

### Overview



Magnetic flowmeter transmitter SITRANS FMT020

The new magnetic flow meter transmitter model SITRANS FMT020 is a high performance, robust and intelligent product, designed to fit perfectly for a wide area of process applications that require accurate, and reliable flow measurement of conductive fluids.

The SITRANS FMT020 is the next generation successor for the well-proven MAG 5000 and MAG 6000 transmitter series. The FMT020 retains all the unique features of this transmitter series such as the flexible installation concept with common housing for compact and remote mounting. It also maintains the modular design supporting easy exchangeability of the transmitter as well as the add-on communication modules, or the Sensorprom memory unit for fast commissioning, instant measurement, and data storage.

In addition, the FMT020 features the ability to simultaneously measure volumetric flow, flow velocity and electrical conductivity. It also offers enhanced diagnostics like empty pipe monitoring and device self-check, and comes with multi-functional input/output channels for process control, a unified operating concept and much more:

- High accuracy up to 0.2% of rate
- 3 totalizers for forward, reverse, and net flow
- Multi language, menu-guided operation
- Field bus: HART, PROFINET, EtherNet/IP, MODBUS RTU, MODBUS TCP/IP
- Integrated self-verification via local display, SIMATIC PDM, Webserver and SITRANS mobile IQ

The transmitter can be configured locally via display and remotely over Fieldbus or Webserver. EDDs are available for SIMATIC PDM, AMS Device Manager, and AMS Trex Device Communicator, plus DTM for FDTs (Field Device Tools).

### Benefits

- Backwards compatible with older (up to 15 years) flow meter sensors (MAG 5100 W)
- Fast start-up without zero-point adjustments
- Variety of functions for comprehensive device check, self-diagnosis, and onboard verification
- Vericator compatible: Independently verifies performance of sensor, transmitter, and installation (including cable) without process interruption
- Easy to use HMI display with local four-button programming, menu-driven parameters, and Wizard support for key applications
- Multi-functional outputs for process control, minimum configuration with analog, digital (pulse, frequency, status), and relay output
- SD memory card for data logging, configuration backup, and firmware update
- Seamless field device integration in host systems

### Application

The SITRANS FMT020 transmitter is engineered for high performance, easy installation, commissioning, and reduced maintenance.

The device is a truly robust solution and suitable for all-around applications but is also the ideal choice for demanding applications where higher diagnostics capability and functionality are important.

The transmitter can be combined with magnetic flow sensors of type SITRANS FMS500.

#### SITRANS FMS500

A flow meter sensor for all water and wastewater applications. With its coned design, increased low-flow accuracy is achieved making it especially useful for leak detection. It is suitable for direct burial and constant flooding. The SITRANS FMS500 complies with drinking water approvals.

Accuracy: 0.4% of rate, option for: 0.2% of rate

Range: DN 15 ... 2200 (½ ... 88")

## Flow Measurement

### SITRANS FM (electromagnetic)

#### Flow transmitters / SITRANS FMT020

##### Design

The transmitter is housed in a IP66/67, NEMA 4X/6 enclosure made of durable polycarbonate and creates together with a flow sensor a complete measurement system providing the measured flow values via a local display, multiple signal outputs or a fieldbus interface.

The modular design concept of the FMT020 makes it flexible to be remote connected or integral mounted with magnetic flow sensors of type SITRANS FMS500.

##### Integral-mount design

For devices with an integral-mount design, the transmitter and the sensor form a single mechanical unit.

##### Remote mount design

For devices with a remote mount design, the transmitter and sensor are mounted in separate locations. The electrical connection between the transmitter and the sensor is provided by sensor cables.



### Selection and ordering data

| Transmitter SITRANS FMT020                                                                        | Article No.<br>7ME6942- |   |   |   |   |   |   |   |   |   |
|---------------------------------------------------------------------------------------------------|-------------------------|---|---|---|---|---|---|---|---|---|
|                                                                                                   | 0                       | A | A | 0 | 0 | - | 0 | • | • | • |
| Click on the Article No. for the online configuration in the PIA Life Cycle Portal.               |                         |   |   |   |   |   |   |   |   |   |
| <b>Transmitter mounting and enclosure type</b>                                                    |                         |   |   |   |   |   |   |   |   |   |
| Polycarbonate enclosure                                                                           |                         |   |   |   |   |   |   |   | A |   |
| Remote design, polycarbonate housing (wall-mounting unit and sensor terminal board included)      |                         |   |   |   |   |   |   |   | J |   |
| <b>Terminal box, electrical connection</b>                                                        |                         |   |   |   |   |   |   |   |   |   |
| Without terminal box                                                                              |                         |   |   |   |   |   |   |   |   | A |
| Polycarbonate terminal box with M20 threads (incl. 4 pcs M20 cable glands)                        |                         |   |   |   |   |   |   |   |   | B |
| Polycarbonate terminal box with M20 threads and ½" NPT adaptors (incl. 4 pcs ½" NPT cable glands) |                         |   |   |   |   |   |   |   |   | C |
| <b>Power supply</b>                                                                               |                         |   |   |   |   |   |   |   |   |   |
| 12 ... 42 V DC                                                                                    |                         |   |   |   |   |   |   |   |   | 2 |
| 100 ... 240 V AC, 50/60 Hz                                                                        |                         |   |   |   |   |   |   |   |   | 3 |

| Additional information                                                   | Order code |
|--------------------------------------------------------------------------|------------|
| Please add "-Z" to Article No. and specify Order code(s) and plain text. |            |
| <b>General safety</b>                                                    |            |
| CSA General Purpose                                                      | E06        |
| <b>Explosion protection</b>                                              |            |
| ATEX (Europe) & IECEx (World)                                            | E20        |
| FM (USA & Canada)                                                        | E22        |
| IECEx (World)                                                            | E23        |
| <b>Country specific approvals</b>                                        |            |
| CPA (China)                                                              | E75        |
| <b>Communication</b>                                                     |            |
| HART with 4 ... 20 mA output, active or passive                          | F01        |
| Modbus RTU / RS485                                                       | F04        |

| Additional information                                  | Order code |
|---------------------------------------------------------|------------|
| PROFIBUS PA                                             | F05        |
| PROFIBUS DP                                             | F06        |
| PROFINET                                                | F07        |
| EtherNet/IP                                             | F09        |
| MODBUS TCP/IP                                           | F10        |
| <b>I/O extension</b>                                    |            |
| Digital input / output, passive                         | F30        |
| <b>Device options</b>                                   |            |
| Industrial micro SD memory card, 20 GB storage capacity | J06        |
| Name plate in Chinese language                          | J20        |
| <b>Type of Ex protection</b>                            |            |
| Increased safety (Ex e) Zone 2                          | L12        |
| Non-incendive (NI) Class I, Division 2                  | L15        |

### Accessories FMT020

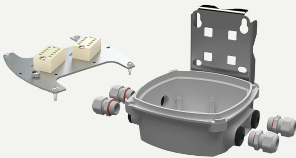
| Description                                                                         | Article No.   |                                                                                       |
|-------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------|
| <b>Communication add-on modules</b>                                                 |               |                                                                                       |
| HART with 4 ... 20 mA output, active or passive                                     | 7ME6940-1CM10 |  |
| PROFINET                                                                            | 7ME6940-1CM20 |                                                                                       |
| EtherNet/IP                                                                         | 7ME6940-1CM30 |                                                                                       |
| Modbus RTU/RS485                                                                    | 7ME6940-1CM40 |                                                                                       |
| PROFIBUS DP                                                                         | 7ME6940-1CM50 |                                                                                       |
| PROFIBUS PA                                                                         | 7ME6940-1CM60 |                                                                                       |
| MODBUS TCP/IP                                                                       | 7ME6940-1CM70 |                                                                                       |
| <b>I/O add-on modules</b>                                                           |               |                                                                                       |
| Digital input / output                                                              | 7ME6940-1DM10 |  |
| <b>Bluetooth adapter SITRANS AW050<sup>2)</sup></b><br>(including connection cable) | 7ME6940-1BT10 |  |

## Flow Measurement

### SITRANS FM (electromagnetic)

#### Flow transmitters / SITRANS FMT020

#### Selection and ordering data (continued)

| Description                                                                                                                                                                           | Article No.   |                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------|
| <b>SensorPROM programmer</b><br>(MAG 5000/6000 SensorPROM compatible)                                                                                                                 | 7ME6940-1SP10 |    |
| <b>Wall-mounting unit</b><br>(including sensor terminal board), terminal box material polycarbonate <ul style="list-style-type: none"> <li>M20 × 1.5 cable glands (4 pcs.)</li> </ul> | 7ME6940-1WU10 |    |
| <ul style="list-style-type: none"> <li>½ inch NPT cable glands (4 pcs.)</li> </ul>                                                                                                    | 7ME6940-1WU15 |    |
| <b>Display protection cover</b>                                                                                                                                                       | 7ME6940-1PL10 |  |
| <b>Sun shield for transmitter, remote mount</b>                                                                                                                                       | A5E01209496   |  |
| <b>Sun shield for transmitter, integral mount (compact design)</b><br>Only suitable for FMS500 sensors DN 150 ... 1200 (6" ... 48")                                                   | A5E01209500   |  |

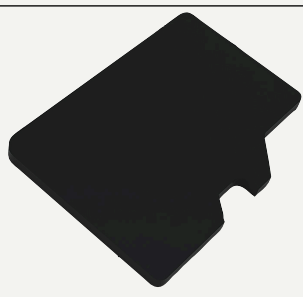
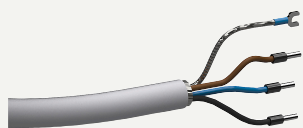
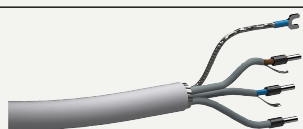
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## Flow Measurement

### SITRANS FM (electromagnetic)

#### Flow transmitters / SITRANS FMT020

#### Selection and ordering data (continued)

| Description                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Article No.                                                                                                                                                               |                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• ½ inch NPT</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                     | A5E52909970                                                                                                                                                               |    |
| <b>Breathing vent, IP67</b> <ul style="list-style-type: none"> <li>• M20</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                | 7ME6940-1BV10                                                                                                                                                             |                                                                                       |
| <ul style="list-style-type: none"> <li>• ½ inch NPT</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                     | 7ME6940-1BV15                                                                                                                                                             |                                                                                       |
| <b>Industrial microSD memory card</b><br>20 GB storage capacity                                                                                                                                                                                                                                                                                                                                                                                                    | A5E53821516                                                                                                                                                               |   |
| <b>Coil / electrode cable standard type</b><br>3 × 1.5 mm², screened, PVC jacket; Temperature range -30 ... +70 °C (-22 ... +158 °F) <ul style="list-style-type: none"> <li>• 5 m (16.4 ft)</li> <li>• 10 m (33 ft)</li> <li>• 20 m (65 ft)</li> <li>• 30 m (98 ft)</li> <li>• 40 m (131 ft)</li> <li>• 50 m (164 ft)</li> <li>• 60 m (197 ft)</li> <li>• 100 m (328 ft)</li> <li>• 150 m (492 ft)</li> <li>• 200 m (656 ft)</li> <li>• 500 m (1640 ft)</li> </ul> | A5E02296523<br>FDK:083F0121<br>FDK:083F0210<br>A5E02297309<br>FDK:083F0211<br>A5E02297317<br>FDK:083F0212<br>FDK:083F0213<br>FDK:083F3052<br>FDK:083F3053<br>FDK:083F3054 |  |
| <b>Electrode cable special type</b><br>3 × 0.25 mm², screened single core, PVC jacket; Temperature range -30 ... +70 °C (-22 ... +158 °F) <ul style="list-style-type: none"> <li>• 10 m (33 ft)</li> <li>• 20 m (65 ft)</li> <li>• 40 m (131 ft)</li> <li>• 60 m (197 ft)</li> </ul>                                                                                                                                                                               | FDK:083F3020<br>FDK:083F3095<br>FDK:083F3094<br>FDK:083F3093                                                                                                              |  |

### Selection and ordering data (continued)

| Description                                                                                                                                                                                                                                                                                                                                                                   | Article No.                                                                                                                                                                                     |                                                                                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• 100 m (328 ft)</li> <li>• 150 m (492 ft)</li> <li>• 200 m (656 ft)</li> <li>• 500 m (1640 ft)</li> </ul>                                                                                                                                                                                                                             | FDK:083F3092<br>FDK:083F3056<br>FDK:083F3057<br>FDK:083F3058                                                                                                                                    |                                                                                         |
| <b>Sensor cable kit</b><br>including coil cable standard type ( $3 \times 1.5 \text{ mm}^2$ , screened) and electrode cable special type ( $3 \times 0.25 \text{ mm}^2$ , screened single core), PVC jacket, Temperature range $-30 \dots +70 \text{ }^\circ\text{C}$ ( $-22 \dots +158 \text{ }^\circ\text{F}$ )                                                             |                                                                                                                                                                                                 |                                                                                                                                                                            |
| <ul style="list-style-type: none"> <li>• 5 m (16.4 ft)</li> <li>• 10 m (33 ft)</li> <li>• 15 m (49 ft)</li> <li>• 20 m (65 ft)</li> <li>• 25 m (82 ft)</li> <li>• 30 m (98 ft)</li> <li>• 40 m (131 ft)</li> <li>• 50 m (164 ft)</li> <li>• 60 m (197 ft)</li> <li>• 100 m (328 ft)</li> <li>• 150 m (492 ft)</li> <li>• 200 m (656 ft)</li> <li>• 500 m (1640 ft)</li> </ul> | A5E02296329<br>A5E01181647<br>A5E02296464<br>A5E01181656<br>A5E02296490<br>A5E02296494<br>A5E01181686<br>A5E02296498<br>A5E01181689<br>A5E01181691<br>A5E01181699<br>A5E01181703<br>A5E01181705 | <br> |
| <b>Potting kit</b><br>for IP68 / NEMA 6P sealing of sensor terminal box                                                                                                                                                                                                                                                                                                       | FDK:085U0220                                                                                                                                                                                    |                                                                                       |

- <sup>1)</sup> Only SITRANS FM MAG 5100W and MAG 3100 sensors, beginning with "7ME" and manufactured after 2011 are supported. Please check the sensor serial number or production date specified on the nameplate. All certificates valid for the old system (combination of sensor and transmitter), will lose their validity. The separate certificates will still be valid.
- <sup>2)</sup> FMT020 with AW050 dongle is certified for RED, FCC (USA and Canada) and the certified list of countries for AW050 dongle is available on SiePortal. We expect that Compliance to local rules and regulations where the product or the dongle accessory will be used is under the responsibility of the person placing the order. Please reach out to your Regional Sales Partner to consider additional certification if needed. For additional support, please contact HQ.

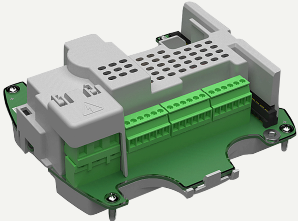
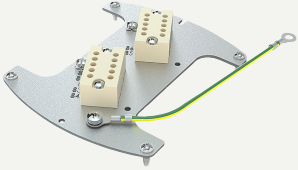
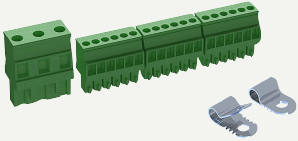
## Flow Measurement

### SITRANS FM (electromagnetic)

#### Flow transmitters / SITRANS FMT020

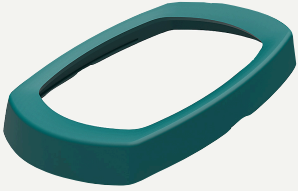
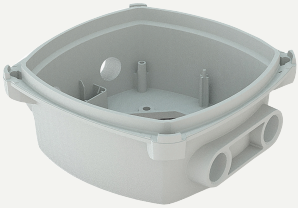
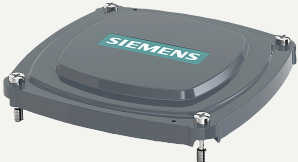
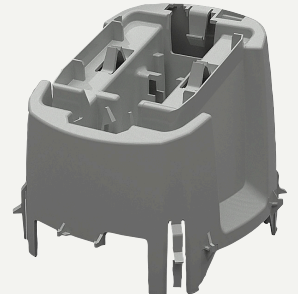
#### Selection and ordering data (continued)

##### Spare parts FMT020

| Description                                                                                                                                                                                                               | Article No.                        |                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------|
| <b>Transmitter connection board with power supply</b><br>(including screws, grounding wire), 1 pc. <ul style="list-style-type: none"> <li>• 100 ... 240 V AC, 50/60 Hz</li> <li>• 12 ... 42 V DC</li> </ul>               | 7ME6940-1CB10<br><br>7ME6940-1CB20 |    |
| <b>Sensor terminal board</b><br>(including screws, grounding wire), 1 pc                                                                                                                                                  | A5E52775102                        |    |
| <b>Connector set for transmitter connection board</b><br>(power supply, IOs and communication) including earthing clips                                                                                                   | A5E52775452                        |   |
| <b>Local display and operating unit</b><br>(incl. ribbon cable and display holder), 1 pc.                                                                                                                                 | 7ME6940-1DU10                      |  |
| <b>FMT020 SensorPROM memory unit</b> <ul style="list-style-type: none"> <li>• Programmed<br/>1 pc. (sensor order code and serial number must be specified when ordering)</li> <li>• Not programmed<br/>10 pcs.</li> </ul> | 7ME6940-1SM10<br><br>A5E52771927   |  |



**Selection and ordering data (continued)**

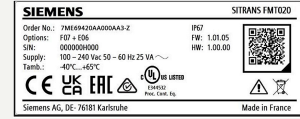
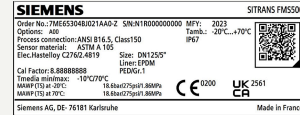
| Description                                                                                      | Article No. |                                                                                       |
|--------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------|
| <b>Top housing</b><br>material polycarbonate (including screws, gasket and display frame), 1 pc. | A5E52784564 |    |
| <b>Display frame</b><br>material polycarbonate, 1 pc.                                            | A5E52771997 |    |
| <b>Terminal box</b><br>material polycarbonate (without cable glands and lid), 1 pc.              | A5E52729542 |   |
| <b>Terminal box lid</b><br>material polycarbonate (including gasket), 1 pc.                      | A5E52729452 |  |
| <b>Terminal box gasket</b><br>5 pcs.                                                             | A5E52729547 |  |
| <b>Main board cover housing</b><br>1 pc.                                                         | A5E52784657 |  |

# Flow Measurement

## SITRANS FM (electromagnetic)

### Flow transmitters / SITRANS FMT020

#### Selection and ordering data (continued)

| Description                                                                                                                                                         | Article No. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Device nameplate</b><br><ul style="list-style-type: none"> <li>Transmitter</li> </ul> (transmitter order code and serial number must be specified when ordering) | A5E52864071 |  <p>SIEMENS SITRANS FMT020</p> <p>Order No.: 7MT6K420A000A3-Z</p> <p>Options: F07 + E06</p> <p>SN: 0000000000</p> <p>Supply: 100 - 240 Vac 50 - 60 Hz 25 VA</p> <p>Temp.: -40°C...+65°C</p> <p>IP67</p> <p>FW: 1.01.05</p> <p>HW: 1.00.00</p> <p>CE UK ENE</p> <p>Siemens AG, DE 76181 Karlsruhe</p> <p>Made in France</p>                                                                                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>Sensor</li> </ul> (sensor order code and serial number must be specified when ordering)                                      | A5E52864088 |  <p>SIEMENS SITRANS FM5500</p> <p>Order No.: 7MT6K420A000A3-Z</p> <p>Options: A06</p> <p>Process connection: ANSI B16.5, Class 150</p> <p>Sensor material: ASTM A105</p> <p>Electrode: C276L A019</p> <p>Size: DN125"</p> <p>Unit: EPDM</p> <p>Cal Factor: 8.88888888</p> <p>Temp. min/max: -10°C/70°C</p> <p>MAWP (TS) at 20°C: 16.8bar(275psi) 1600kPa</p> <p>MAWP (TS) at 70°C: 16.8bar(275psi) 1600kPa</p> <p>IP67</p> <p>FW: 1.01.05</p> <p>HW: 1.00.00</p> <p>CE UK ENE</p> <p>Siemens AG, DE 76181 Karlsruhe</p> <p>Made in France</p> |

### Technical specifications

| SITRANS FMT020 transmitter            |                                                                                                                             |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Measurement of                        | <ul style="list-style-type: none"> <li>• Volume flow</li> <li>• Flow velocity</li> <li>• Electrical conductivity</li> </ul> |
| Mode of operation                     | Electromagnetic with pulsed constant field                                                                                  |
| Measuring principle                   | Detection of empty pipe (electrode cable special type required in remote mounted installation)                              |
| Empty pipe                            | Depends on the sensor size, please refer to "Technical specifications" for SITRANS FM sensors                               |
| Excitation frequency                  | $> 1 \times 1014 \Omega$                                                                                                    |
| Electrode input impedance             |                                                                                                                             |
| Current output (active/passive)       |                                                                                                                             |
| Signal range                          | 0 ... 24 mA or 4 ... 20 mA<br>Signal levels compliant with NAMUR NE 43 (3.8 to 20.5 mA)                                     |
| Load                                  | $< 470 \Omega$                                                                                                              |
| Resolution                            | $< 1 \mu A$                                                                                                                 |
| Accuracy                              | $\pm 20 \mu A$                                                                                                              |
| Temperature coefficient               | $< 50 \text{ ppm/K}$                                                                                                        |
| Time constant                         | 0.1 ... 100 s, adjustable                                                                                                   |
| Digital output (active/passive)       |                                                                                                                             |
| Frequency                             | 0 ... 10 kHz, 50 % duty cycle (uni/bidirectional)                                                                           |
| Pulse                                 | 40 $\mu s$ ... 5 s pulse duration                                                                                           |
| Rating                                |                                                                                                                             |
| • Active operation mode               | 24 V DC, 30 mA, $1 \text{ k}\Omega \leq R_i \leq 10 \text{ k}\Omega$ , short-circuit protected (powered from transmitter)   |
| • Passive operation mode              | 3 ... 30 V DC, max. 110 mA, $200 \Omega \leq R_i \leq 10 \text{ k}\Omega$ (powered from connected supply)                   |
| Time constant                         | 0.1 ... 100 s, adjustable                                                                                                   |
| Relay output (passive)                |                                                                                                                             |
| Type                                  | SPDT Form C relay, potential-free change-over contacts, resistive load                                                      |
| Rating                                | 2 A at 42 V AC, 1 A at 24 V DC                                                                                              |
| Durability                            | 50 000 operations min. per relay                                                                                            |
| Galvanic isolation                    | All inputs and outputs are galvanically isolated, isolation voltage 500 V                                                   |
| Rated operating conditions            |                                                                                                                             |
| Installation environment              |                                                                                                                             |
| • Location                            | Indoor/outdoor (altitude up to 2000 m)                                                                                      |
| • Installation (overvoltage) category | II                                                                                                                          |
| • Pollution degree                    | 2                                                                                                                           |
| Ambient temperature                   |                                                                                                                             |
| • Transmitter                         | -40 ... +65 °C (-40 ... +149 °F) (max. humidity 98% RH)                                                                     |
| • Display                             | -20 ... +60 °C (-4 ... +140 °F)                                                                                             |
| Storage temperature                   |                                                                                                                             |
| • Transmitter                         | -40 ... +70 °C (-58 ... +158 °F) (max. humidity 98% RH)                                                                     |
| • Display                             | -40 ... +70 °C (-40 ... +158 °F)                                                                                            |
| Design                                |                                                                                                                             |
| Enclosure                             |                                                                                                                             |
| • Material                            | Polycarbonate                                                                                                               |

## Flow Measurement

### SITRANS FM (electromagnetic)

#### Flow transmitters / SITRANS FMT020

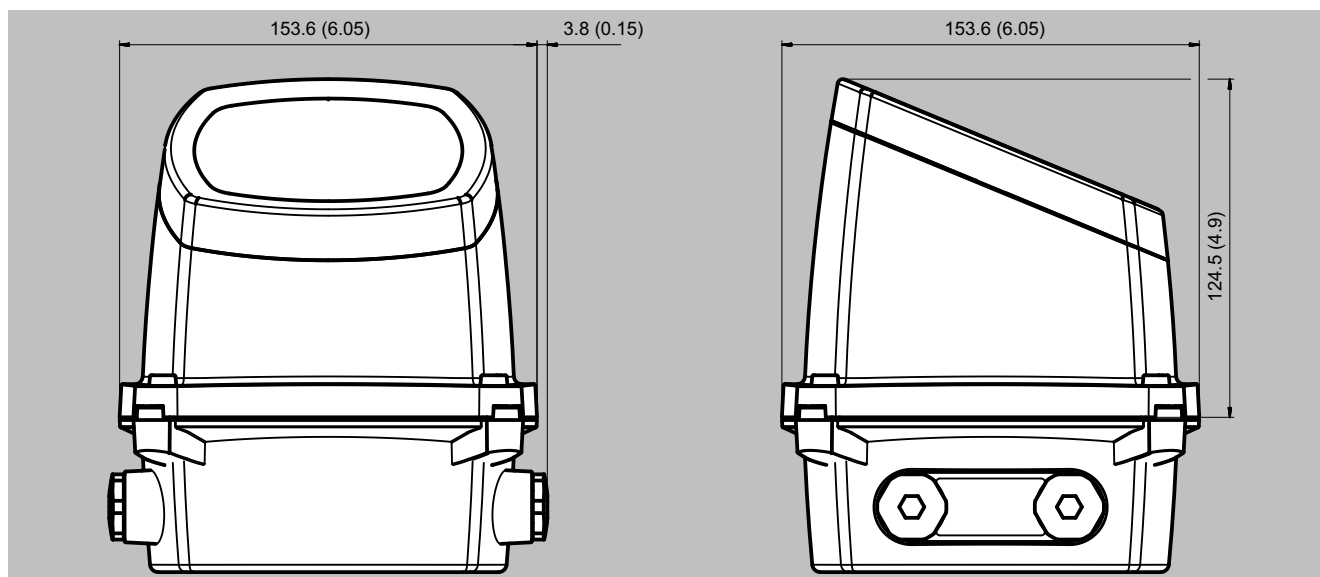
#### Technical specifications (continued)

| <b>SITRANS FMT020 transmitter</b>                                      |                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Degree of protection</li> </ul> | IP66/67, NEMA 4X/6                                                                                                                                                                                                                                                                                                                                                                           |
| Mechanical load<br>Integral mount / compact version                    | Vibration, sinusoidal according to IEC 60068-2-6 <ul style="list-style-type: none"> <li>2 ... 8.4 Hz, 3.5 mm peak</li> <li>8.4 ... 500 Hz, 1.0 g peak</li> </ul> Vibration broad-band random, according to IEC 60068-2-64 <ul style="list-style-type: none"> <li>10 ... 200 Hz, 0.003 g<sup>2</sup>/Hz</li> <li>200 ... 500 Hz, 0.001 g<sup>2</sup>/Hz</li> <li>Total: 1.54 g rms</li> </ul> |
| Remote version                                                         | Vibration, sinusoidal according to IEC 60068-2-6 <ul style="list-style-type: none"> <li>2 ... 8.4 Hz, 1.5 mm peak</li> <li>8.4 ... 500 Hz, 0.7 g peak</li> </ul> Vibration broad-band random, according to IEC 60068-2-64 <ul style="list-style-type: none"> <li>10 ... 200 Hz, 0.003 g<sup>2</sup>/Hz</li> <li>200 ... 500 Hz, 0.001 g<sup>2</sup>/Hz</li> <li>Total: 1.54 g rms</li> </ul> |
| EMC performance                                                        | IEC/EN 61326-1, EN 55011 (Class A)                                                                                                                                                                                                                                                                                                                                                           |
| Dimensions                                                             | See dimensional drawings                                                                                                                                                                                                                                                                                                                                                                     |
| Weight                                                                 | See dimensional drawings                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Display and control</b>                                             |                                                                                                                                                                                                                                                                                                                                                                                              |
| LCD display                                                            | 60 × 40 mm (2.36 × 1.57 inch) LCD, 240 × 160 pixels resolution                                                                                                                                                                                                                                                                                                                               |
| Menu navigation                                                        | 4 capacitive touch keys                                                                                                                                                                                                                                                                                                                                                                      |
| Update time                                                            | Less than 1 second                                                                                                                                                                                                                                                                                                                                                                           |
| Totalizers                                                             | 3 × 14-digit counters for forward, net, or reverse flow                                                                                                                                                                                                                                                                                                                                      |
| <b>Memory card</b>                                                     | Integrated microSD interface supporting memory cards up to 32 GB storage capacity                                                                                                                                                                                                                                                                                                            |
| <b>Power supply</b>                                                    |                                                                                                                                                                                                                                                                                                                                                                                              |
| AC version                                                             | 100 ... 240 V AC, 50/60 Hz, 25 VA                                                                                                                                                                                                                                                                                                                                                            |
| DC version                                                             | 24 V DC ±20%, 12 W                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Power consumption</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                              |
| AC version                                                             | 6.24 W                                                                                                                                                                                                                                                                                                                                                                                       |
| DC version                                                             | 6.45 W                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Communication</b>                                                   |                                                                                                                                                                                                                                                                                                                                                                                              |
| Webserver                                                              | Web-based interface for local programming via web browser (only with PROFINET, EtherNet/IP communication)                                                                                                                                                                                                                                                                                    |
| Fieldbus                                                               | <ul style="list-style-type: none"> <li>HART 7</li> <li>PROFINET</li> <li>PROFIBUS DP</li> <li>PROFIBUS PA</li> <li>EtherNet/IP</li> <li>MODBUS RTU</li> <li>MODBUS TCP/IP</li> </ul>                                                                                                                                                                                                         |
| Remote configuration                                                   | <ul style="list-style-type: none"> <li>EDD via SIMATIC PDM</li> <li>SITRANS DTM via PACTware</li> <li>EDS-AOP file</li> </ul>                                                                                                                                                                                                                                                                |
| <b>Certificates and approvals</b>                                      |                                                                                                                                                                                                                                                                                                                                                                                              |
| General purpose                                                        | <ul style="list-style-type: none"> <li>CE (LVD, EMC, RoHS), UKCA</li> <li>UL, CSA certified per standard EN / IEC 61010-1</li> </ul>                                                                                                                                                                                                                                                         |
| Explosion protection                                                   | <ul style="list-style-type: none"> <li>FM - Non-incendive (NI) Class I, Div 2 <sup>1)2)</sup></li> <li>ATEX / IECEx - Increased safety (Ex e) Zone 2 <sup>1)2)</sup></li> </ul>                                                                                                                                                                                                              |
| Others                                                                 | <ul style="list-style-type: none"> <li>Environmental Product Declaration (EPD)</li> <li>EAC (Kazakhstan)</li> </ul>                                                                                                                                                                                                                                                                          |

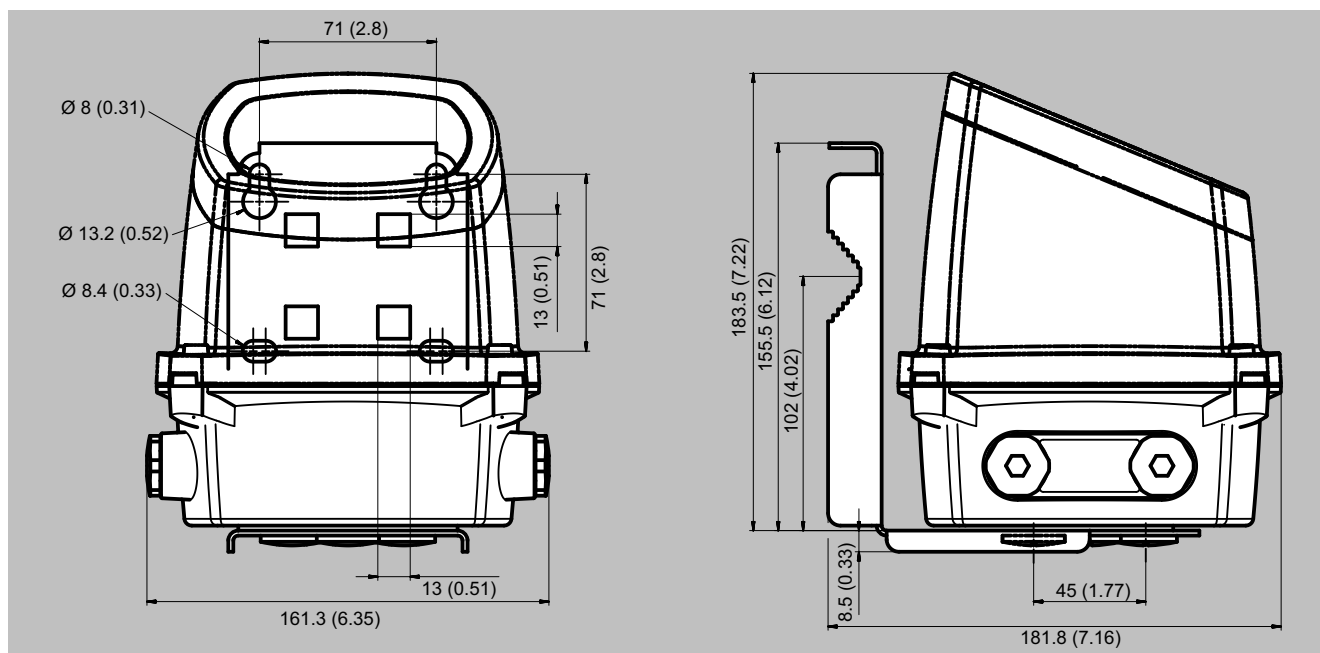
### Technical specifications (continued)

- 1) The Ex variant is only available with IP64 protection and in remote mounting
- 2) Only allowed with flexible conduits

### Dimensional drawings



FMT020 transmitter integral mounted, dimensions in mm (inch)



FMT020 transmitter remote mounted, dimensions in mm (inch)