

**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  $\pm 0.4\% \pm 1$  mm/s (incl. sensor)
- MAG 6000: Max. measuring error  $\pm 0.2\% \pm 1$  mm/s (incl. sensor, see also sensor specifications) and with additional features such as: "plug & play" add-on 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 117, OIML R 49, MI-001, PTB K 7.2 and OE12/C 040 for chilled water
- MAG 6000 with add-on bus modules for HART, FOUNDATION Fieldbus H1, DeviceNet, Modbus RTU/RS 485, 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**

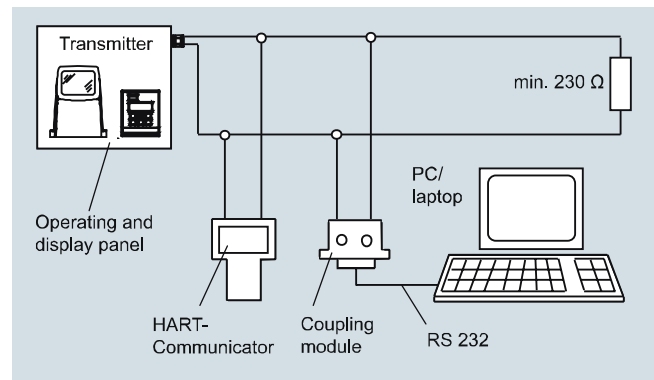
The MAG 5000/6000 are transmitters with a built-in alphanumeric display in several languages. The transmitters evaluate the signals from the associated electromagnetic sensors and also fulfil the task of a power supply unit which provides the magnet coils with a constant current.

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

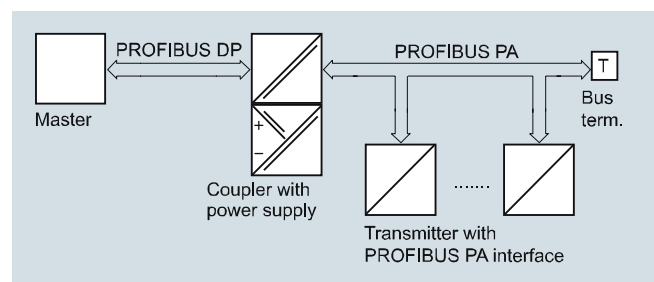
**Displays and controls**

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

<b>Mode of operation and design</b>	
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	$> 1 \times 10^{14} \Omega$
<b>Input</b>	
<b>Digital input</b>	11 ... 30 V DC, $R_i = 4.4 \text{ K}\Omega$
• Activation time	50 ms
• Current	$I_{11 \text{ V DC}} = 2.5 \text{ mA}$ , $I_{30 \text{ V DC}} = 7 \text{ mA}$
<b>Output</b>	
<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.
<b>Max. measuring error (incl. sensor and zero point)<sup>1)</sup></b>	
• MAG 5000	0.4 % $\pm 1 \text{ mm/s}$
• MAG 6000	0.2 % $\pm 1 \text{ mm/s}$
<b>Rated operation conditions</b>	
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> <li>MI-001 version: -25 ... +55 °C (-13 ... +131 °F)</li> <li>Custody transfer (CT) version: -20 ... +50 °C (-4 ... +122 °F)</li> </ul>
• Storage	-40 ... +70 °C (-40 ... +158 °F)
<b>Mechanical load (vibration)</b>	
Compact version	18 ... 1000 Hz, 3.17 g RMS, sinusoidal in all directions to IEC 60068-2-36
19" insert	1 ... 800 Hz, 1 g, sinusoidal in all directions to IEC 60068-2-36
<b>Degree of protection</b>	
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

<b>Display and keypad</b>	
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
<b>Design</b>	
Enclosure material	Fiber glass reinforced polyamide; stainless steel AISI 316/1.4436 (IP65)
• Compact version	
• 19" insert	Standard 19" insert of aluminum/steel (DIN 41494), width: 21 TE, height: 3 HE
• Back of panel	IP20/NEMA 1; Aluminum
• Panel mounting	IP20/NEMA 1 (prepared for IP65/NEMA 2 display side); ABS plastic
• Wall mounting	IP66/NEMA 4X; ABS plastic
<b>Dimensions</b>	
Compact version	See dimensional drawings
19" insert	See dimensional drawings
<b>Weight</b>	
Compact version	0.75 kg (2 lb)
19" insert	See dimensional drawings
<b>Power supply</b>	
	<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>
<b>Power consumption</b>	
	<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> <li>24 V DC: 8.4 VA, <math>I_N = 350 \text{ mA}</math>, <math>I_{ST} = 4 \text{ A}</math> (10 ms)</li> </ul>
	$I_{ST} = 4 \text{ A}$ (250 ms): For solar panel please secure stable current supply
<b>Certificates and approvals</b>	
General purpose	<ul style="list-style-type: none"> <li>CE (LVD, EMC, PED, RoHS)</li> <li>UL (c-UL-us)</li> </ul>
Hazardous areas	<ul style="list-style-type: none"> <li>FM, CSA</li> <li>- NI Class I Div. 2 Groups A, B, C, D</li> </ul>
Custody transfer	<ul style="list-style-type: none"> <li>Cold water: MI-001</li> <li>Chilled water <ul style="list-style-type: none"> <li>- PTB K 7.2 (Germany)</li> <li>- OE12/C 040 (Austria)</li> <li>- TS 27.02 008 (Denmark)</li> </ul> </li> </ul>
Marine	<ul style="list-style-type: none"> <li>ABS</li> <li>Bureau Veritas</li> <li>DNV</li> <li>GL</li> <li>Lloyd' s Register of Shipping</li> </ul>
(only for remote version with MAG 5100 W, DN 50 ... DN 300)	
Others	<ul style="list-style-type: none"> <li>CMC/CPA (China)</li> <li>C-TICK (Australia and New Zealand EMC)</li> <li>EAC (Russia, Belarus, Kazakhstan)</li> <li>KCC (South Korea)</li> </ul>

**Communication**

Standard

- MAG 5000

- MAG 6000

Optional (MAG 6000 only)

- MAG 5000/6000 CT

Without serial communication or HART as option  
Prepared for client-mounted add-on modules  
HART, Modbus RTU/RS 485, FOUNDATION Fieldbus H1, DeviceNet, PROFIBUS PA, PROFIBUS DP as add-on modules  
No communication modules approved

<sup>1)</sup> For detailed accuracy specifications, see page 3/22

**Safety barrier (e/ia)**

Application	For use with MAG 5000/6000 19" and MAG 1100 Ex/MAG 3100 Ex		
<b>Ex approval</b>	MAG 1100 Ex [EEx e ia] IIB ATEX, EAC Ex MAG 3100 Ex [EEx e ia] IIC ATEX, EAC Ex		
<b>Cable parameter</b>	Group	Capacity in $\mu\text{F}$	Inductance in mH
Electrode	IIC	$\leq 4.1$	$\leq 80$
	IIB	$\leq 45$	$\leq 87$
	IIA	$\leq 45$	$\leq 87$
<b>Ambient temperature</b>			
• During operation	-20 ... +50 °C (-4 ... +122 °F)		
• During storage	-20 ... +70 °C (-4 ... +158 °F)		
<b>Enclosure</b>			
• Material	Standard 19" insert in aluminum/steel (DIN 41494)		
• Width	21 TE (4.75")		
• Height	3 HE (5.25")		
• Rating	IP20 / NEMA 1 to EN 60529		
• Mechanical load	1 g, 1 ... 800 Hz sinusoidal in all directions to EN 60068-2-36		





## Flow Measurement


### SITRANS F M

#### Transmitter MAG 5000/6000






#### Selection and Ordering data






##### Transmitter MAG 5000

Description	Article 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 (only with approval marks, no verification – only a complete flowmeter can be verified, i.e. sensor together with the transmitter); 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>	

• We can offer shorter delivery times for configurations designated with the Quick Ship Symbol . For details see page 10/11 in the appendix.

##### Transmitter MAG 6000

Description	Article 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, stainless steel AISI 316/1.4436 (only for sensor with stainless steel terminal box) (for remote version order stainless steel 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, without verification (no approval marks - only a complete flowmeter can be verified, i.e. sensor together with the transmitter); 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>7ME6920-1AA30-1AD0</b></li> <li>• <b>7ME6920-1AA10-1AD0</b></li> </ul>	
<u>Spare part transmitter for CT systems produced before 12/2016 or with firmware version 3.03</u> <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 frequency 44 Hz 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>	


Description	Article No.	
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 frequency 44 Hz 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>	
MAG 6000 19" insert, complete mounted with IP66/ NEMA 4X wall mounting enclosure in ABS plastic; 115 ... 230 V AC, 50/60 Hz; cable gland PG13.5	<b>7ME6920-2EA10-1AA0</b>	
MAG 6000 SV 19" insert with safety barrier for Ex-approved sensors, complete mounted with IP66/NEMA 4X wall mounting enclosure in ABS plastic, 115 ... 230 V AC, 50/60 Hz; cable gland PG13.5 <ul style="list-style-type: none"> <li>• For ATEX 2G D sensors</li> </ul>	<b>7ME6920-2MA11-1AA0</b>	
MAG 6000 SV 19" insert, complete mounted with IP66/NEMA 4X wall mounting enclosure in ABS plastic, special excitation frequency 44 Hz for Batch application DN ≤ 25/1"; cable gland PG13.5 <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>◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ◆. For details see page 10/11 in the appendix.</li> </ul>	<ul style="list-style-type: none"> <li><b>7ME6920-2EB30-1AA0</b></li> <li><b>7ME6920-2EB10-1AA0</b></li> </ul>	

### Operating instructions for SITRANS F M MAG 5000/6000

Description	Article No.
For SITRANS F M MAG 5000/6000 IP67 <ul style="list-style-type: none"> <li>• English</li> <li>• German</li> </ul>	<ul style="list-style-type: none"> <li><b>A5E02338368</b></li> <li><b>A5E02944982</b></li> </ul>
For SITRANS F M MAG 5000/6000 19" <ul style="list-style-type: none"> <li>• English</li> </ul>	<b>A5E02082880</b>

All literature is available to download for free, in a range of languages, at [www.siemens.com/processinstrumentation/documentation](http://www.siemens.com/processinstrumentation/documentation)

### Communication modules for MAG 6000



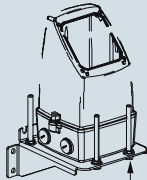


Description	Article No.	
HART (not for MAG 6000 I)	◆ <b>FDK:085U0226</b>	
Modbus RTU/RS 485	◆ <b>FDK:085U0234</b>	
PROFIBUS PA Profile 3	◆ <b>FDK:085U0236</b>	
PROFIBUS DP Profile 3	◆ <b>FDK:085U0237</b>	
DeviceNet	◆ <b>FDK:085U0229</b>	
FOUNDATION Fieldbus H1	<b>A5E02054250</b>	

### Operating instructions for SITRANS F add-on modules

Description	Article No.
HART <ul style="list-style-type: none"> <li>• English</li> </ul>	<b>A5E03089708</b>
PROFIBUS PA/DP <ul style="list-style-type: none"> <li>• English</li> <li>• German</li> </ul>	<ul style="list-style-type: none"> <li><b>A5E00726137</b></li> <li><b>A5E01026429</b></li> </ul>
Modbus <ul style="list-style-type: none"> <li>• English</li> <li>• German</li> </ul>	<ul style="list-style-type: none"> <li><b>A5E00753974</b></li> <li><b>A5E03089262</b></li> </ul>
FOUNDATION Fieldbus <ul style="list-style-type: none"> <li>• English</li> <li>• German</li> </ul>	<ul style="list-style-type: none"> <li><b>A5E02318728</b></li> <li><b>A5E02488856</b></li> </ul>
DeviceNet <ul style="list-style-type: none"> <li>• English</li> </ul>	<b>A5E03089720</b>

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### Accessories for MAG 5000 and MAG 6000

Description	Article No.	
Accessory kit for remote use of sensor with two 5-pin terminal blocks	<b>A5E34827189</b>	
Wall mounting unit for MAG 5000/6000 IP67/NEMA 4X/6, terminal box in polyamide <sup>1)</sup> <ul style="list-style-type: none"> <li>• 4 x M20 cable glands</li> <li>• 4 x 1/2" NPT cable glands</li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>FDK:085U1018</b></li> <li>◆ <b>FDK:085U1053</b></li> </ul>	
Special wall mounting unit for MAG 5000/6000 IP67/ NEMA 4X/6, mounting bracket in stainless steel AISI 316 (1.4401), terminal box in polyamide <ul style="list-style-type: none"> <li>• 4 x M20 cable glands</li> <li>• 4 x 1/2" NPT cable glands</li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>A5E36699697</b></li> <li>◆ <b>A5E36699699</b></li> </ul>	
Sun lid for MAG 5000/6000 transmitter (Frame and lid)	<b>A5E02328485</b>	
Standard coil or electrode cable, 3 x 1.5 mm <sup>2</sup> / 18 gage, single shielded with PVC jacket, Temp. range: -30 ... +70 °C (-22 ... +158 °F) <ul style="list-style-type: none"> <li>• 5 m (16.5 ft)</li> <li>• 10 m (33 ft)</li> <li>• 20 m (65 ft)</li> <li>• 30 m (98 ft)</li> <li>• 40 m (130 ft)</li> <li>• 50 m (164 ft)</li> <li>• 60 m (200 ft)</li> <li>• 100 m (330 ft)</li> <li>• 150 m (500 ft)</li> <li>• 200 m (650 ft)</li> <li>• 500 m (1650 ft)</li> </ul> <ul style="list-style-type: none"> <li>◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ◆. For details see page 10/11 in the appendix.</li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>A5E02296523</b></li> <li>◆ <b>FDK:083F0121</b></li> <li>◆ <b>FDK:083F0210</b></li> <li>◆ <b>A5E02297309</b></li> <li>◆ <b>FDK:083F0211</b></li> <li>◆ <b>A5E02297317</b></li> <li>◆ <b>FDK:083F0212</b></li> <li><b>FDK:083F0213</b></li> <li><b>FDK:083F3052</b></li> <li><b>FDK:083F3053</b></li> <li><b>FDK:083F3054</b></li> </ul>	



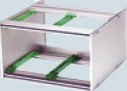










◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ◆. For details see page 10/11 in the appendix.

1) For stainless steel wall mounting kit, order:  
- M20: FDK:085U1018 and A5E00836867  
- 1/2" NPT: FDK:085U1053 and A5E00836868

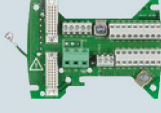









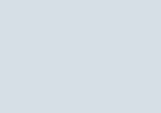









## Flow Measurement

### SITRANS F M

#### Transmitter MAG 5000/6000

Description	Article No.		Description	Article No.	
Special electrode cable <sup>1)</sup> (empty pipe detection or low conductivity), 3 x 0.25 mm <sup>2</sup> , double shielded with PVC jacket; Temperature range : -30 ... +70 °C (-22 ... +158 °F)			Panel mounting enclosure IP20/NEMA 1 in aluminium for 19" insert (21 TE)	<b>FDK:083F5032</b>	
<ul style="list-style-type: none"> <li>• 10 m (33 ft) ◆ <b>FDK:083F3020</b></li> <li>• 20 m (65 ft) ◆ <b>FDK:083F3095</b></li> <li>• 40 m (130 ft) <b>FDK:083F3094</b></li> <li>• 60 m (200 ft) <b>FDK:083F3093</b></li> <li>• 100 m (330 ft) <b>FDK:083F3092</b></li> <li>• 150 m (500 ft) <b>FDK:083F3056</b></li> <li>• 200 m (650 ft) <b>FDK:083F3057</b></li> <li>• 500 m (1650 ft) <b>FDK:083F3058</b></li> </ul>			Panel mounting enclosure IP20/NEMA 1 in aluminium for 19" insert (42 TE)	<b>FDK:083F5033</b>	
Low-noise electrode coax cable for low conductivity and high vibration levels, 3 x 0.13 mm <sup>2</sup>			Wall mounting enclosure IP66/NEMA 4X in ABS plastic for 19" insert (cable glands and connection board not included)		
<ul style="list-style-type: none"> <li>• 2 m (6.6 ft) <b>A5E02272692</b></li> <li>• 5 m (16.5 ft) <b>A5E02272723</b></li> <li>• 10 m (33 ft) <b>A5E02272730</b></li> </ul>			<ul style="list-style-type: none"> <li>• 21 TE <b>FDK:083F5037</b></li> <li>• 42 TE <b>FDK:083F5038</b></li> </ul>		
Cable kit including standard coil cable (3 x 1.5 mm <sup>2</sup> / 18 gage, single shielded with PVC jacket) and special electrode cable <sup>1)</sup> (3 x 0.25 mm <sup>2</sup> , double shielded with PVC jacket); Temperature range: -30 ... +70 °C (-22 ... +158 °F)			Front cover (7TE) for panel mounting enclosure	<b>FDK:083F4525</b>	
<ul style="list-style-type: none"> <li>• 5 m (16.5 ft) ◆ <b>A5E02296329</b></li> <li>• 10 m (33 ft) ◆ <b>A5E01181647</b></li> <li>• 15 m (49 ft) ◆ <b>A5E02296464</b></li> <li>• 20 m (65 ft) ◆ <b>A5E01181656</b></li> <li>• 25 m (82 ft) ◆ <b>A5E02296490</b></li> <li>• 30 m (98 ft) ◆ <b>A5E02296494</b></li> <li>• 40 m (130 ft) ◆ <b>A5E01181686</b></li> <li>• 50 m (164 ft) ◆ <b>A5E02296498</b></li> <li>• 60 m (200 ft) <b>A5E01181689</b></li> <li>• 100 m (330 ft) <b>A5E01181691</b></li> <li>• 150 m (500 ft) <b>A5E01181699</b></li> <li>• 200 m (650 ft) <b>A5E01181703</b></li> <li>• 500 m (1650 ft) <b>A5E01181705</b></li> </ul>			Sun shield for MAG 5000/6000 transmitter in remote design	<b>A5E01209496</b>	
Potting kit for IP68/NEMA 6P sealing of sensor junction box	◆ <b>FDK:085U0220</b>		Sun Shield for MAG 5000/6000 transmitter in compact design on MAG 3100 (DN 15 ... 2000/1/2" ... 78") or MAG 5100 W (DN 150 ... 1200/6" ... 48")	<b>A5E01209500</b>	
19" safety barrier (21 TE) <sup>1)</sup> [EEx e ia] IIC for MAG 1100 Ex sensors and MAG 3100 Ex sensors 12 ... 24 V, 115 ... 230 V, incl. back plate (A5E02559810)	<b>FDK:083F5034</b>		◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ◆. For details see page 10/11 in the appendix.		
Front panel mounting enclosure IP65/NEMA 2 in ABS plastic for 19" insert (21 TE)	<b>FDK:083F5030</b>		<sup>1)</sup> Special cables cannot be used with 19" safety barrier		
Front panel mounting enclosure IP65/NEMA 2 in ABS plastic for 19" insert (42 TE)	<b>FDK:083F5031</b>				

**Spare parts**

Description	Article No.		Description	Article No.	
Connection board (for polyamide terminalbox)			Cable glands (polyamide), 4 pcs.		
• 12 ... 24 V	<b>A5E02559817</b>		• M20	◆ <b>A5E00822490</b>	
• 115 ... 230 V	<b>A5E02559816</b>		• ½" NPT	◆ <b>A5E00822501</b>	½" NPT M20
Connection board (for stainless steel terminal- box)			• PG 13.5, 2 pcs.	<b>FDK:083G0228</b>	
• 12 ... 24 V	<b>A5E02604280</b>		Sealing screws for sensor/ transmitter, 2 pcs	<b>FDK:085U0221</b>	
• 115 ... 230 V	<b>A5E02604272</b>		Terminal box, in polyamide, inclusive lid, terminal blocks, gasket and screws		
Connection board MAG 5000/6000 19" insert for panel mounting enclo- sure, 12 ... 24 V/115 ... 230 V	<b>A5E02559809</b>		• M20	<b>FDK:085U1050</b>	
			• ½" NPT	<b>FDK:085U1052</b>	
Connection board MAG 5000/6000 19" insert with safety barrier for panel mounting enclosure, 12 ... 24 V/115 ... 230 V	<b>A5E02559810</b>		Terminal box lid, in polyam- ide	<b>FDK:085U1003</b>	
Connection board MAG 5000/6000 19" insert with safety barrier for panel mounting enclosure, 12 ... 24 V/115 ... 230 V (only for sensors produced before October 2007)	<b>A5E02559811</b>		Terminal box, in stainless steel, inclusive lid, terminal blocks, gasket and screws, for MAG 6000 in stainless steel and for all Ex sensors,		
Connection board MAG 5000/6000 19" insert with cleaning unit for panel mounting enclosure, 12 ... 24 V/115 ... 230 V	<b>FDK:083F4123</b>		• M20	<b>A5E00836867</b>	
			• ½" NPT	<b>A5E00836868</b>	
SENSORPROM memory unit (Sensor code and serial numbers must be specified on order)			Terminal box (3A) for MAG 1100 F in polyamide, inclusive lid, terminal blocks, gasket and screws		
• 2 kB (for MAG 5000/6000/ MAG 6000 I)	<b>FDK:085U1005</b>		• M20	<b>A5E00822478</b>	
- 1 pc.	<b>FDK:083F5052</b>		• ½" NPT	<b>A5E00822479</b>	
- 10 pcs.	<b>FDK:085U1008</b>		Gasket for terminal box lid in polyamide and MAG 5000/6000 IP67/ NEMA 4X/6 (5 pc.)	<b>A5E37086797</b>	
• 250 B (for MAG 2500/3000)			Spare part kit for remote use of sensor with 20 pcs. 5-pin terminal blocks	<b>A5E34346873</b>	
Display unit for MAG 5000/6000			Connection board MAG 5000/6000 19" insert for wall mounting enclosure, 12 ... 24 V / 115 ... 230 V	<b>A5E02559813</b>	
• Black neutral front	<b>FDK:085U1038</b>		Connection board MAG 5000/ 6000 19" insert with safety bar- rier for wall mounting enclosure, 12 ... 24 V/115 ... 230 V	<b>A5E02559814</b>	
			Connection board MAG 5000/ 6000 19" insert with safety bar- rier for wall mounting enclo- sure, 12 ... 24 V/115 ... 230 V (only for sensors produced before October 2007)	<b>A5E02559812</b>	
• Siemens front	<b>FDK:085U1039</b>		Connection board MAG 5000/ 6000 19" insert with cleaning unit for wall mounting enclo- sure, 12 ... 24 V/115 ... 230 V	<b>A5E02559815</b>	
HW key	<b>On request</b>		SENSORPROM program- mer with RS 232 interface	<b>FDK:083H4246</b>	

◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ◆. For details see page 10/11 in the appendix.

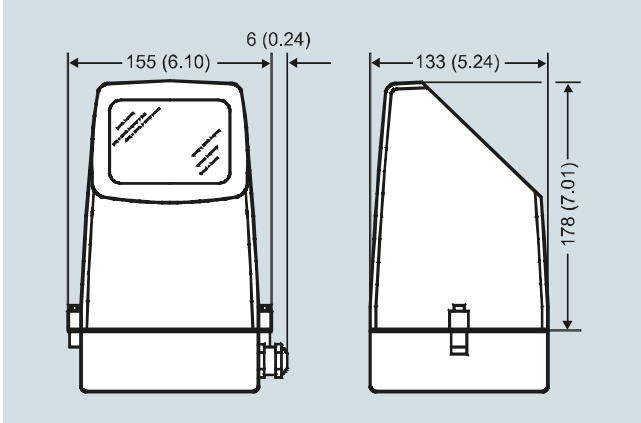
# Flow Measurement

## SITRANS F M

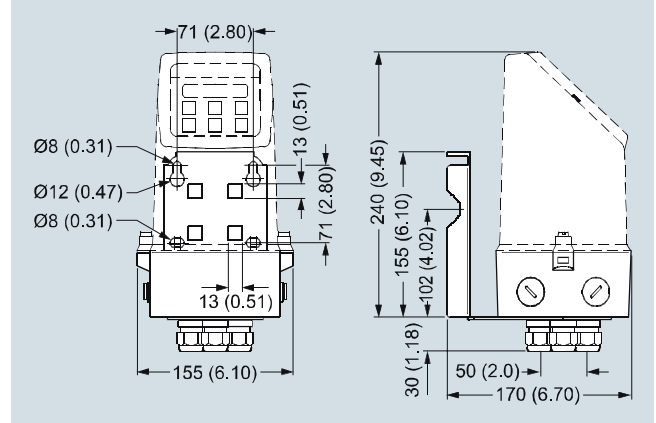
### Transmitter MAG 5000/6000

#### Dimensional drawings

##### Transmitter IP67/NEMA 4X/6 compact polyamide

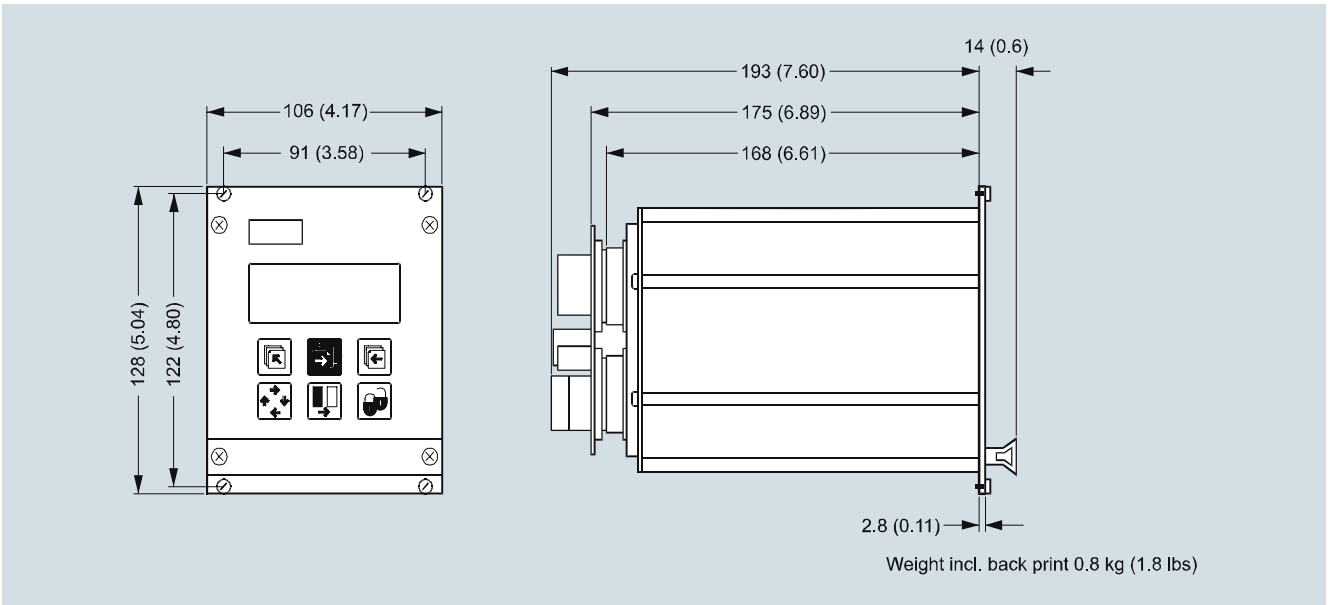


Transmitter compact mounted, dimensions in mm (inch)



Transmitter wall mounted, dimensions in mm (inch)

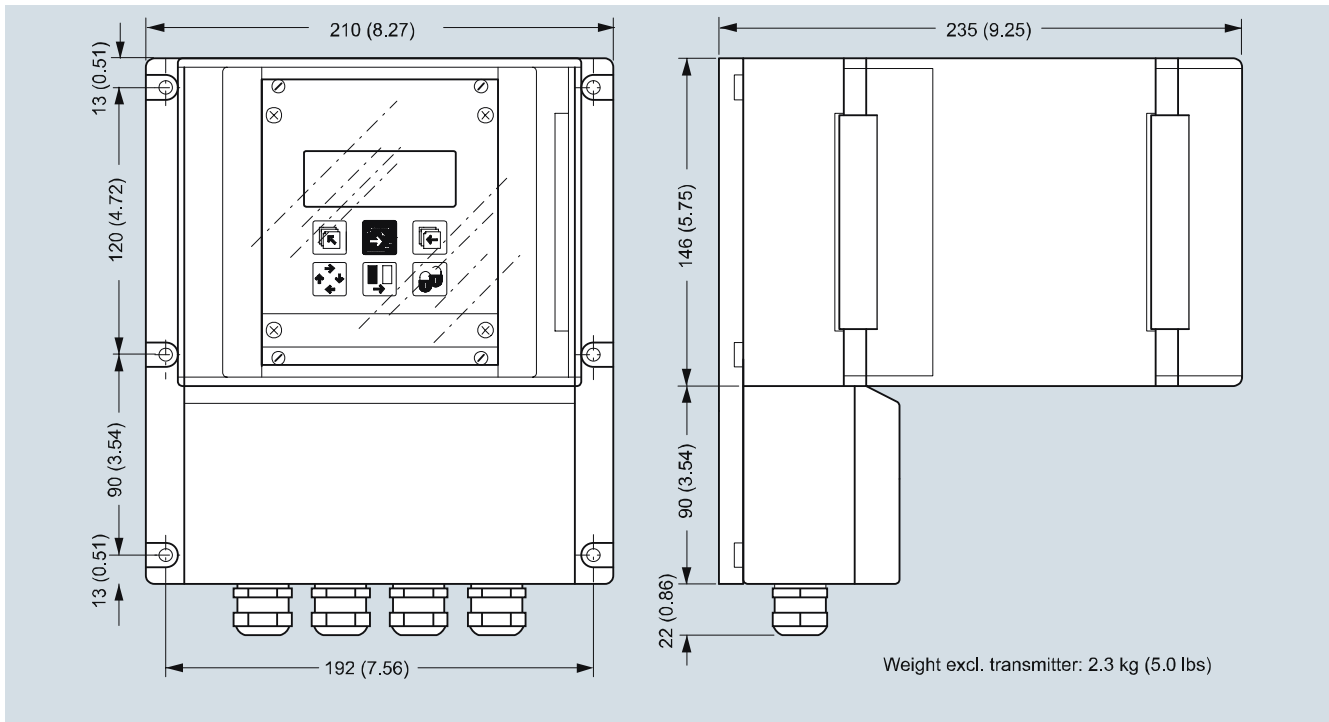
##### Transmitter, 19" IP20/NEMA 1 standard unit



Dimensions in mm (inch)

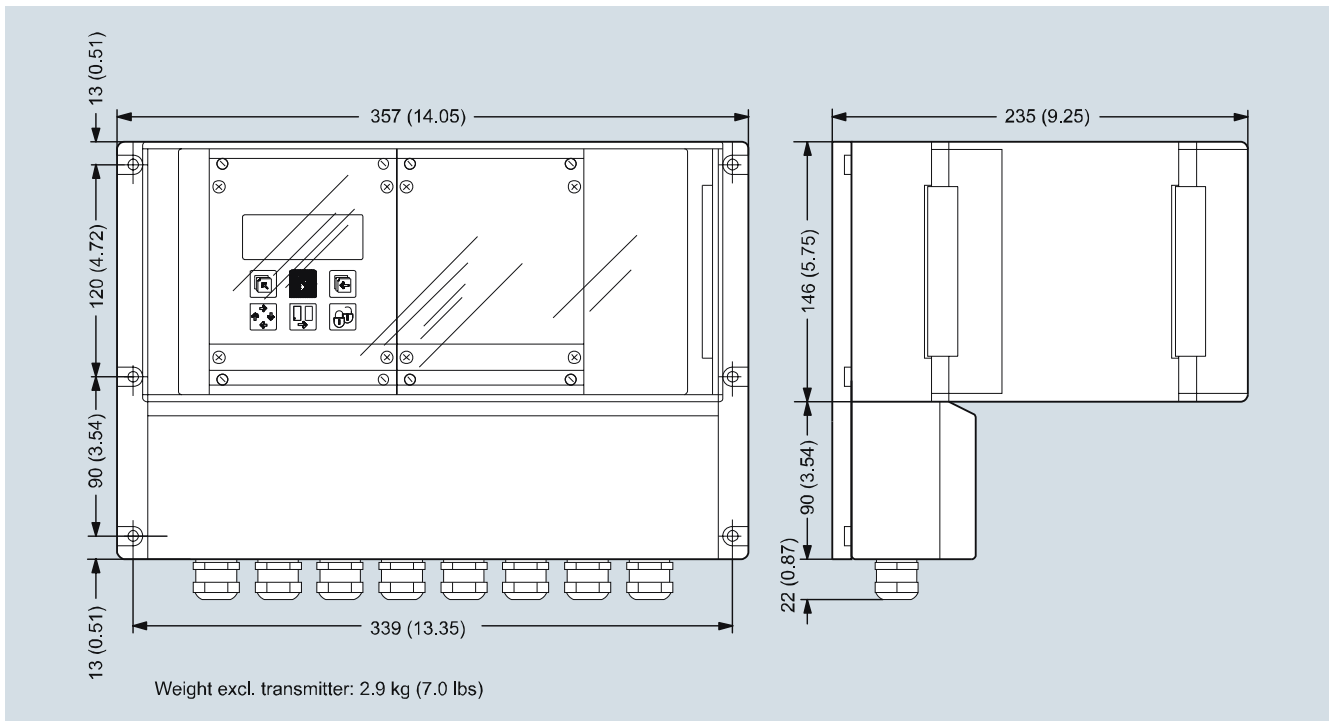


**Transmitter, wall mounting IP66/NEMA 4X, 21 TE**



Dimensions in mm (inch)

**Transmitter, wall mounting IP66/NEMA 4X, 42 TE**



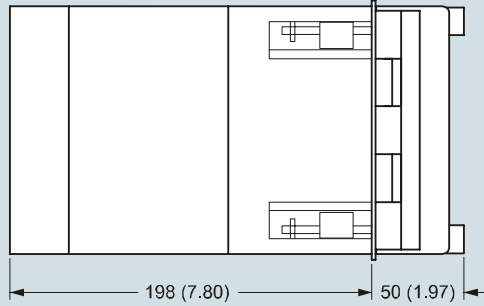
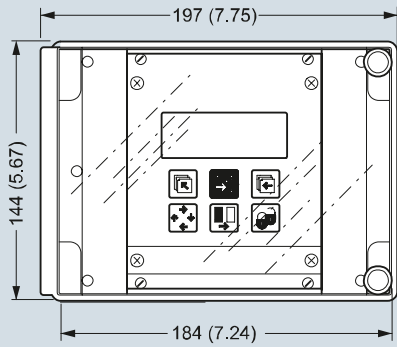
Dimensions in mm (inch)

# Flow Measurement

## SITRANS F M

### Transmitter MAG 5000/6000

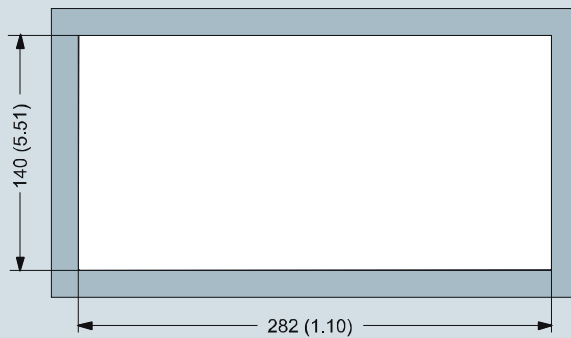
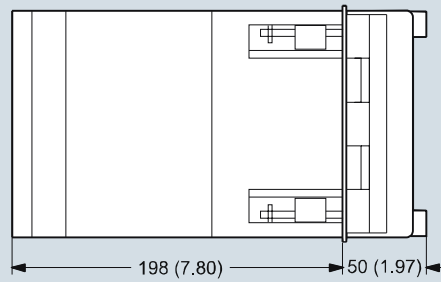
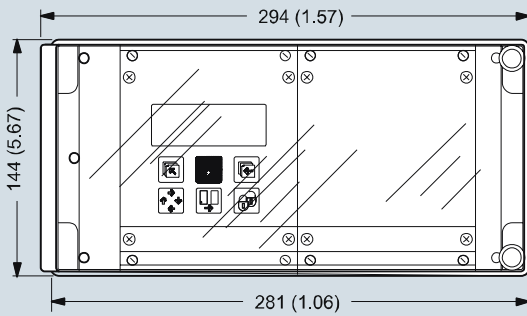
#### Transmitter, panel front IP20/NEMA 1, 21 TE



Weight excl. transmitter: 1.2 kg (2.7 lbs)

Dimensions in mm (inch)

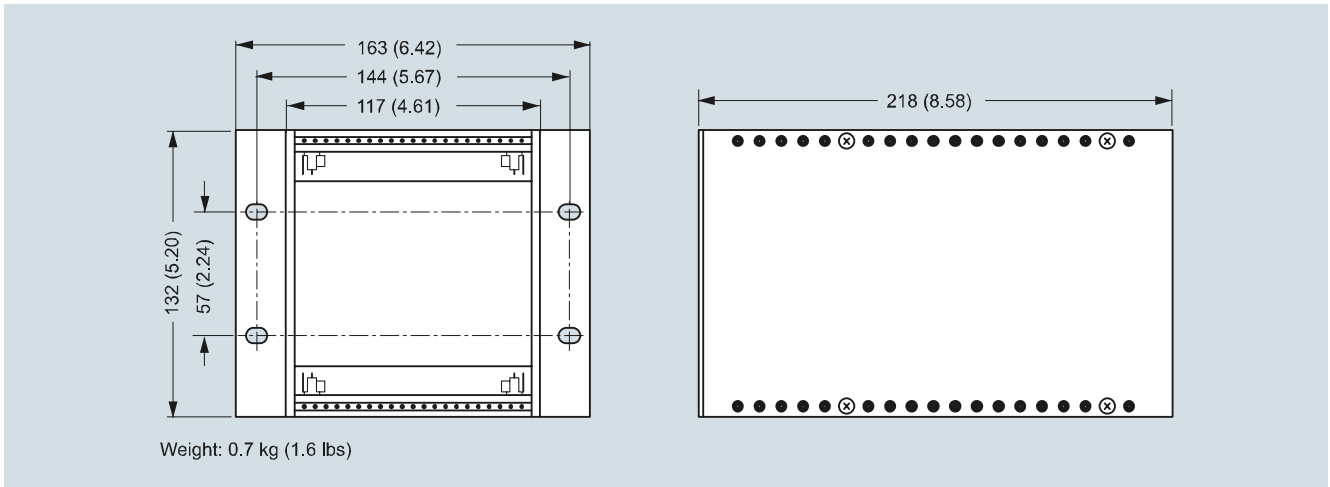
#### Transmitter, panel front IP20/NEMA 1, 42 TE



Weight excl. transmitter: 1.6 kg (3.5 lbs)

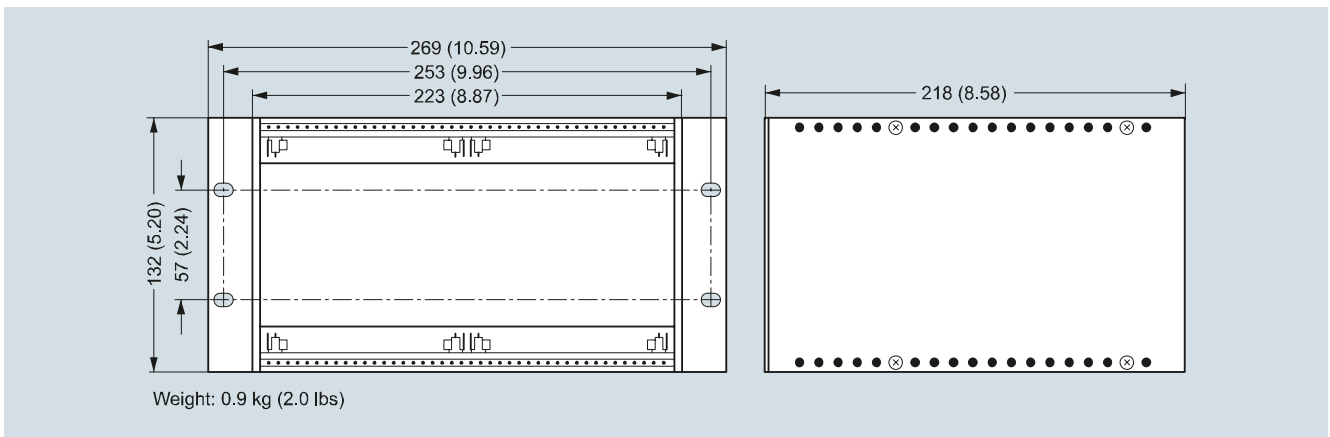
Dimensions in mm (inch)

**Transmitter, back of panel IP20/NEMA 1, 21 TE**



Dimensions in mm (inch)

**Transmitter, back of panel IP20/NEMA 1, 42 TE**



Dimensions in mm (inch)

# Flow Measurement

## SITRANS F M

### Transmitter MAG 5000/6000

#### Schematics

##### Electrical connection

###### Grounding

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

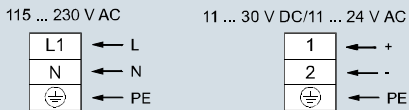
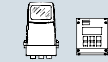
###### Mechanical counters

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

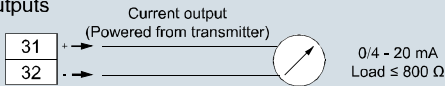
###### Output cables

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

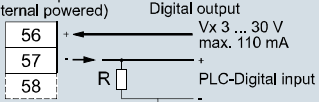
#### Power supply



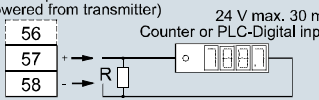
#### Outputs



#### Passive output (External powered)



#### Active output (Powered from transmitter)

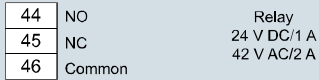


#### Menu setup

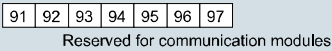
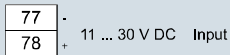
Negative: Positive:

R = Pull up/down resistor  
1 ... 10 KΩ may be required - depending on Cables/Input resistance

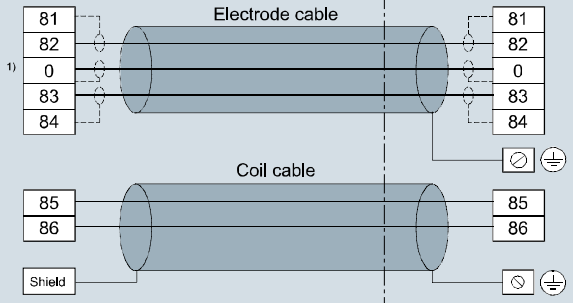
#### Relay output



#### Digital input



#### Sensor connection



1) Note: Special cable with individual wire shields (shown as dotted lines) are only required when using empty pipe function or long cables.