

SITRANS F flowmeters

SITRANS F M



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Flow sensor 911/F5

Overview



This special design of an electromagnetic flowmeter is particularly suitable for measuring the flow of extremely small quantities and especially for use with proportioning and batching systems. In conjunction with the SITRANS F M transmitters Transmag 2, complex tasks can be solved using the integral software for batching applications.

Benefits

- Metering tube made by high corrosion-resistant and heat-resistant zirconium oxide
- Metering tube internal diameter 2 mm (0.078") and above
- Smallest measuring range 0 to 3 l/h (o to 0.0132 USgpm) with alternate field measurement
- Robust and interference-free as result of closed steel housing

Application

Typical applications can be found in the food industry, the dosing of chemicals in photographic systems, and the dosing of medicines in medical fields.

When using the alternating field technique with the SITRANS F M transmitter Transmag 2, even very small flows can be exactly measured as a result of the larger magnetic field and the zero stability.

The main applications of the SITRANS F M flow sensor 911/F5 can be found in the following fields:

- Water, waste water
- Power generation and distribution
- Chemical industry
- Food industry.

Mode of operation

Information on operation can be found in the data sheet for the SITRANS F M transmitter Transmag 2.

Technical specifications

| | | |
|---------------------------|---|--|
| Measuring principle | Pulsed alternating field (AC) | |
| Input | | |
| Nominal diameters | DN 2 ... DN 12 (0.078" ... 0.47") | |
| Pressure limit | 25 bar (362.5 psi), higher on request | |
| Metering tube connections | | |
| • Male thread | G $\frac{1}{2}$ ", NPT $\frac{1}{2}$ " | |
| • Flanges | DN 15 (1/2"), 1/2" ANSI 150 RF, 15 mm JIS 10K | |
| • Thread to DIN 11 851 | DN 15 (1/2"), 1/2" Tri-Clamp | |

Rated operating conditions

Ambient conditions

| | | |
|--|-----------------------------|-------------------------|
| Max. operating temperature | 150 °C (302 °F) | |
| Pressure / temperature limits (DIN 8062) with PVDF connections | Temperature °C (°F) | Max. pressure bar (psi) |
| | 0 ... 50 °C (32 ... 122 °F) | 10 (145) |
| | 60 °C (140 °F) | 8.5 (123) |
| | 70 °C (158 °F) | 7.5 (109) |
| | 80 °C (176 °F) | 6.5 (94) |
| | 90 °C (194 °F) | 5.5 (80) |
| | 100 °C (212 °F) | 4.5 (65) |
| 110 °C (230 °F) | 3.8 (55) | |
| 120 °C (248 °F) | 3.0 (44) | |

Degree of protection IP67, higher on request

Medium conditions

| | | |
|-----------------------------------|------------------------------------|--------------------------------------|
| Minimum conductivity | • With alternating field > 1 µS/cm | |
| Full-scale values in l/h (USgpm) | Alternating field | |
| | • DN 2 (0.078") | 3 ... 110 (0.013 ... 0.48) |
| | • DN 4 (0.156") | 15 ... 450 (0.066 ... 1.98) |
| | • DN 8 (0.312") | 60 ... 1800 (0.26 ... 7.92) |
| | • DN 12 (0.47") | 120 ... 4000 (0.53 ... 17.61) |
| Full-scale value of flow velocity | • With alternating field | 0.15 ... 12 m/s (0.49 ... 39.4 ft/s) |

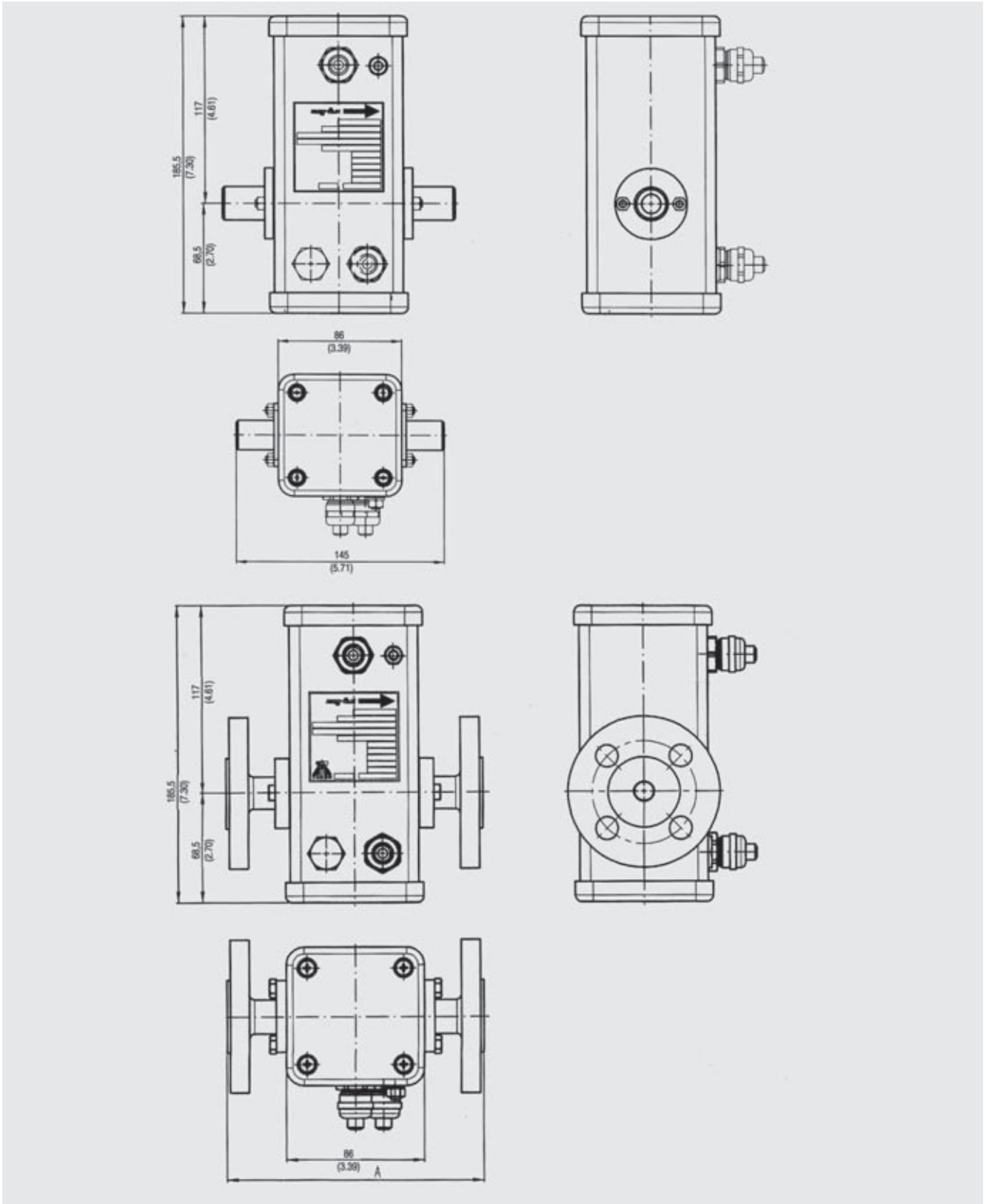
Design

| | |
|----------------------------|---|
| Version | Fully-welded steel fitting |
| Weight | 3 kg (6.61 lb) |
| Cable inlet | |
| • With alternating field | 2 x Pg 11 / M18 |
| Material | |
| • Metering tube | Zirconium oxide |
| • Sensor housing | Steel |
| • Metering tube connection | Stainless steel, mat. No. 1.4571/316Ti, Hastelloy C4/2.4610, PVDF |
| Electrodes | |
| • Material | Platinum 99.9%, sintered |
| • Design | Flat electrodes |

Certificates and approvals

Classification according to pressure For liquids of fluid group 1; complies with requirements according to article 3, paragraph 3 (sound engineering practice SEP)

Dimensional drawings



| Connections | Material | A |
|---|--------------|-----------|
| DN 15 / PN 25 | Metal | 145 (5.7) |
| DN 15 / PN 25 ½" ANSI 150 ... 300 lb | Plastic PVDF | 160 (6.3) |

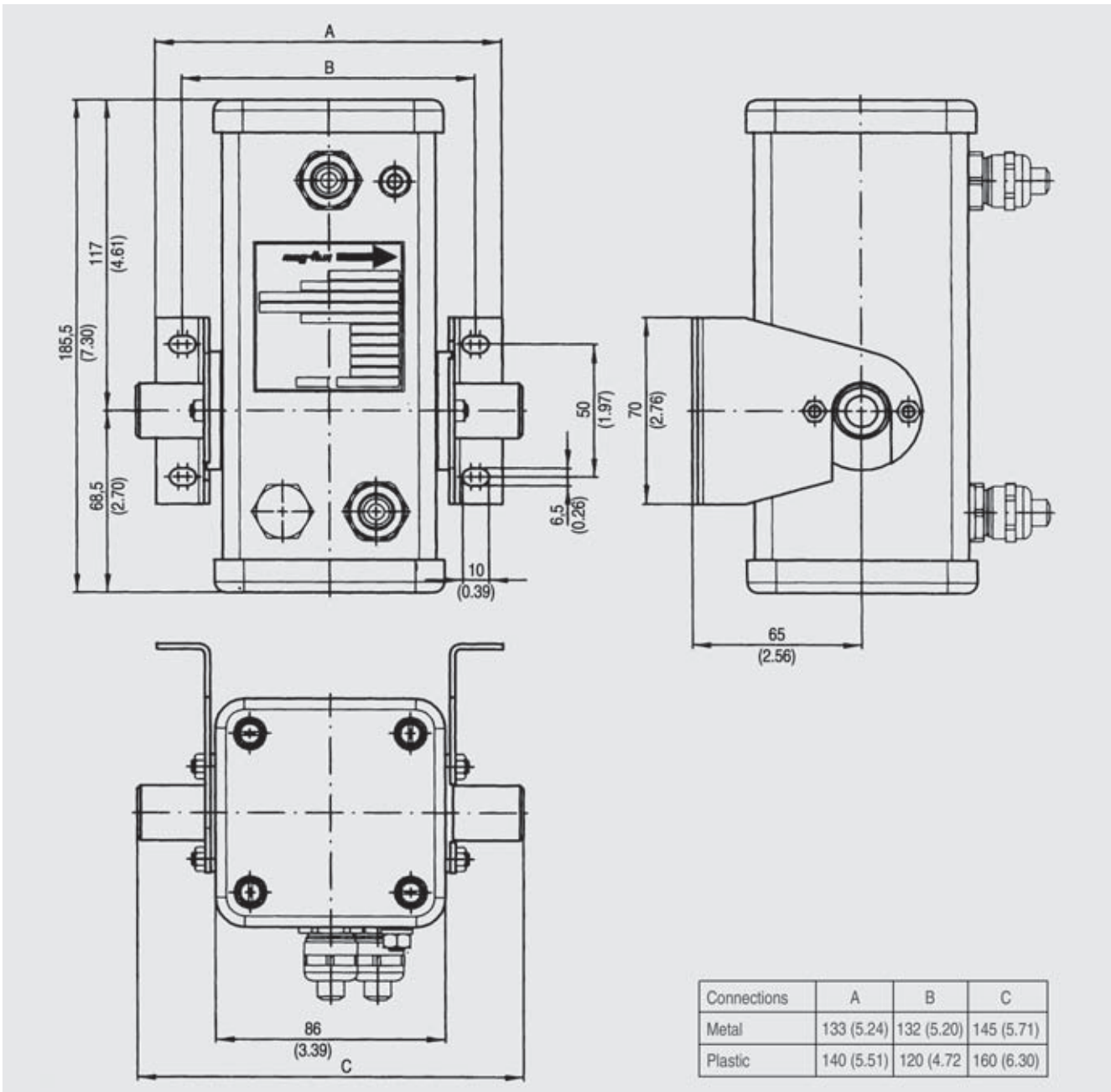
SITRANS F M flow sensor 911/F5 (without wall mount), dimensions in mm (inches)

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SITRANS F M flow sensor 911/F5 (with wall mount), dimensions in mm (inches)

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Flow sensor 911/F5

| Selection and Ordering data | Order No. | Order code | Further designs | Order Code |
|--|-----------|-------------|---|------------|
| SITRANS F M 911/F5 electromagnetic flowmeter | 7ME561 | - 0 0 - 0 0 | Please add "-Z" to Order No. and specify Order code(s). | |
| Design | | | | |
| Remote, with alternating field | 3 | | Measuring range > 10 l/h (> 0.044 USgpm) | A10 |
| | | | Measuring range < 10 l/h (< 0.044 USgpm) | A11 |
| Nominal diameter | | | With 3-point calibration certificate | B06 |
| DN 2 (0.78") | | D | With 6-point calibration certificate | B07 |
| DN 4 (0.156") | | E | Rating plate inscription in English | B11 |
| DN 8 (0.312") | | F | Acceptance test B to DIN 50049, Section 3.1 and EN 10204 | C12 |
| DN 12 (0.47") | | G | Factory certificate to EN 10204-2.2 | C14 |
| Adapters | | | Silicone-free materials | Y04 |
| G½", mat. No. 1.4571/316Ti | | A | Measuring-point number (max. 16 char.), specify in plain text. | Y15 |
| G½", Hastelloy C4 | | B | Y15:.... | |
| G½", PVDF with earthing rings made of Hastelloy C4/2.4610 | | C | Measuring-point description (max. 27 char.), specify in plain text. | Y16 |
| NPT ½", mat. No. 1.4571/316Ti | | D | Y16:.... | |
| NPT ½", Hastelloy C4/2.4610 | | E | | |
| NPT ½", PVDF with earthing rings made of Hastelloy C4/2.4610 | | F | | |
| NPT ½", mat. No. 1.4435 | | G | Stainless steel tag plate | Y17 |
| DN 15, mat. No. 1.4571/316Ti, PN 25 | | H | | |
| DN 15, Hastelloy C4/2.4610, PN 25 | | J | | |
| DN 15, PVDF with earthing rings made of Hastelloy C4/2.4610, PN 16 | | K | | |
| ½" Tri-Clamp, mat. No. 1.4571/316Ti | | L | | |
| ½" Tri-Clamp, mat. No. 1.4435 | | M | | |
| 1" Tri-Clamp, mat. No. 1.4571/316Ti | | N | | |
| DN 15 (DIN 11 851), mat. No. 1.4571/316Ti | | P | | |
| ½" ANSI RF, mat. No. 1.4571/316Ti | | Q | | |
| DN 15 JIS 10K, mat. No. 1.4571/316Ti | | R | | |
| Other nominal diameters | | Z | | K1Y |
| Sealing material | | | | |
| EPDM | | 2 | | |
| Kalrez | | 3 | | |
| Wall mount | | | | |
| Without | | 0 | | |
| With | | 1 | | |
| Cable gland | | | | |
| Pg 11 | | A | | |
| ½" NPT | | B | | |
| M16 x 1.5 | | C | | |
| Degree of protection | | | | |
| IP67/NEMA4X | | B | | |
| IP68/NEMA6, cable length 5 m (16.4 ft) | | C | | |
| IP68/NEMA6, cable length 10 m (32.8 ft) | | D | | |
| IP68/NEMA6, other cable lengths (order as accessory 7ME5930...) | | E | | |