

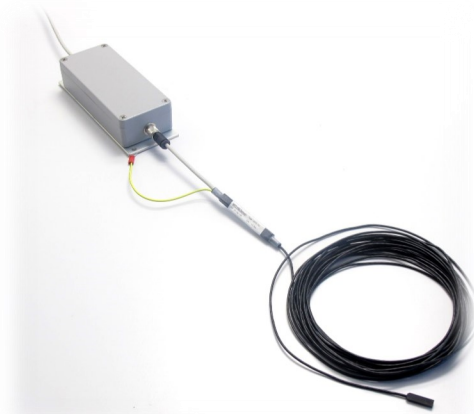


Single Axis Magnetic Field Transducer

MFT-100

FEATURES

- Single axis magnetic field measurement system
- Measuring range up to ± 2 Tesla
- Easy to install on stator wall without removing the rotor poles
- Immune to deposits and vibrations
- Small size and flat design for electrical machines air gap installation
- Interchangeability of the sensor head
- Single $+24V_{DC}$ power supply



Monitoring solution



Magnetic flux monitoring

Typical applications



Hydrogenerators



Windturbines



Gearless millsdrives



Turbogenerators

DESCRIPTION

The MFT-100 is a single-axis high accuracy, linearity and stability magnetic field to analogue current transducer. It is particularly appropriate for mapping the magnetic field in the range to ± 2 Tesla. The sensor's head contains a high quality Hall element. The very thin sensor's head design allows mounting in the air gap of generators and electrical motors.

A novel sensor chip in the probe entirely eliminates influences from DC magnetic field components other than the one measured (Y-axis), so that even for strong no uniform fields no planar Hall effect leads to errors in the output voltage.

The transducer consists of a sensor's head with integral flexible cable of 10 meters connected to a conditioning unit.

GLOBAL SPECIFICATIONS

OPERATION

| | |
|---|--|
| Linear magnetic field range | ±2T (full scale) |
| Current output signal | 4 to 20mA \pm -2T...+2T |
| Output bias current | 12mA (±5μA) |
| Sensitivity to magnetic field | 4mA/T |
| Tolerance of sensitivity (B= 1Td.c.) | < 1% |
| Linearity error of output | < 0.1% |
| Long term instability of sensitivity | < 1% over 10 years |
| Probe temp. coefficient of sensitivity | ≤ -0.06%/°C |
| Conditioning unit temp. coefficient of sensitivity (T=25°C to 80°C) | ≤ ±100ppm/°C |
| Temp. coefficient of offset | <i>Not available yet</i> |
| Output noise and ripple (RMS) | 15mT |
| Load resistor | Max 500Ω |
| Frequency range of the magnetic field | DC to 1kHz @ -3dB |
| Power supply | |
| voltage | +24V nominal, 18...36V |
| current consumption | 60mA typ. (current output not connected) |

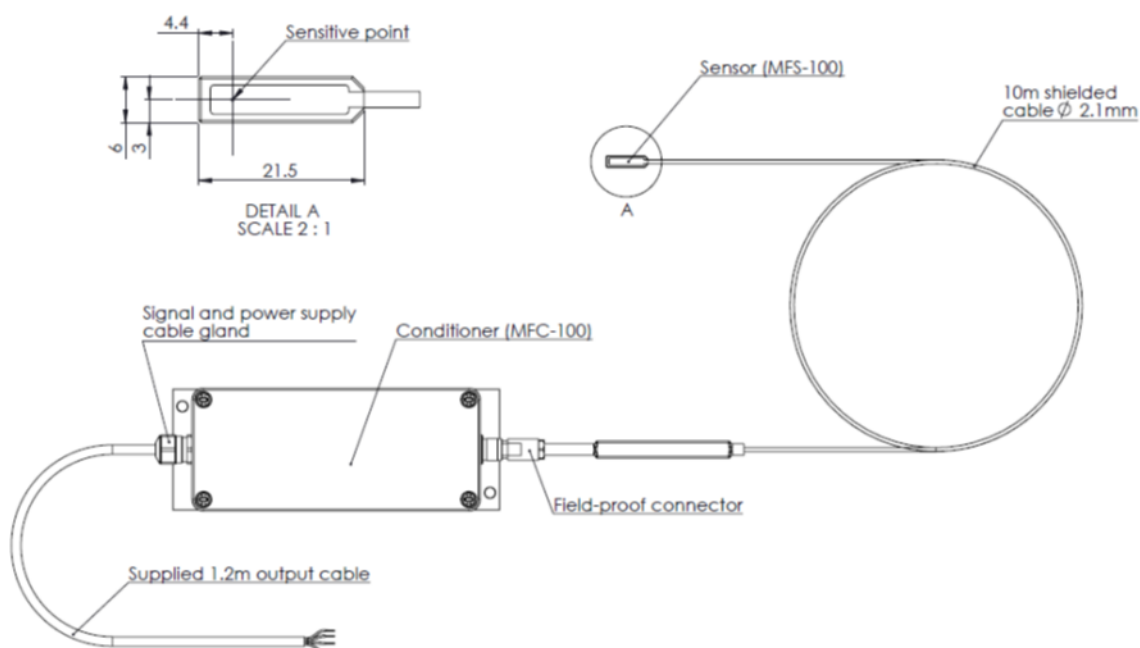
ENVIRONMENTAL

| | |
|---------------------------------|----------------------------|
| Temperature range | |
| MFS-100 probe - head only | |
| Operation | -25°C to +125°C |
| Storage | -25°C to +125°C |
| MFS-100 probe - cable | |
| Operation | -25°C to +155°C |
| Storage | -25°C to +155°C |
| MFC-100 Conditioning unit | |
| Operation | -25°C to +80°C |
| Storage | -25°C to +100°C |
| RF conducted disturbances | IEC 801-6 |
| EMC | acc. To EN 61326-2-3:2006 |
| Electrical fast transient burst | IEC 1000-4 4, EN 61000-4-4 |
| Surge | EC 1000-4-5 |

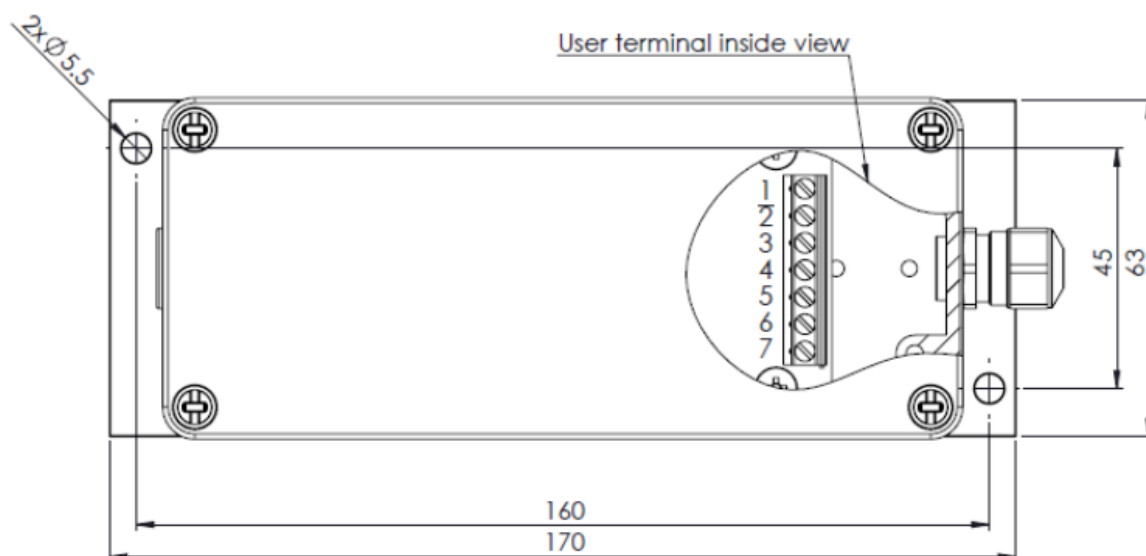
PHYSICAL

| | |
|-------------------------------------|---|
| Sensitive surface [mm] | ø 0.3 |
| Angular accuracy of the axes | ±0.5° to the reference surface |
| Probe only outside dimensions [mm] | 6 x 3 x 21.5 |
| Probe-to-conditioning unit cable | Connected though a 4-pole connector; 10m length |
| Conditioning electronics | High mechanical strength, electrically shielded |
| aluminium case dimensions [mm] | 63 x 149 x 35 WxLxH |
| with mounting plate dimensions [mm] | 63 x 170 x 38 WxLxH |

MECHANICAL DRAWING



ELECTRICAL WIRING



| Terminal number | Wire color | Description |
|-----------------|------------|--|
| 1 | Brown | +24V power supply |
| 2 | White | 0V power supply |
| 3 | - | 0V (internally connected) |
| 4 | - | n.c. |
| 5 | - | n.c. |
| 6 | Green | Iout+, Isolated 4-20mA output + |
| 7 | Yellow | Iout-, Isolated 4-20mA output - |
| - | Clear | Output cable shield (not internally connected) |

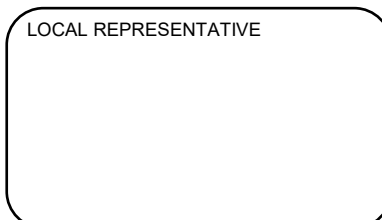
ORDERING INFORMATION

| | |
|---------------|---|
| Part type | MFT-100 |
| Ordering code | 03.100.000 |
| Description | Magnetic Field Transmitter, including sensor MFS-100 and conditioner MFC-100 |
| Part type | MFS-100 |
| Ordering code | 03.100.100 |
| Description | Magnetic Field Sensor with 10m shielded cable. Factory calibrated. |
| Part type | MFC-100 |
| Ordering code | 03.100.200 |
| Description | Magnetic Field Conditioner with 4-20mA output corresponding to -2 Tesla to +2 Tesla |
| Part type | Installation protective tube |
| Ordering code | 03.100.900 |
| Description | Protective tube for MFS-100 installation ID=5.6mm, OD=10mm, material PA-6, Temperature range -40°C to +120°C. Made of two parts for easy in-line assembly. Total length 10m, shall be adjusted by the user. |
| Part type | Protective shoe for MFS-100 |
| Ordering code | 03.100.901 |
| Description | Isolating and protective shoe for MFS-100 sensor, temperature range -40°C to +120°C, external dimensions 110x6x3mm. Factory installed and sealed to the MFS-100 when ordered. See user manual for more information. |
| Part type | AGS Installation kit |
| Ordering code | 44.906.001 |
| Description | Installation kit made of one two-components LOCTITE 330 adhesive and one adhesive sealant DOW CORNING 3145 RTV clear. |

MC-monitoring Quality certifications



LOCAL REPRESENTATIVE



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