

Temperature sensor with integrated transmitter for industrial applications, MBT 3560

Features



- Designed for use in harsh industrial environments where reliable, robust and accurate equipment is required
- Acid-resistant stainless steel enclosure (AISI 316L)
- Output signals: 4 - 20 mA or Ratiometric
- A wide selection of process and electrical connections
- Ultra compact design
- Temperature range -50 °C - +200°C

Ordering standard MBT 3560

- Electrical connection DIN 43650-A, Pg 9
- Protection tube \varnothing 8 mm
- Element Pt 1000, EN 60751, Class B
- Process connection G1/4A

| Insertion length [mm] | Electrical connection | Transmitter output | Transmitter setting [C°] | Extension length [mm] | Code no. |
|-----------------------|-----------------------|--------------------|--------------------------|-----------------------|-----------------|
| 50 | 2 wire | 4 to 20 mA | 0 to 100 | None | 084Z4030 |
| 100 | | | | None | 084Z4031 |
| 150 | | | | None | 084Z4032 |
| 200 | | | | None | 084Z4033 |
| 250 | | | | None | 084Z4034 |
| 50 | 2 wire | 4 to 20 mA | 0 to 200 | 33 | 084Z4035 |
| 100 | | | | 33 | 084Z4036 |
| 150 | | | | 33 | 084Z4037 |
| 200 | | | | 33 | 084Z4038 |
| 250 | | | | 33 | 084Z4039 |

Pocket for MBT 3560 standard programme

| MBT 3560 Insertion length [mm] | Pocket insertion length [mm] | Process connection | Protection tube [mm] | Code no. |
|--------------------------------|------------------------------|--------------------|----------------------|-----------------|
| 50 | 37.5 | G1/2A | \varnothing 11 | 084Z7258 |
| 100 | 87.5 | | | 084Z7259 |
| 150 | 137.5 | | | 084Z7260 |
| 200 | 187.5 | | | 084Z7261 |
| 250 | 237.5 | | | 084Z7262 |

Technical data
Main specifications

| | |
|------------------------|---|
| Pressure connections | See page 3 |
| Measuring ranges | Any combinations between -50°C and +200°C |
| Minimum span | 25°C |
| Output signals | 4-20 mA - Ratiometric |
| Electrical connections | See page 4 |

Performance

| | | |
|---------------------------|--|-----------------------------|
| Accuracy | $< \pm 0.5\% \text{ FS (typ.)}$ $< \pm 1\% \text{ FS (max.)}$ | |
| | Water 0.2 m/s | |
| Response times | $t_{0.5} = 10 \text{ sec}$ | $t_{0.9} = 30 \text{ sec}$ |
| | Air 1 m/s | |
| | $t_{0.5} = 95 \text{ sec}$ | $t_{0.9} = 310 \text{ sec}$ |
| Max. load protection tube | 100 bar | |

Electrical specifications

| | Nom. Output signal (short-circuit protected) | |
|--|--|---|
| | 4 to 20 mA | ratiometric |
| Supply voltage[U _s] polarity protected | 10 to 30 V d.c. | 4.75 to 8 V d.c. 5 V d.c. (Nom.) |
| Supply - current consumption | < 4 mA | < 4 mA at 5 V d.c. |
| Supply voltage dependency | < ±0.05% FS/ 10 V | – |
| Current limitation | 30 mA | – |
| Output impedance | – | < 225 ohm |
| Load [R _L] | $R_L(U_s - 10)/(0.02A) \text{ ohm}$ | $R_L < 5 \text{ kohm at } 5 \text{ V d.c.}$ |

Environmental conditions

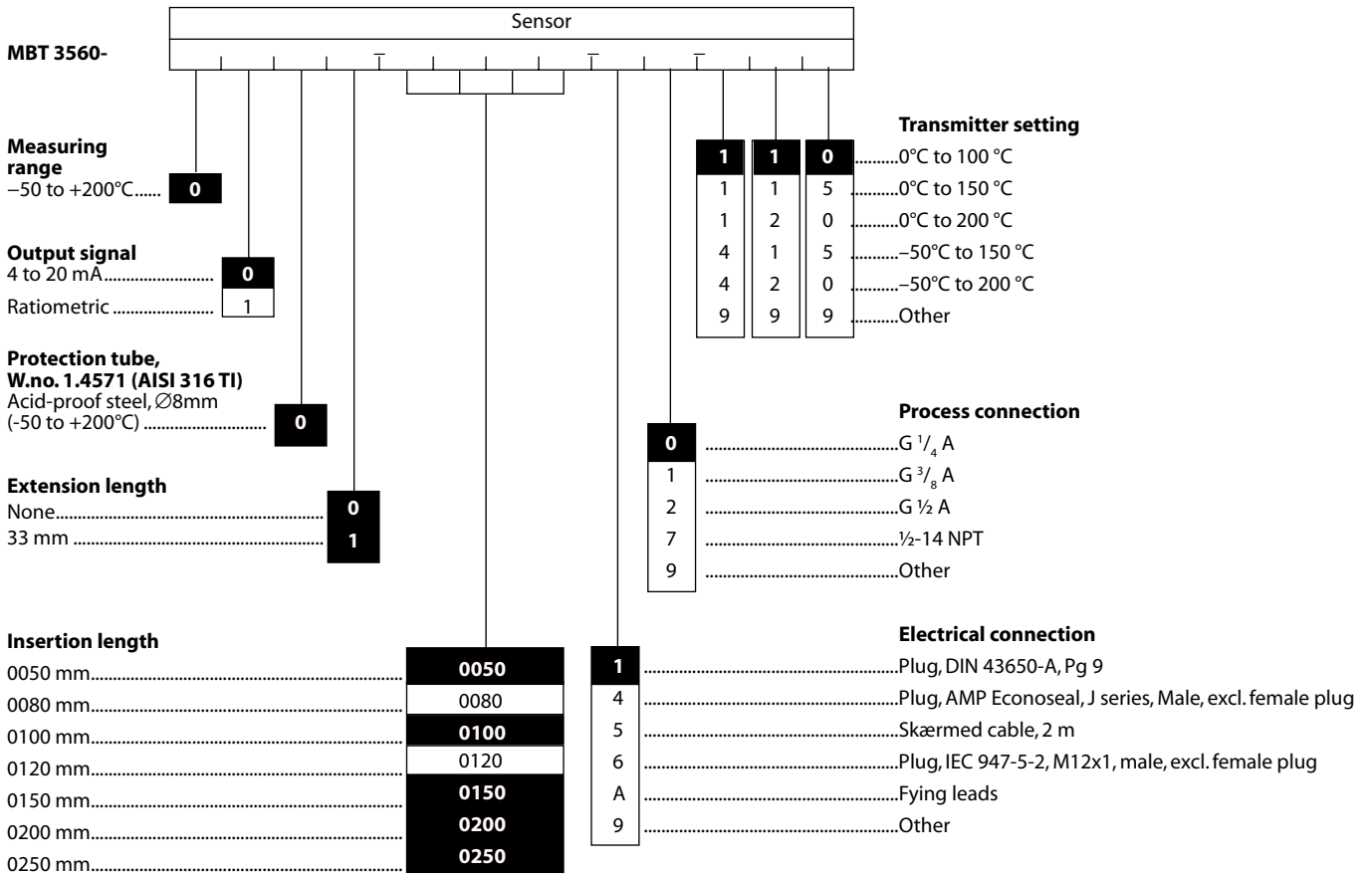
| | | |
|---|---|---------------------------------|
| Media temperature (max. 120°C without extension length) | -50°C to + 200°C | |
| Temperature on electronics ¹⁾ | -40°C to +85°C | |
| Transport temperature range | -50°C to 85°C | |
| EMC - Emmision | EN 61000-6-3 | |
| EMC - Immunity | EN 61000-6-2 | |
| Vibration stability | Sinusoidal 15.9 mm-pp, 5 Hz-25 Hz | |
| | 4 g, 25 Hz - 2 kHz | IEC 60068-2-6 |
| | Random 7.5 g _{rms} , 5Hz - 1 kHz | IEC 600868-2-34, IEC 60068-2-36 |
| Shock resistance | Shock 500 g/ 1 ms | IEC 60068-2-27 |
| | Free fall | IEC 60068-2-32 |
| Enclosure (depending on electrical connections) | See page 4 | |

Mechanical characteristics

| | |
|------------------------------|----------------------------|
| Materials: | |
| Wetted parts | W.no. 1.4571 (AISI 316 Ti) |
| Enclosure | W.no. 1.4404 (AISI 316 L) |
| Measuring insert | fixed |
| Weight (Depending on design) | 0.1 to 0.15 kg |

¹⁾ Temperature of the electronics depends on the media temperature, extension length, ambient temperature and air velocity.

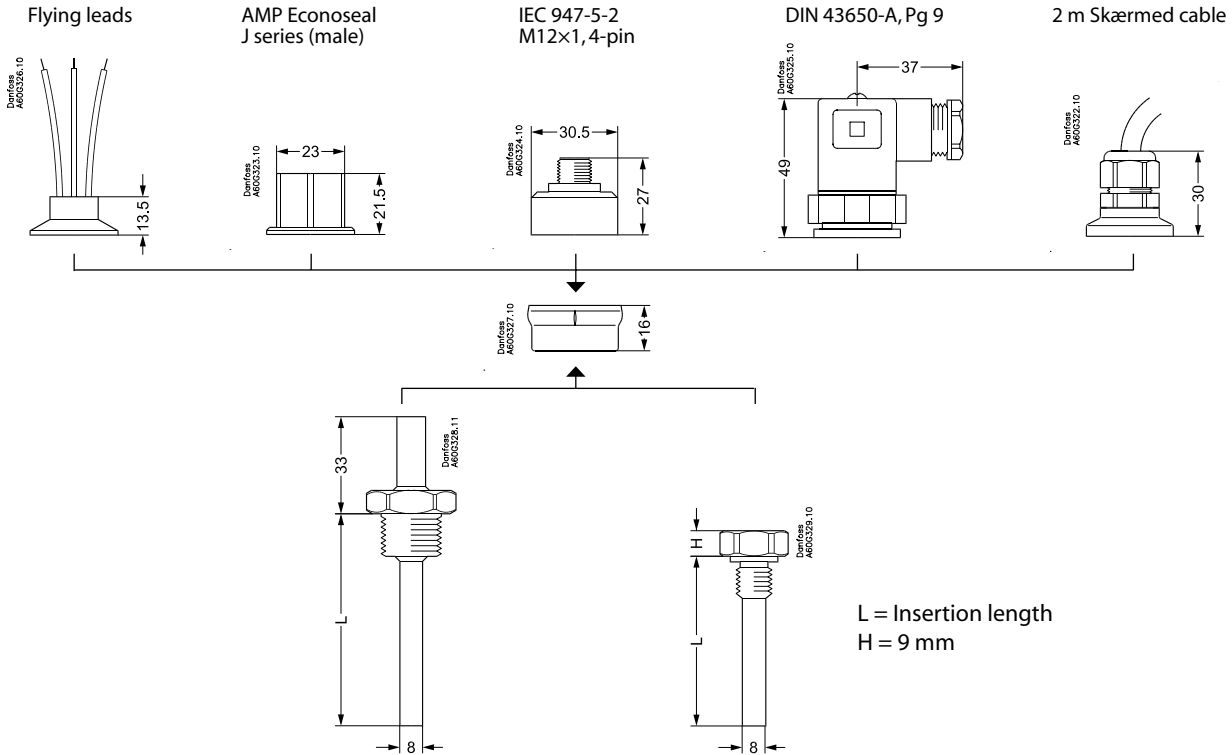
**Ordering,
Standard versions**



■ = Standard programme

Non-standard build up combinations may be selected. However, minimum order quantities may apply, please contact your local Danfoss office for more information

Dimensions



Electrical connections

| DIN 43650-A gold plated | AMP Econoseal I J series (male) | IEC 947-5-2 M12 x 1 gold plated | Flying leads | 2 m screened cable |
|--|---|--|---|--|
| | | | | |
| Enclosure | IP 65 | IP 67 | IP 67 | IP 67 |
| Materials | Glass filled polyamid, PA 6.6 | Glass filled polyamid, PA 6.6 | Glass filled polyamid, PA 6.6 | PUR |
| Electrical connection, 4-20 mA output (2 wire) | | | | |
| Pin 1: +supply Pin 2: ÷supply Pin 3: Not used Earth: Not connected to MBT housing | Pin 1: +supply Pin 2: ÷supply Pin 3: Not used | Pin 1: +supply Pin 2: Not used Pin 3: Not used Pin 4: ÷supply | Red wire: +supply Black wire: ÷supply | Red wire: +supply Black wire: ÷supply White wire: Not used Brown wire: Not used Green wire: Not used Screen: Not connected to MBT housing |
| Electrical connection, Ratio metric (3-wire) | | | | |
| Pin 1: +supply Pin 2: ÷supply Pin 3: Output Earth: Not connected to MBT housing | Pin 1: +supply Pin 2: ÷supply Pin 3: Output | Pin 1: +supply Pin 2: not used Pin 3: Output Pin 4: ÷supply | Red wire: +supply Black wire: ÷supply Blue wire: Output | Red wire: +supply Black wire: ÷supply White wire: Output Brown wire: Not used Green wire: Not used Screen: Not connected to MBT housing |

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