

## Overview



The SITRANS FMS500 is a magnetic flowmeter sensor suitable for volume flow measurement of liquids (conductive) and is the ideal product for applications in water abstraction, wastewater treatment, water distribution networks, and irrigation.

The rugged, fully welded design supports direct burial, constant flooding and to stand up a wide range of harsh chemicals found in water-based applications in many different industries.

Designed for highly accurate measurement in low-flow conditions, these meters can measure from very low velocities up to 10 m/s, giving it a very wide measurement range.

Combined with a flowmeter transmitter it is a traditional externally powered electromagnetic flowmeter system

## Application

- 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

The SITRANS FMS500 with its NBR or EPDM rubber lining is a flow meter sensor for all kinds of water applications such as ground water, potable water, cooling water, wastewater, sewage, or sludge applications.

Connected to the compatible transmitter SITRANS FMT020, either mounted remotely or as a compact unit, it forms the magnetic flow meter system SITRANS FM520 which can be used in almost all general-purpose water applications.

### SITRANS FM520

Perfect match for a cost-effective solution for all water and wastewater applications. Standard measuring accuracy  $\pm 0.4\%$  of the actual flow rate, optional a high accuracy calibration with  $\pm 0.2\%$  of flow actual rate is available.

## Benefits

- Zero Up and Zero Down installation capabilities
- NBR rubber liner for all water and wastewater applications
- EPDM liner specifically for drinking water applications requiring special approvals
- Soft elastomer facing provides high abrasion resistance
- Increased low flow accuracy for water leak detection
- Rugged construction with no moving parts for maintenance-free operation over many years
- Simple on-site upgrade to IP68 of a standard sensor allowing underground installation, permanent immersion or underwater installation
- Integrated grounding electrodes – no grounding rings required for many applications
- Short delivery time
- Built-in length according to ISO 20456 (up to DN 400 mm)
- SENSORPROM™ Technology provides an automatic upload of start-up settings and calibration data for easy commissioning
- Designed to allow in-situ verification for easy performance check
- In conformity with ISO 4064, OIML R49 and EN 14154
- Custody transfer approvals for cold water billing (MI-001)

# SITRANS FM (electromagnetic)

## Flow sensors

### SITRANS FMS500

#### Selection and ordering data

| Sensor SITRANS FMS500                                                                           |  |  |  | Article No.<br>7ME653-  |  |  |  |
|-------------------------------------------------------------------------------------------------|--|--|--|-------------------------|--|--|--|
|                                                                                                 |  |  |  | • - • • • • • - 1 • A • |  |  |  |
| Click on the Article No. for the online configuration in the PIA Life Cycle Portal.             |  |  |  |                         |  |  |  |
| Transmitter variant                                                                             |  |  |  |                         |  |  |  |
| No transmitter (sensor only)                                                                    |  |  |  | 0                       |  |  |  |
| Transmitter SITRANS FMT020                                                                      |  |  |  | 2                       |  |  |  |
| Diameter                                                                                        |  |  |  |                         |  |  |  |
| DN 15, ½ inch                                                                                   |  |  |  | 1 V                     |  |  |  |
| DN 25, 1 inch                                                                                   |  |  |  | 2 D                     |  |  |  |
| DN 40, 1½ inch                                                                                  |  |  |  | 2 R                     |  |  |  |
| DN 50, 2 inch                                                                                   |  |  |  | 2 Y                     |  |  |  |
| DN 65, 2½ inch                                                                                  |  |  |  | 3 F                     |  |  |  |
| DN 80, 3 inch                                                                                   |  |  |  | 3 M                     |  |  |  |
| DN 100, 4 inch                                                                                  |  |  |  | 3 T                     |  |  |  |
| DN 125, 5 inch                                                                                  |  |  |  | 4 B                     |  |  |  |
| DN 150, 6 inch                                                                                  |  |  |  | 4 H                     |  |  |  |
| DN 200, 8 inch                                                                                  |  |  |  | 4 P                     |  |  |  |
| DN 250, 10 inch                                                                                 |  |  |  | 4 V                     |  |  |  |
| DN 300, 12 inch                                                                                 |  |  |  | 5 B                     |  |  |  |
| DN 350, 14 inch                                                                                 |  |  |  | 5 D                     |  |  |  |
| DN 400, 16 inch                                                                                 |  |  |  | 5 H                     |  |  |  |
| DN 450, 18 inch                                                                                 |  |  |  | 5 K                     |  |  |  |
| DN 500, 20 inch                                                                                 |  |  |  | 5 R                     |  |  |  |
| DN 600, 24 inch                                                                                 |  |  |  | 5 Y                     |  |  |  |
| DN 700, 28 inch                                                                                 |  |  |  | 6 B                     |  |  |  |
| DN 750, 30 inch                                                                                 |  |  |  | 6 D                     |  |  |  |
| DN 800, 32 inch                                                                                 |  |  |  | 6 H                     |  |  |  |
| DN 900, 36 inch                                                                                 |  |  |  | 6 K                     |  |  |  |
| DN 1000, 40 inch                                                                                |  |  |  | 6 R                     |  |  |  |
| DN 1050, 42 inch                                                                                |  |  |  | 6 Y                     |  |  |  |
| DN 1100, 44 inch                                                                                |  |  |  | 7 D                     |  |  |  |
| DN 1200, 48 inch                                                                                |  |  |  | 7 H                     |  |  |  |
| DN 1400, 54 inch                                                                                |  |  |  | 7 M                     |  |  |  |
| DN 1500, 60 inch                                                                                |  |  |  | 7 R                     |  |  |  |
| DN 1600, 64 inch                                                                                |  |  |  | 7 V                     |  |  |  |
| DN 1800, 72 inch                                                                                |  |  |  | 7 Y                     |  |  |  |
| DN 2000, 80 inch                                                                                |  |  |  | 8 B                     |  |  |  |
| Process connection                                                                              |  |  |  |                         |  |  |  |
| EN 1092-1 PN 6 flanges                                                                          |  |  |  | A                       |  |  |  |
| EN 1092-1 PN 10 flanges                                                                         |  |  |  | B                       |  |  |  |
| EN 1092-1 PN 16 flanges (PED compliant)                                                         |  |  |  | C                       |  |  |  |
| EN 1092-1 PN 16 flanges, non-PED type of equipment (excluded from scope of PED 2014/68/EU)      |  |  |  | D                       |  |  |  |
| EN 1092-1 PN 40 flanges                                                                         |  |  |  | F                       |  |  |  |
| ANSI B16.5 Class 150 flanges                                                                    |  |  |  | J                       |  |  |  |
| AWWA C-207 Class D flanges                                                                      |  |  |  | M                       |  |  |  |
| AS 4087 PN 16 flanges                                                                           |  |  |  | S                       |  |  |  |
| JIS B 2220:2004 10K flanges                                                                     |  |  |  | W                       |  |  |  |
| Process connection material                                                                     |  |  |  |                         |  |  |  |
| Carbon steel ASTM A 105 with corrosion-resistant coating acc. to EN ISO 12944 grade C4          |  |  |  | 0                       |  |  |  |
| Carbon steel ASTM A 105 with corrosion-resistant coating acc. to EN ISO 12944 grade C5 (300 µm) |  |  |  | 1                       |  |  |  |
| Liner material                                                                                  |  |  |  |                         |  |  |  |
| EPDM                                                                                            |  |  |  | 2                       |  |  |  |
| NBR                                                                                             |  |  |  | 3                       |  |  |  |
| Electrode material                                                                              |  |  |  |                         |  |  |  |
| Hastelloy C276 / 2.4819                                                                         |  |  |  | 1                       |  |  |  |
| Transmitter mounting & enclosure type                                                           |  |  |  |                         |  |  |  |
| No transmitter (sensor only)                                                                    |  |  |  | A                       |  |  |  |
| Compact design (integral mount), polycarbonate enclosure                                        |  |  |  | G                       |  |  |  |
| Remote design, polycarbonate enclosure (wall-mounting unit and sensor terminal board included)  |  |  |  | J                       |  |  |  |

## SITRANS FM (electromagnetic)

Flow sensors

SITRANS FMS500

## Selection and ordering data (continued)

| Sensor SITRANS FMS500      | Article No.<br>7ME653- |   |   |   |   |   |   |   |   |       |
|----------------------------|------------------------|---|---|---|---|---|---|---|---|-------|
|                            | •                      | - | • | • | • | • | • | - | 1 | • A • |
| <b>Power supply</b>        |                        |   |   |   |   |   |   |   |   |       |
| None (sensor only)         |                        |   |   |   |   |   |   |   |   | 0     |
| 12 ... 42 V DC             |                        |   |   |   |   |   |   |   |   | 2     |
| 100 ... 240 V AC, 50/60 Hz |                        |   |   |   |   |   |   |   |   | 3     |

1) Not concerned by PED

| Additional information                                                                    | Order code |
|-------------------------------------------------------------------------------------------|------------|
| Please add "-Z" to Article No. and specify Order code(s) and plain text.                  |            |
| <b>Cable glands</b>                                                                       |            |
| Without cable glands (blind plugs)                                                        | A00        |
| M20x1.5 cable glands, material polyamide                                                  | A02        |
| M20x1.5 cable glands, Ex, material polyamide                                              | A03        |
| 1/2 inch NPT cable glands, material polyamide                                             | A05        |
| 1/2 inch NPT cable glands, Ex, material polyamide                                         | A06        |
| <b>Certificates</b>                                                                       |            |
| Declaration of compliance with the order 2.1 (EN 10204)                                   | C00        |
| Inspection certificate 3.1 (EN 10204) - Material of pressure-containing and wetted parts  | C12        |
| Test report 2.2 (EN 10204)                                                                | C14        |
| Inspection certificate 3.1 (EN 10204) - Pressure test                                     | C18        |
| <b>High accuracy calibration</b>                                                          |            |
| High accuracy calibration +/- 0.2% of the act. vol. flow, DN ≤ 200, ≤ 8 inch              | D01        |
| High accuracy calibration +/- 0.2% of the act. vol. flow, DN 250 ... 600, 10 ... 24 inch  | D02        |
| High accuracy calibration +/- 0.2% of the act. vol. flow, DN 700 ... 1200, 28 ... 48 inch | D03        |
| High accuracy calibration +/- 0.2% of the act. vol. flow, DN ≥ 1400, ≥ 54 inch            | D04        |
| <b>5-point calibration</b>                                                                |            |
| 5-point factory calibration, DN ≤ 200, ≤ 8 inch                                           | D10        |
| 5-point factory calibration, DN 250 ... 600, 10 ... 24 inch                               | D11        |
| 5-point factory calibration, DN 700 ... 1200, 28 ... 48 inch                              | D12        |
| 5-point factory calibration, DN ≥ 1400, ≥ 54 inch                                         | D13        |
| <b>10-point calibration</b>                                                               |            |
| 10-point factory calibration, DN ≤ 200, ≤ 8 inch                                          | D15        |
| 10-point factory calibration, DN 250 ... 600, 10 ... 24 inch                              | D16        |
| 10-point factory calibration, DN 700 ... 1200, 28 ... 48 inch                             | D17        |
| 10-point factory calibration, DN ≥ 1400, ≥ 54 inch                                        | D18        |
| <b>Default matched-pair calibration</b>                                                   |            |
| Default matched-pair factory calibration, DN ≤ 200, ≤ 8 inch                              | D20        |
| Default matched-pair factory calibration, DN 250 ... 600, 10 ... 24 inch                  | D21        |
| Default matched-pair factory calibration, DN 700 ... 1200, 28 ... 48 inch                 | D22        |
| Default matched-pair factory calibration, DN ≥ 1400, ≥ 54 inch                            | D23        |
| <b>5-point matched-pair calibration</b>                                                   |            |
| 5-point, matched-pair factory calibration, DN ≤ 200, ≤ 8 inch                             | D25        |
| 5-point, matched-pair factory calibration, DN 250 ... 600, 10 ... 24 inch                 | D26        |
| 5-point, matched-pair factory calibration, DN 700 ... 1200, 28 ... 48 inch                | D27        |
| 5-point, matched-pair factory calibration, DN ≥ 1400, ≥ 54 inch                           | D28        |
| <b>10-point matched-pair calibration</b>                                                  |            |
| 10-point, matched-pair factory calibration, DN ≤ 200, ≤ 8 inch                            | D30        |
| 10-point, matched-pair factory calibration, DN 250 ... 600, 10 ... 24 inch                | D31        |

| Additional information                                                                                       | Order code |
|--------------------------------------------------------------------------------------------------------------|------------|
| 10-point, matched-pair factory calibration, DN 700 ... 1200, 28 ... 48 inch                                  | D32        |
| 10-point, matched-pair factory calibration, DN ≥ 1400, ≥ 54 inch                                             | D33        |
| <b>Accredited ISO/IEC 17025 calibration</b>                                                                  |            |
| ISO/IEC 17025 accredited, 5-point, matched-pair factory calibration, DN ≤ 200, ≤ 8 inch                      | D35        |
| ISO/IEC 17025 accredited, 5-point, matched-pair factory calibration, DN 250 ... 600, 10 ... 24 inch          | D36        |
| ISO/IEC 17025 accredited, 5-point, matched-pair factory calibration, DN 700 ... 1200, 28 ... 48 inch         | D37        |
| ISO/IEC 17025 accredited, 5-point, matched-pair factory calibration, DN ≥ 1400, ≥ 54 inch                    | D38        |
| <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>Drinking water approvals</b>                                                                              |            |
| WRAS (WRC, BS 6920, GB)                                                                                      | E80        |
| NSF/ANSI 61 (Cold water, US)                                                                                 | E81        |
| ACS (France)                                                                                                 | E82        |
| Compliance to Trinkwasserverordnung §14 (Germany)                                                            | E83        |
| Belgaqua (Belgium)                                                                                           | E84        |
| AS/NZS 4020 (Australia/New Zealand)                                                                          | E85        |
| GB/T 5750 (China)                                                                                            | E86        |
| General purpose / Without drinking water approval                                                            | E89        |
| <b>Country of origin</b>                                                                                     |            |
| France                                                                                                       | E90        |
| <b>Communication</b>                                                                                         |            |
| HART with 4 ... 20 mA output, active or passive                                                              | F01        |
| Modbus RTU / RS485                                                                                           | F04        |
| 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>Custody transfer approval</b>                                                                             |            |
| Without approval                                                                                             | G00        |
| MI-001 cold water meter                                                                                      | G01        |
| OIML R49 - Class 2 accuracy                                                                                  | G05        |
| OIML R49 - Class 1 accuracy                                                                                  | G06        |
| <b>MI-001 - OIML R49 verification</b>                                                                        |            |
| No initial verification, without certification, default factory calibration for DN 50 ... 300, 2 ... 12 inch | G10        |
| Dynamic range Q3/Q1 = 40 DN 50 ... 300, 2 ... 12 inch                                                        | G11        |

# SITRANS FM (electromagnetic)

## Flow sensors

### SITRANS FMS500

#### Selection and ordering data (continued)

| Additional information                                                                                            | Order code |
|-------------------------------------------------------------------------------------------------------------------|------------|
| Dynamic range Q3/Q1 = 80 DN 50 ... 300, 2 ... 12 inch                                                             | G13        |
| Dynamic range Q3/Q1 = 160 DN 50 ... 300, 1 ... 12 inch                                                            | G16        |
| Dynamic range Q3/Q1 = 200 DN 50 ... 300, 2 ... 12 inch                                                            | G17        |
| Dynamic range Q3/Q1 = 400 DN 50 ... 300, 2 ... 12 inch                                                            | G20        |
| <b>Device options</b>                                                                                             |            |
| Sensor terminal board factory mounted                                                                             | J00        |
| Sensor cables factory mounted                                                                                     | J01        |
| Factory preconfigured for transmitter mounting in compact design (integral mount)                                 | J02        |
| Display with protection cover                                                                                     | J03        |
| Breathing vent M20 thread, IP67                                                                                   | J04        |
| Breathing vent ½" NPT thread, IP67                                                                                | J05        |
| Industrial Micro-SD memory card, 20 GB storage capacity                                                           | J06        |
| Nameplate 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        |
| <b>Type of protection (IP)</b>                                                                                    |            |
| IP68 (NEMA 6P) protection class for sensor and transmitter, without potting (to 2 m depth, 10 days)               | L50        |
| IP68 (NEMA 6P) protection class for sensor in remote design, factory potted (to 10 m depth, continuously)         | L51        |
| <b>Sensor cables</b>                                                                                              |            |
| Cable kit with coil and electrode cable, standard type (3 × 1.5 mm²), PVC jacket                                  |            |
| • 5 m (16 ft)                                                                                                     | T00        |
| • 10 m (33 ft)                                                                                                    | T01        |
| • 20 m (65 ft)                                                                                                    | T03        |
| • 30 m (98 ft)                                                                                                    | T05        |
| • 40 m (131 ft)                                                                                                   | T06        |
| • 50 m (164 ft)                                                                                                   | T07        |
| • 60 m (197 ft)                                                                                                   | T08        |
| • 100 m (328 ft)                                                                                                  | T11        |
| • 150 m (492 ft)                                                                                                  | T14        |
| • 200 m (656 ft)                                                                                                  | T16        |
| • 500 m (1640 ft)                                                                                                 | T18        |
| Cable kit with coil cable standard type (3 × 1.5 mm²) and electrode cable special type (3 × 0.25 mm²), PVC jacket |            |
| • 5 m (16 ft)                                                                                                     | T50        |
| • 10 m (33 ft)                                                                                                    | T51        |
| • 15 m (49 ft)                                                                                                    | T52        |
| • 20 m (65 ft)                                                                                                    | T53        |
| • 25 m (82 ft)                                                                                                    | T54        |
| • 30 m (98 ft)                                                                                                    | T55        |
| • 40 m (131 ft)                                                                                                   | T56        |
| • 50 m (164 ft)                                                                                                   | T57        |
| • 60 m (197 ft)                                                                                                   | T58        |
| • 100 m (328 ft)                                                                                                  | T61        |

| Additional information                                                                                       | Order code |
|--------------------------------------------------------------------------------------------------------------|------------|
| • 150 m (492 ft)                                                                                             | T64        |
| • 200 m (656 ft)                                                                                             | T66        |
| • 500 m (1640 ft)                                                                                            | T68        |
| <b>Device settings</b>                                                                                       |            |
| Measuring range: Upper range value ( $Q_{max}$ ), unit                                                       | Y01        |
| Current output damping                                                                                       | Y02        |
| Current output signal range (Default setting: 4 ... 20 mA NAMUR)                                             | Y03        |
| Low flow cut off                                                                                             | Y04        |
| Flow direction (Default setting: Positive)                                                                   | Y05        |
| Empty pipe detection (Default setting: Off)                                                                  | Y06        |
| Mains frequency (Default setting: 50 Hz)                                                                     | Y07        |
| Operation language display (Default setting English)                                                         | Y24        |
| Device address (PROFIBUS 0 ... 125)                                                                          | Y25        |
| <b>Device identification</b>                                                                                 |            |
| Location designation (TAG), device parameter and stainless-steel plate for transmitter (max. 32 characters)  | Y11        |
| Measuring point description, device parameter and stainless-steel plate for transmitter (max. 32 characters) | Y12        |
| Location designation (TAG), device parameter and adhesive label for transmitter (max. 32 characters)         | Y13        |
| Measuring point description, device parameter and adhesive label for transmitter (max. 32 characters)        | Y14        |
| Location designation (TAG), device parameter and stainless-steel plate (max. 32 characters)                  | Y15        |
| Measuring point description, device parameter and stainless-steel plate (max. 32 characters)                 | Y16        |
| Location designation (TAG), device parameter and adhesive label (max. 32 characters)                         | Y18        |
| Measuring point description, device parameter and adhesive label (max. 32 characters)                        | Y19        |
| <b>Totalizer 1 settings</b>                                                                                  |            |
| Preset value                                                                                                 | Y30        |
| Unit (Default setting: m³)                                                                                   | Y31        |
| Direction (Default setting: Forward counting)                                                                | Y32        |
| Failure mode (Default setting: Continue counting)                                                            | Y33        |
| Decimal places (Default setting: 2)                                                                          | Y34        |
| <b>Totalizer 2 settings</b>                                                                                  |            |
| Preset value                                                                                                 | Y35        |
| Unit (Default setting: m³)                                                                                   | Y36        |
| Direction (Default setting: Backward counting)                                                               | Y37        |
| Failure mode (Default setting: Continue counting)                                                            | Y38        |
| Decimal places (Default setting: 2)                                                                          | Y39        |
| <b>Totalizer 3 settings</b>                                                                                  |            |
| Preset value                                                                                                 | Y40        |
| Unit (Default setting: m³)                                                                                   | Y41        |
| Direction (Default setting: Forward / backward counting, net)                                                | Y42        |
| Failure mode (Default setting: Continue counting)                                                            | Y43        |
| Decimal places (Default setting: 2)                                                                          | Y44        |
| <b>Pulse output settings</b>                                                                                 |            |
| Volume per pulse                                                                                             | Y50        |
| Pulse width                                                                                                  | Y51        |

## Technical specifications

| SITRANS FMS500 flowmeter sensor                                                   |                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product characteristic                                                            | For demanding applications in the water & wastewater industry                                                                                                                                                                                                                                                                                               |
| Measurement of                                                                    | Volume flow, flow velocity, electrical conductivity                                                                                                                                                                                                                                                                                                         |
| Nominal diameter                                                                  | Coned sensor (octagon liner): DN 15 ... 40 (½" ... 1½")<br>Coned sensor: DN 50 ... 300 (2" ... 12")<br>Full bore sensor: DN 350 ... 2000 (14" ... 80")                                                                                                                                                                                                      |
| Mode of operation                                                                 |                                                                                                                                                                                                                                                                                                                                                             |
| Measuring principle                                                               | Electromagnetic induction                                                                                                                                                                                                                                                                                                                                   |
| Medium conductivity                                                               | Liquids with an electrical conductivity $\geq 5 \mu\text{S/cm}$                                                                                                                                                                                                                                                                                             |
| Excitation frequency<br>(mains supply: 50 Hz / 60 Hz)                             | DN 15 ... 65 (½" ... 2½"): 12.5 Hz / 15 Hz<br>DN 80 ... 150 (3" ... 6"): 6.25 Hz / 7.5 Hz<br>DN 200 ... 300 (8" ... 12"): 3.125 Hz / 3.75 Hz<br>DN 350 ... 2000 (14" ... 80"): 1.5625 Hz / 1.875 Hz                                                                                                                                                         |
| Performance characteristics                                                       |                                                                                                                                                                                                                                                                                                                                                             |
| Electrical conductivity                                                           | Repeatability: Max. $\pm 5\%$ of measured value <sup>2)</sup>                                                                                                                                                                                                                                                                                               |
| Process connection                                                                |                                                                                                                                                                                                                                                                                                                                                             |
| Flanges <sup>1)</sup>                                                             |                                                                                                                                                                                                                                                                                                                                                             |
| • EN 1092-1                                                                       | PN 6 (87 psi): Raised face DN 1400 ... 2000 (54" ... 80")<br>PN 10 (145 psi) Flat face DN 200 ... 300 (8" ... 12")<br>PN 10 (145 psi) Raised face DN 350 ... 2000 (14" ... 80")<br>PN 16 (232 psi) Flat face DN 50 ... 300 (2" ... 12")<br>PN 16 (232 psi) Raised face DN 350 ... 1200 (14" ... 48")<br>PN 40 (580 psi) Flat face DN 15 ... 40 (½" ... 1½") |
| • ANSI B16.5                                                                      | Class 150 Flat face ½" ... 12"<br>Class 150 Raised face 14" ... 24"                                                                                                                                                                                                                                                                                         |
| • AWWA C-207                                                                      | Class D Flat face 28 ... 80"                                                                                                                                                                                                                                                                                                                                |
| • AS/NZS 4087                                                                     | PN 16 (232 psi) Flat face DN 50 ... 300 (2" ... 12")<br>PN 16 (232 psi) Raised face DN 350 ... 1200 (14" ... 48")                                                                                                                                                                                                                                           |
| • JIS B 2220:2004                                                                 | 10K DN 15 ... 600 (1" ... 24")                                                                                                                                                                                                                                                                                                                              |
| Rated operating conditions                                                        |                                                                                                                                                                                                                                                                                                                                                             |
| Ambient temperature                                                               |                                                                                                                                                                                                                                                                                                                                                             |
| • Sensor                                                                          | -20 ... +70 °C (-4 ... +158 °F)                                                                                                                                                                                                                                                                                                                             |
| • Compact with transmitter                                                        | -20 ... +65 °C (-4 ... +149 °F)                                                                                                                                                                                                                                                                                                                             |
| Operating pressure (abs)<br>(maximum operating pressure depending on flange type) | DN 15 ... 40 (1/2" ... 1 1/2"): 0.01 ... 40 bar (0.15 ... 580 psi)<br>DN 50 ... 300 (2" ... 12"): 0.03 ... 20 bar (0.44 ... 290 psi)<br>DN 350 ... 1200 (14" ... 48"): 0.01 ... 16 bar (0.15 ... 232 psi)<br>DN 1400 ... 2000 (54" ... 80"): 0.01 ... 10 bar (0.15 ... 145 psi)                                                                             |
| Protection class                                                                  |                                                                                                                                                                                                                                                                                                                                                             |
| • Standard                                                                        | IP66/67, NEMA 4X/6                                                                                                                                                                                                                                                                                                                                          |
| • Optional                                                                        | IP68 and NEMA 6P (2 m, 10 days) for sensor in compact (integral mount) and remote design<br>IP68 and NEMA 6P (10 m, continuously) for sensor in remote design                                                                                                                                                                                               |
| Mechanical load (vibration)                                                       |                                                                                                                                                                                                                                                                                                                                                             |
| • Integral mount / compact version                                                | Vibration, sinusoidal according to IEC 60068-2-6<br>• 2 ... 4 Hz, 3.5 mm peak<br>• 8.4 ... 500 Hz, 1 g peak<br>Vibration broad-band random, according to IEC 60068-2-64<br>• 10 ... 200 Hz, 0.003 g <sup>2</sup> /Hz<br>• 200 ... 500 Hz, 0.001 g <sup>2</sup> /Hz<br>• Total: 1.54 g rms                                                                   |
| • Remote version                                                                  | Vibration, sinusoidal according to IEC 60068-2-6<br>Sensor<br>• 2 ... 8.4 Hz, 7.5 mm peak<br>• 8.4 ... 500 Hz, 2 g peak<br>Transmitter<br>• 2 ... 8.4 Hz, 1.5 mm peak<br>• 8.4 ... 500 Hz, 0.7 g peak                                                                                                                                                       |

# SITRANS FM (electromagnetic)

## Flow sensors

### SITRANS FMS500

#### Technical specifications (continued)

| SITRANS FMS500 flowmeter sensor   |                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                          |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| • Remote version                  | Vibration broad-band random, according to IEC 60068-2 64                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                          |
|                                   | Sensor                                                                                                                                                                                                                                                                                                                                                                                           | Transmitter                                                                                                                                                              |
|                                   | <ul style="list-style-type: none"> <li>• 10 ... 200 Hz, 0.01 g<sup>2</sup>/Hz</li> <li>• 200 ... 500 Hz, 0.003 g<sup>2</sup>/Hz</li> <li>• Total: 1.54 g rms</li> </ul>                                                                                                                                                                                                                          | <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> |
| Process temperature               |                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                          |
| • NBR liner                       | -10 ... +70 °C (14 ... 158 °F)                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                          |
| • EPDM liner                      | -10 ... +70 °C (14 ... 158 °F)                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                          |
| <b>Pressure drop</b>              | DN 15 and 25 (½" and 1"): Max. 20 mbar (0.29 psi) at 1 m/s (3 ft/s)<br>DN 40 ... 300 (1½" ... 12"): Max. 25 mbar (0.36 psi) at 3 m/s (10 ft/s)<br>DN 350 ... 2000 (14" ... 80"): Insignificant                                                                                                                                                                                                   |                                                                                                                                                                          |
| <b>Test pressure</b>              | 1.5 × PN (where applicable)                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                          |
| <b>Design</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                          |
| Dimensions                        | See dimensional drawings                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                          |
| Weight                            | See dimensional drawings                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                          |
| Material                          |                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                          |
| • Housing and flanges             | Carbon steel ASTM A 105 with corrosion resistant coating of Class C4 or C5 (durability up to 15 years)<br>EN ISO 12944                                                                                                                                                                                                                                                                           |                                                                                                                                                                          |
| • Measuring electrode             | Hastelloy C276 / 2.4819                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                          |
| • Grounding electrode             | Hastelloy C276 / 2.4819                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                          |
| • Measuring tube <sup>2)</sup>    | Stainless steel AISI 304 / 1.4301                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                          |
| • Terminal box                    | Polycarbonate                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                          |
| Cable entries                     | 4 × metric thread (size M20 × 1.5)                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                          |
| <b>Calibration</b>                |                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                          |
| Standard                          | Zero-point, 2 × 25 % and 2 × 90 %                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                          |
| Optional                          | <ul style="list-style-type: none"> <li>• 5-point calibration: 20 %, 40 %, 60 %, 80 %, 100 % of factory Q<sub>max</sub></li> <li>• 10-point calibration: ascending and descending at 20 %, 40 %, 60 %, 80 %, 100 % of factory Q<sub>max</sub></li> <li>• Matched pair calibration: default, 5-point or 10-point</li> <li>• ISO/IEC 17025 accredited, 5-point, matched-pair calibration</li> </ul> |                                                                                                                                                                          |
| <b>Certificates and approvals</b> |                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                          |
| General purpose                   | CE (LVD, PED, EMC, RoHS), UKCA                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                          |
| Drinking water                    | <ul style="list-style-type: none"> <li>• WRAS (WRc, BS 6920 material approval for cold water, GB)</li> <li>• NSF/ANSI Standard 61 (Cold water, US)</li> <li>• ACS listed (France)</li> <li>• Compliance to Trinkwasserverordnung §14 (Germany)</li> <li>• Belgaqua (Belgium)</li> <li>• AS/NZS 4020 (Australia/New Zealand)</li> <li>• GB/T 5750 (China)</li> </ul>                              |                                                                                                                                                                          |
| Custody transfer                  | • MI-001 cold water (EU): DN 50 ... 300 (2 ... 12 inch)                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                          |
| Explosion protection              | <ul style="list-style-type: none"> <li>• FM - Non-incendive (NI) Class I, Division 2 <sup>4)</sup></li> <li>• ATEX / IECEx - Increased safety (Ex e) Zone 2 <sup>4)</sup></li> </ul>                                                                                                                                                                                                             |                                                                                                                                                                          |
| Others                            | <ul style="list-style-type: none"> <li>• Environmental Product Declaration (EPD)</li> <li>• MCERTS (GB environmental)</li> <li>• EAC (Kazakhstan)</li> </ul>                                                                                                                                                                                                                                     |                                                                                                                                                                          |

<sup>1)</sup> DN 750, DN 1050 and DN 1100 (30", 42" and 44") not available with EN 1092-1 (PN 10 and PN 16) and AS 4087 flanges

<sup>2)</sup> The value applies for measurement between 15 µS/cm and 5000 µS/cm at a reference temperature of 25 °C (77 °F)

<sup>3)</sup> DN > 300 (12")

<sup>4)</sup> The Ex variant is only available with IP64 protection and in remote mounting

#### FMS500 (7ME653) with FMT020 (7ME694)

The FM520 water meter, which combines the FMS500 sensor and FMT020 transmitter, is EU-type approved according to MID Directive

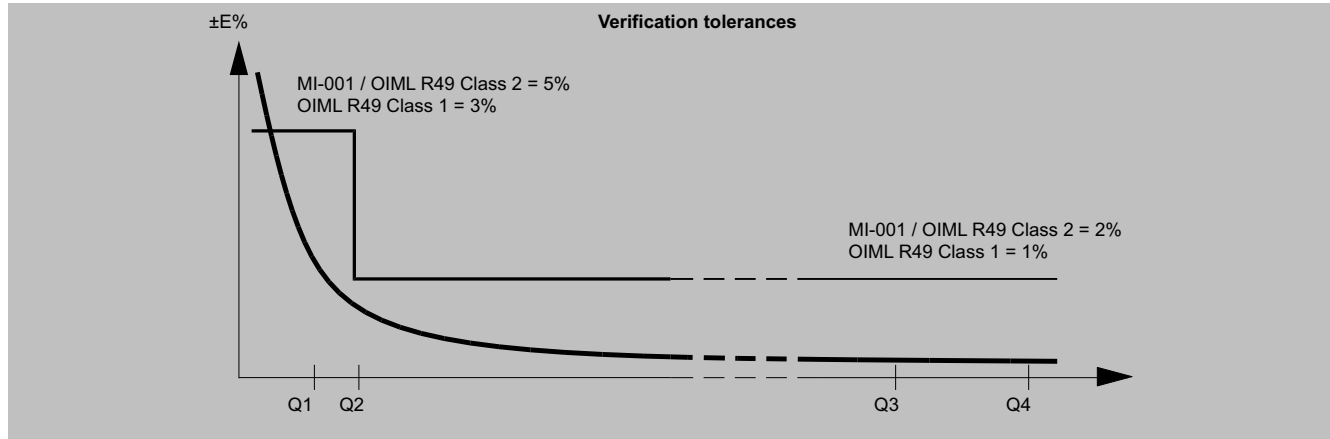
2014/32/EU of the European Parliament and of the Council of 26 February 2014 on Measuring Instruments (Annex III – Water Meters

## Technical specifications (continued)

MI-001). It also meets OIML R49 recommendations for Class 1 and 2 (Water meters for cold potable water and hot water).

Extensive testing has ensured its superior measurement accuracy, even under challenging inlet and outlet conditions. This allows for flexible installation in tight spaces without the need for pipe re-routing, as the FMS500 functions as a OD/OD device for both Class 1 and Class 2 accuracy, requiring no inlet or outlet sections.

Furthermore, while primarily a cold water meter, the FM520 has been rigorously tested and passed at temperatures up to 50 °C (122 °F), including 30 °C (86 °F). This robust performance means it can be used for custody transfer (CT) purposes up to 50 °C (122 °F).



## G00 - Without custody transfer approval

Order code: G10

| Size        | DN 50 (2")       | DN 65 (2½") | DN 80 (3") | DN 100 (4") | DN 125 (5") | DN 150 (6") | DN 200 (8") | DN 250 (10") | DN 300 (12") |
|-------------|------------------|-------------|------------|-------------|-------------|-------------|-------------|--------------|--------------|
| UxDx        | 0 x DN           |             |            |             |             |             |             |              |              |
| Orientation | All orientations |             |            |             |             |             |             |              |              |
| Q3 [m³/h]   | 63               | 100         | 160        | 250         | 400         | 630         | 1000        | 1600         | 1600         |

## G01 - MI-001

G05 - OIML R49 Class 2

G06 - OIML R49 Class 1

Order code: G11

| Size        | DN 50 (2")       | DN 65 (2½") | DN 80 (3") | DN 100 (4") | DN 125 (5") | DN 150 (6") | DN 200 (8") | DN 250 (10") | DN 300 (12") |
|-------------|------------------|-------------|------------|-------------|-------------|-------------|-------------|--------------|--------------|
| UxDx        | 0 x DN           |             |            |             |             |             |             |              |              |
| Orientation | All orientations |             |            |             |             |             |             |              |              |
| "R" Q3/Q1   | 40               | 40          | 40         | 40          | 40          | 40          | 40          | 40           | 40           |
| Q4 [m³/h]   | 78.75            | 125         | 200        | 312.5       | 500         | 787.5       | 1250        | 2000         | 2000         |
| Q3 [m³/h]   | 63               | 100         | 160        | 250         | 400         | 630         | 1000        | 1600         | 1600         |
| Q2 [m³/h]   | 2.52             | 4           | 6.40       | 10          | 16          | 25.20       | 40          | 64           | 64           |
| Q1 [m³/h]   | 1.58             | 2.50        | 4          | 6.25        | 10          | 15.75       | 25          | 40           | 40           |

## G01 - MI-001

G05 - OIML R49 Class 2

G06 - OIML R49 Class 1

Order code: G13

| Size        | DN 50 (2")       | DN 65 (2½") | DN 80 (3") | DN 100 (4") | DN 125 (5") | DN 150 (6") | DN 200 (8") | DN 250 (10") | DN 300 (12") |
|-------------|------------------|-------------|------------|-------------|-------------|-------------|-------------|--------------|--------------|
| UxDx        | 0 x DN           |             |            |             |             |             |             |              |              |
| Orientation | All orientations |             |            |             |             |             |             |              |              |
| "R" Q3/Q1   | 80               | 80          | 80         | 80          | 80          | 80          | 80          | 80           | 80           |
| Q4 [m³/h]   | 78.75            | 125         | 200        | 312.50      | 500         | 787.50      | 1250        | 2000         | 2000         |
| Q3 [m³/h]   | 63               | 100         | 160        | 250         | 400         | 630         | 1000        | 1600         | 1600         |
| Q2 [m³/h]   | 1.26             | 2           | 3.20       | 5           | 8           | 12.60       | 20          | 32           | 32           |
| Q1 [m³/h]   | 0.79             | 1.25        | 2          | 3.13        | 5           | 7.88        | 12.50       | 20           | 20           |

# SITRANS FM (electromagnetic)

## Flow sensors

### SITRANS FMS500

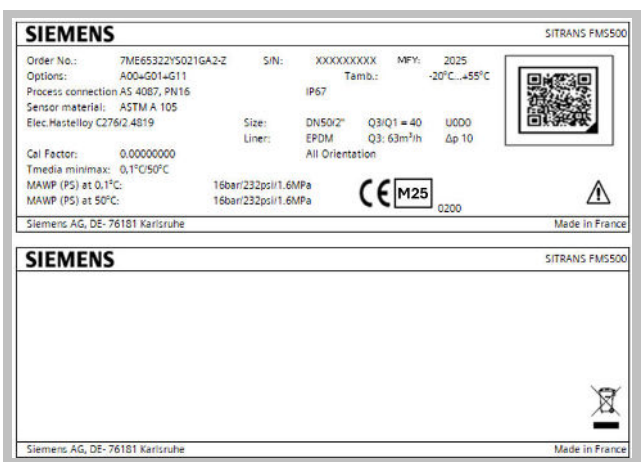
#### Technical specifications (continued)

| <b>G01 - MI-001</b><br><b>G05 - OIIML R49 Class 2</b><br><b>Order code: G16</b> |                  |             |            |             |             |             |             |              |              |
|---------------------------------------------------------------------------------|------------------|-------------|------------|-------------|-------------|-------------|-------------|--------------|--------------|
| Size                                                                            | DN 50 (2")       | DN 65 (2½") | DN 80 (3") | DN 100 (4") | DN 125 (5") | DN 150 (6") | DN 200 (8") | DN 250 (10") | DN 300 (12") |
| UxDx                                                                            | 0 x DN           |             |            |             |             |             |             |              |              |
| Orientation                                                                     | All orientations |             |            |             |             |             |             |              |              |
| "R" Q3/Q1                                                                       | 160              | 160         | 160        | 160         | 160         | 160         | 160         | 160          | 160          |
| Q4 [m³/h]                                                                       | 78.75            | 125         | 200        | 312.5       | 500         | 787.5       | 1250        | 2000         | 2000         |
| Q3 [m³/h]                                                                       | 63               | 100         | 160        | 250         | 400         | 630         | 1000        | 1600         | 1600         |
| Q2 [m³/h]                                                                       | 0.63             | 1           | 1.60       | 2.50        | 4           | 6.3         | 10          | 16           | 16           |
| Q1 [m³/h]                                                                       | 0.39             | 0.63        | 1          | 1.56        | 2.5         | 3.94        | 6.25        | 10           | 10           |

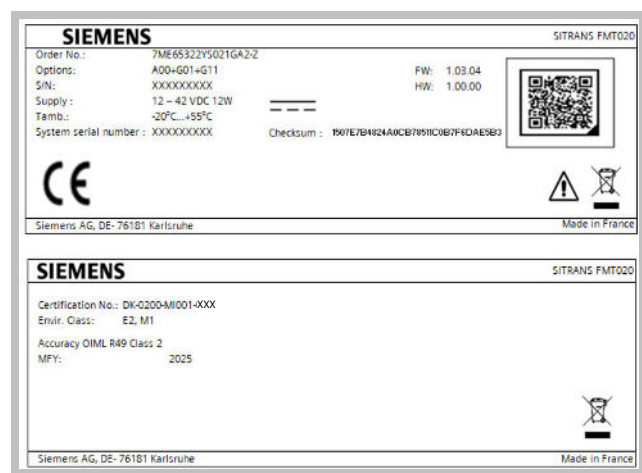
| <b>G01 - MI-001</b><br><b>G05 - OIIML R49 Class 2</b><br><b>G06 - OIIML R49 Class 1</b><br><b>Order code: G17</b> |                  |             |            |             |             |             |             |              |              |
|-------------------------------------------------------------------------------------------------------------------|------------------|-------------|------------|-------------|-------------|-------------|-------------|--------------|--------------|
| Size                                                                                                              | DN 50 (2")       | DN 65 (2½") | DN 80 (3") | DN 100 (4") | DN 125 (5") | DN 150 (6") | DN 200 (8") | DN 250 (10") | DN 300 (12") |
| UxDx                                                                                                              | 0 x DN           |             |            |             |             |             |             |              |              |
| Orientation                                                                                                       | All orientations |             |            |             |             |             |             |              |              |
| "R" Q3/Q1                                                                                                         | 200              | 200         | 200        | 200         | 200         | 200         | 200         | 200          | 200          |
| Q4 [m³/h]                                                                                                         | 78.75            | 125         | 200        | 312.5       | 500         | 787.5       | 1250        | 2000         | 2000         |
| Q3 [m³/h]                                                                                                         | 63               | 100         | 160        | 250         | 400         | 630         | 1000        | 1600         | 1600         |
| Q2 [m³/h]                                                                                                         | 0.5              | 0.8         | 1.28       | 2           | 3.2         | 5.04        | 8.00        | 12.8         | 12.8         |
| Q1 [m³/h]                                                                                                         | 0.32             | 0.5         | 0.8        | 1.25        | 2           | 3.15        | 5.00        | 8            | 8            |

| <b>G01 - MI-001</b><br><b>G05 - OIIML R49 Class 2</b><br><b>G06 - OIIML R49 Class 1</b><br><b>Order code: G20</b> |                  |             |            |             |             |             |             |              |              |
|-------------------------------------------------------------------------------------------------------------------|------------------|-------------|------------|-------------|-------------|-------------|-------------|--------------|--------------|
| Size                                                                                                              | DN 50 (2")       | DN 65 (2½") | DN 80 (3") | DN 100 (4") | DN 125 (5") | DN 150 (6") | DN 200 (8") | DN 250 (10") | DN 300 (12") |
| UxDx                                                                                                              | 0 x DN           |             |            |             |             |             |             |              |              |
| Orientation                                                                                                       | All orientations |             |            |             |             |             |             |              |              |
| "R" Q3/Q1                                                                                                         | 400              | 400         | 400        | 400         | 400         | 400         | 400         | 400          | 400          |
| Q4 [m³/h]                                                                                                         | 78.75            | 125         | 200        | 312.5       | 500         | 787.5       | 1250        | 2000         | 2000         |
| Q3 [m³/h]                                                                                                         | 63               | 100         | 160        | 250         | 400         | 630         | 1000        | 1600         | 1600         |
| Q2 [m³/h]                                                                                                         | 0.25             | 0.4         | 0.64       | 1           | 1.6         | 2.52        | 4           | 6.4          | 6.4          |
| Q1 [m³/h]                                                                                                         | 0.16             | 0.25        | 0.4        | 0.63        | 1           | 1.58        | 2.5         | 4            | 4            |

The following label is placed on the sensor terminal box and on the transmitter housing. An example of the product label is shown below:



Sensor label



Transmitter label

FM520 approvals are valid for:

## Technical specifications (continued)

|                              |                                                                                                                                                                                                         |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Sizes</b>                 | DN 50 ... 300 (2" ... 12")                                                                                                                                                                              |
| <b>Performance range</b>     | <ul style="list-style-type: none"> <li>• R400 Class 2</li> <li>• R200 Class 1</li> </ul>                                                                                                                |
| <b>Installation</b>          | <ul style="list-style-type: none"> <li>• All orientation</li> <li>• Compact or remote with max. 500 m cable</li> <li>• Approved for forward metering but also designed to be used in reverse</li> </ul> |
| <b>Sensitivity class</b>     | U0D0 (The meter requires 0xD straight pipe upstream and 0xD straight pipe downstream from the sensor)                                                                                                   |
| <b>Temperature class</b>     | <ul style="list-style-type: none"> <li>• T30 (0.1 ... 30 °C)</li> <li>• T50 (0.1 ... 50 °C)</li> </ul>                                                                                                  |
| <b>Pressure</b>              | MAWP 16 (Maximum Allowable Working Pressure)                                                                                                                                                            |
| <b>Electromagnetic class</b> | E2                                                                                                                                                                                                      |
| <b>Mechanical class</b>      | M1, Class B and O (building and outdoors)                                                                                                                                                               |
| <b>Climatic class</b>        | -20 ... 55 °C (-4 ... 131 °F)                                                                                                                                                                           |
| <b>Power supply</b>          | <ul style="list-style-type: none"> <li>• 12 ... 42 V DC, 12 W</li> <li>• 100 ... 240 V AC, 50 ... 60 Hz, 25 VA</li> </ul>                                                                               |
| <b>Software</b>              | Designed according to WELMEC 7.2                                                                                                                                                                        |

|                                            |                                                                                                                                                                                                                                            |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Communication modules <sup>1)</sup></b> | HART, PROFINET, MODBUS and ETHERNET IP have been certified and can only be used where national regulations permit it. The reading of ancillary devices may be used for testing and verification and for remote reading of the water meter. |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

<sup>1)</sup> Communication module need to be ordered together with the system (FM520), a retrofit of the communication module is not possible since it would break the CT seals.

Special MI-001 settings:

- Unit: m<sup>3</sup>
- Low flow cut-off: 0.9 mm/s
- Digital output: pulses

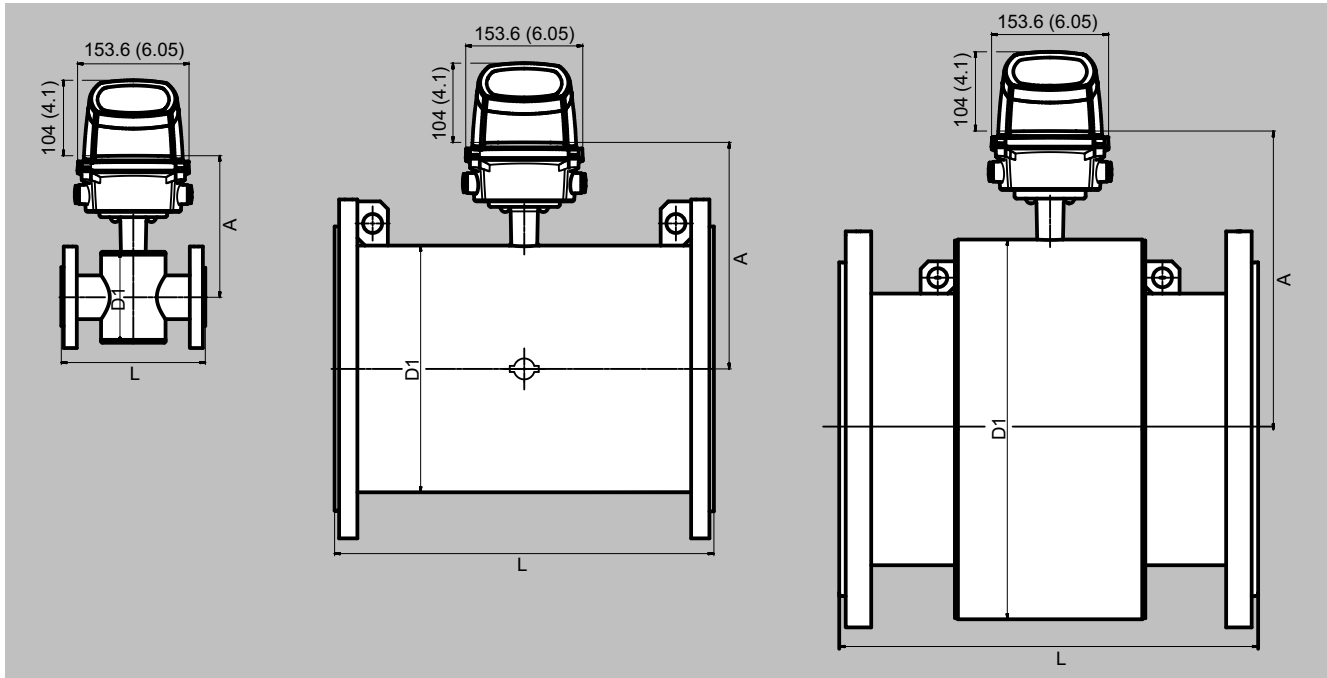
For other factory settings, see the operating instructions.

# SITRANS FM (electromagnetic)

## Flow sensors

### SITRANS FMS500

#### Dimensional drawings



SITRANS FMS500 Sensor: DN 15 ... 40, ½" ... 1½" (left), DN 50 ... 300, 2" ... 12" (middle) and DN 350 ... 2000, 14" ... 80" (right)

| Sensor SITRANS FMS500 (7ME653) |        |      |        |      |        |                 |        |                      |       |
|--------------------------------|--------|------|--------|------|--------|-----------------|--------|----------------------|-------|
| Nominal diameter               |        | A    |        | D1   |        | L <sup>1)</sup> |        | Weight <sup>1)</sup> |       |
| [mm]                           | [inch] | [mm] | [inch] | [mm] | [inch] | [mm]            | [inch] | [kg]                 | [lbs] |
| 15                             | ½      | 170  | 6.7    | 77   | 3.0    | 200             | 7.9    | 5                    | 11    |
| 25                             | 1      | 180  | 7.1    | 96   | 3.8    | 200             | 7.9    | 6                    | 13    |
| 40                             | 1½     | 195  | 7.7    | 127  | 5.0    | 200             | 7.9    | 9                    | 20    |
| 50                             | 2      | 181  | 7.1    | 76   | 3.0    | 200             | 7.9    | 10                   | 22    |
| 65                             | 2½     | 187  | 7.4    | 89   | 3.5    | 200             | 7.9    | 12                   | 26    |
| 80                             | 3      | 193  | 7.6    | 102  | 4.0    | 200             | 7.9    | 13                   | 29    |
| 100                            | 4      | 200  | 7.9    | 114  | 4.5    | 250             | 9.8    | 17                   | 37    |
| 125                            | 5      | 210  | 8.3    | 140  | 5.5    | 250             | 9.8    | 20                   | 44    |
| 150                            | 6      | 225  | 8.9    | 168  | 6.6    | 300             | 11.8   | 27                   | 60    |
| 200                            | 8      | 250  | 9.8    | 219  | 8.6    | 350             | 13.8   | 39                   | 86    |
| 250                            | 10     | 277  | 10.9   | 273  | 10.8   | 450             | 17.7   | 56                   | 123   |
| 300                            | 12     | 303  | 11.9   | 324  | 12.8   | 500             | 19.7   | 72                   | 159   |
| 350                            | 14     | 375  | 14.8   | 451  | 17.8   | 550             | 21.7   | 115                  | 254   |
| 400                            | 16     | 400  | 15.7   | 502  | 19.8   | 600             | 23.6   | 143                  | 315   |
| 450                            | 18     | 431  | 17.0   | 563  | 22.2   | 600             | 23.6   | 177                  | 390   |
| 500                            | 20     | 456  | 18.0   | 614  | 24.2   | 600             | 23.6   | 222                  | 489   |
| 600                            | 24     | 507  | 20.0   | 715  | 28.2   | 600             | 23.6   | 321                  | 708   |
| 700                            | 28     | 557  | 21.9   | 816  | 32.1   | 700             | 27.6   | 331                  | 730   |
| 750                            | 30     | 584  | 23.0   | 869  | 34.2   | 750             | 29.5   | -                    | -     |
| 800                            | 32     | 609  | 24.0   | 927  | 36.5   | 800             | 31.5   | 386                  | 851   |
| 900                            | 36     | 656  | 25.8   | 1032 | 40.6   | 900             | 35.4   | 482                  | 1063  |
| 1000                           | 40     | 707  | 27.8   | 1136 | 44.7   | 1000            | 39.4   | 672                  | 1482  |
| 1050                           | 42     | 707  | 27.8   | 1136 | 44.7   | 1000            | 39.4   | -                    | -     |
| 1100                           | 44     | 758  | 29.8   | 1238 | 48.7   | 1100            | 43.3   | -                    | -     |
| 1200                           | 48     | 813  | 32.0   | 1348 | 53.1   | 1200            | 47.2   | 1116                 | 2460  |
| 1400                           | 54     | 918  | 36.1   | 1574 | 65.94  | 1400            | 55.1   | 1592                 | 3502  |
| 1500                           | 60     | 965  | 38.0   | 1672 | 65.83  | 1500            | 59.1   | 1850                 | 4070  |
| 1600                           | 66     | 1018 | 40.1   | 1774 | 75.39  | 1600            | 63.0   | 2110                 | 4642  |
| 1800                           | 72     | 1116 | 43.9   | 1974 | 77.72  | 1800            | 70.9   | 2560                 | 5632  |
| 2000                           | 80     | 1216 | 47.9   | 2174 | 85.59  | 2000            | 78.9   | 3640                 | 8008  |

## Dimensional drawings (continued)

- <sup>1)</sup> Weights are appr. for sensor with EN 1092-1 PN 16 flanges without transmitter. With transmitter FMT020 mounted, weight is increased by appr. 1.0 kg (2.2 lb).