	250	9.8	-	-
150	6	232	9.1	276	10.9	-	-	300	11.8	-	-	-	-	300	11.8	300	11.8	300	11.8
200	8	257	10.1	304	12.0	350	13.8	350	13.8	-	-	-	-	350	13.8	350	13.8	350	13.8
250	10	284	11.2	332	13.1	450	17.7	450	17.7	-	-	-	-	450	17.7	450	17.7	450	17.7
300	12	310	12.2	357	14.1	500	19.7	500	19.7	-	-	-	-	500	19.7	500	19.7	500	19.7
350	14	382	15.0	362	14.3	550	21.7	550	21.7	-	-	-	-	550	21.7	550	21.7	550	21.6
400	16	407	16.0	387	15.2	600	23.6	600	23.6	-	-	-	-	600	23.6	600	23.6	600	23.6
450	18	438	17.2	418	16.5	600	23.6	600	23.6	-	-	-	-	600	23.6	600	23.6	600	23.6
500	20	463	18.2	443	17.4	600	23.6	600	23.6	-	-	-	-	600	23.6	600	23.6	600	23.6
600	24	514	20.2	494	19.4	600	23.6	600	23.6	-	-	-	-	600	23.6	600	23.6	600	23.6
700	28	564	22.2	544	21.4	700	27.6	700	27.6	700	27.6	-	-	700	27.6	-	-	700	27.6
750	30	591	23.3	571	22.5	-	-	-	-	-	-	-	-	750	29.5	-	-	750	-
800	32	616	24.3	606	23.9	800	31.5	800	31.5	800	31.5	-	-	800	31.5	-	-	800	31.5
900	36	663	26.1	653	25.7	900	35.4	900	35.4	900	35.4	-	-	900	35.4	-	-	900	35.4
1000	40	714	28.1	704	27.7	1000	39.4	1000	39.4	1000	39.4	-	-	1000	39.4	-	-	1000	39.4
	42	714	28.1	704	27.7	-	-	-	-	-	-	-	-	1000	39.4	-	-	-	-
	44	765	30.1	755	29.7	-	-	-	-	-	-	-	-	1100	43.3	-	-	-	-
1200	48	820	32.3	810	31.9	1200	47.2	1200	47.2	1200	47.2	-	-	1200	47.2	-	-	1200	47.2
1400	54	-	-	925	36.4	1400	55.1	-	-	1400	55.1	-	-	1400	55.1	-	-	-	-
1500	60	-	-	972	38.2	1500	59.1	-	-	1500	59.1	-	-	1500	59.1	-	-	-	-
1600	66	-	-	1025	40.4	1600	63.0	-	-	1600	63.0	-	-	1600	63.0	-	-	-	-
1800	72	-	-	1123	44.2	1800	70.9	-	-	1800	70.9	-	-	1800	70.9	-	-	-	-
2000	78	-	-	1223	48.1	2000	78.7	-	-	2000	78.7	-	-	2000	78.7	-	-	-	-

1) PN 6 only in size DN 1400 ... DN 2000 (54" ... 78")

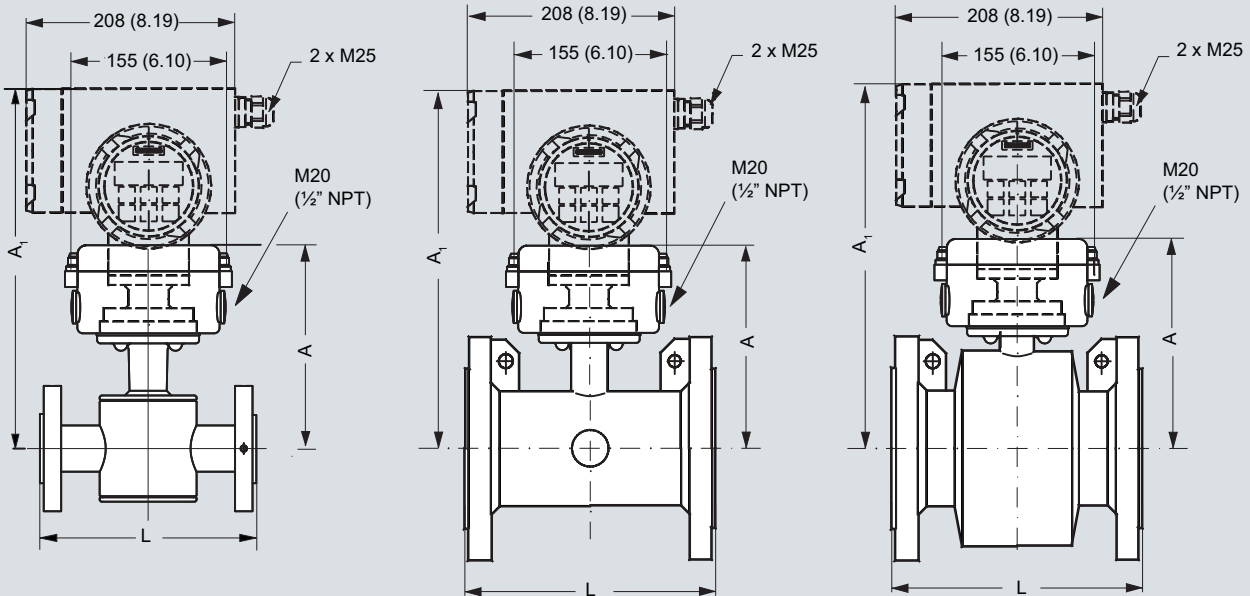
- not available

# Flow Measurement

## SITRANS F M

### Flow sensor MAG 5100 W

MAG 5100 W / 6000 I Compact



Nominal size	A		A <sub>1</sub>				L																
	7ME6520 NBR or EPDM liner		7ME6580 Ebonite liner		7ME6520 NBR or EPDM liner		7ME6580 Ebonite liner		PN 10		PN 16		PN 16 non PED		PN 40		Class 150 / AWWA		JIS 10K		AS		
[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	[mm] [inch]	
15	1/2	177	7.0	-	-	-	-	-	-	-	-	-	-	-	200	7.9	200	7.9	-	-	-	-	
25	1	187	7.4	187	7.4	340	13.4	338	13.3	-	-	-	-	-	200	7.9	200	7.9	200	7.9	200	7.9	
40	1 1/2	202	8.0	197	7.8	350	13.8	348	13.7	-	-	-	-	-	200	7.9	200	7.9	200	7.9	200	7.9	
50	2	188	7.4	205	8.1	341	13.4	356	14.0	-	-	-	-	-	200	7.9	200	7.9	200	7.9	200	7.9	
65	2 1/2	194	7.6	212	8.3	347	13.7	363	14.3	-	-	200	7.9	200	7.9	-	-	200	7.9	200	7.9	200	7.9
80	3	200	7.9	222	8.7	353	13.9	373	14.7	-	-	200	7.9	200	7.9	-	-	200	7.9	200	7.9	200	7.9
100	4	207	8.1	242	9.5	360	14.2	393	15.5	-	-	250	9.8	250	9.8	-	-	250	9.8	250	9.8	250	9.8
125	5	217	8.5	255	10.0	370	14.6	406	16.0	-	-	250	9.8	250	9.8	-	-	250	9.8	250	9.8	-	-
150	6	232	9.1	276	10.9	385	15.2	427	16.8	-	-	300	11.8	300	11.8	-	-	300	11.8	300	11.8	300	11.8
200	8	257	10.1	304	12.0	410	16.1	455	17.9	350	13.8	350	13.8	350	13.8	-	-	350	13.8	350	13.8	350	13.8
250	10	284	11.2	332	13.1	437	17.2	483	19.0	450	17.7	450	17.7	450	17.7	-	-	450	17.7	450	17.7	450	17.7
300	12	310	12.2	357	14.1	463	18.2	508	20.0	500	19.7	500	19.7	500	19.7	-	-	500	19.7	500	19.7	500	19.7
350	14	382	15.0	362	14.3	535	21.1	513	20.2	550	21.7	550	21.7	550	21.7	-	-	550	21.7	550	21.7	550	21.7
400	16	407	16.0	387	15.2	560	22.1	538	21.2	600	23.6	600	23.6	600	23.6	-	-	600	23.6	600	23.6	600	23.6
450	18	438	17.2	418	16.5	591	23.3	569	22.4	600	23.6	600	23.6	600	23.6	-	-	600	23.6	600	23.6	600	23.6
500	20	463	18.2	443	17.4	616	24.3	594	23.4	600	23.6	600	23.6	600	23.6	-	-	600	23.6	600	23.6	600	23.6
600	24	514	20.2	494	19.4	667	26.3	645	25.4	600	23.6	600	23.6	600	23.6	-	-	600	23.6	600	23.6	600	23.6
700	28	564	22.2	544	21.4	717	28.2	695	27.4	700	27.6	700	27.6	700	27.6	-	-	700	27.6	-	-	700	27.6
750	30	591	23.3	571	22.5	744	29.3	722	28.4	-	-	-	-	-	-	-	-	750	29.5	-	-	750	-
800	32	616	24.3	606	23.9	779	30.7	757	29.8	800	31.5	800	31.5	800	31.5	-	-	800	31.5	-	-	800	31.5
900	36	663	26.1	653	25.7	826	32.5	804	31.7	900	35.4	900	35.4	900	35.4	-	-	900	35.4	-	-	900	35.4
1000	40	714	28.1	704	27.7	877	34.5	906	35.7	1000	39.4	1000	39.4	1000	39.4	-	-	1000	39.4	-	-	1000	39.4
42	714	28.1	704	27.7	877	34.5	-	-	-	-	-	-	-	-	-	-	-	1000	39.4	-	-	-	-
44	765	30.1	755	29.7	928	36.5	906	35.7	-	-	-	-	-	-	-	-	-	1100	43.3	-	-	-	-
1200	48	820	32.3	810	31.9	983	38.7	961	37.8	1200	47.2	1200	47.2	1200	47.2	-	-	1200	47.2	-	-	1200	47.2
1400	54	-	-	925	36.4	-	-	1076	42.4	1400	55.1	-	-	1400	55.1	-	-	1400	55.1	-	-	-	-
1500	60	-	-	972	38.2	-	-	1123	44.2	1500	59.1	-	-	1500	59.1	-	-	1500	59.1	-	-	-	-
1600	66	-	-	1025	40.4	-	-	1176	46.3	1600	63.0	-	-	1600	63.0	-	-	1600	63.0	-	-	-	-
1800	72	-	-	1123	44.2	-	-	1274	50.2	1800	70.9	-	-	1800	70.9	-	-	1800	70.9	-	-	-	-
2000	78	-	-	1223	48.1	-	-	1374	54.1	2000	78.7	-	-	2000	78.7	-	-	2000	78.7	-	-	-	-

- not available

## Weight

Nominal size		7ME6520 NBR or EPDM liner										7ME6580 Ebonite liner	
		PN 10		PN 16		PN 40		Class 150/AWWA		AS		PN 16	
[mm]	[inch]	[kg]	[lbs]	[kg]	[lbs]	[kg]	[lbs]	[kg]	[lbs]	[kg]	[lbs]	[kg]	[lbs]
15	½	-	-	-	-	4	9	4	9	4	9	5	11
25	1	-	-	-	-	6	12	5	11	4	9	5	11
40	1½	-	-	-	-	8	18	7	15	7	15	8	17
50	2	-	-	9	20	-	-	8	20	9	20	9	20
65	2½	-	-	10.7	24	-	-	11	24	10.7	24	11	24
80	3	-	-	11.6	26	-	-	13	28	11.6	26	12	26
100	4	-	-	15.2	33	-	-	19	41	15.2	33	16	35
125	5	-	-	20.4	45	-	-	24	52	-	-	19	42
150	6	-	-	26	57	-	-	29	64	26	57	27	60
200	8	48	106	48	106	-	-	56	124	48	106	40	88
250	10	64	141	69	152	-	-	79	174	69	152	60	132
300	12	76	167	86	189	-	-	110	243	86	189	80	176
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	-	-	1140	2513
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

- not available

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).