



MFMTM-100

Magnetic Flux Measuring Chain

Used in hydroelectric generators and mining applications, the MFM-100 magnetic flux measuring system is designed to monitor magnetic field density in order to detect magnetic imbalances that contribute to machine vibration, overheating, and excessive stress on rotor and stator components.

A typical measuring chain consists of a MFPTM-100 sensor, an extension cable and a MFCTM-100 signal conditioner. The chain is then connected to an acquisition unit.

General Specifications

MFP-100 Sensor

Operation

- Output: Magnetic Flux to Voltage
- Interchangeability: < 1% F.S.R.
- Short Circuit Protection: Built-in

Connection

- Integral Cable
 - Type: Unshielded Twisted Pair
 - Connector: Female Bayonet

Environment

- Temperature Range
 - Operating: 0 to 125°C [32 to 257°F]

Physical Characteristics

- Sensor Material: Glass-Reinforced Epoxy
- Integral Cable Length: 50 cm [19.7 in]
- Outer Jacket Material: Irradiated Polyolefin
- Diameter: 3 mm [118 mils]

Extension Cable

Connection

- Type: Shielded Twinaxial
- Connector
 - Sensor Side: Male Bayonet
 - Conditioner Side: Free
 - Conductors with Sleeve

Physical Characteristics

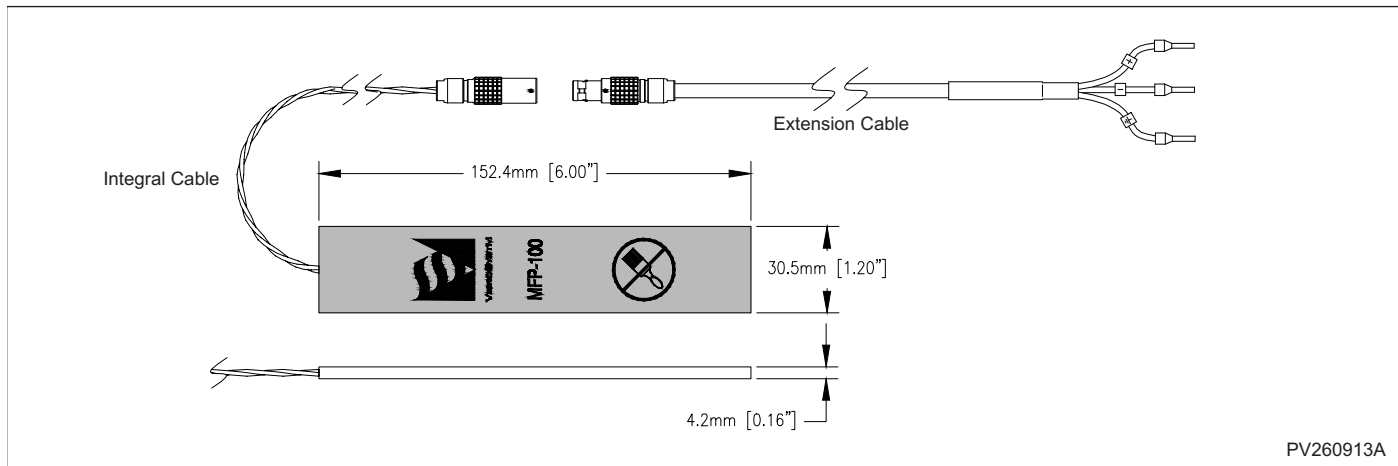
- Available Lengths: 10/20 m [33/66 ft]
- Outer Jacket Material: FEP
- Diameter: 5 mm [197 mils]

Environment

- Temperature Range
 - Operating: 0 to 125°C [32 to 257°F]

MFP-100 Sensor Dimensions

F.S.R.: Calculated on a full scale range



PV260913A



MFC-100 Signal Conditioner

Operation

- Input MFP-100 Sensor
- Flux Density Output Range Up to ± 2 Tesla
- Operating Frequency 2 to 60 Hz (no attenuation)
- Outputs
 - Raw Flux Density ± 5 V
 - Maximum Flux Density 4 to 20 mA (Per Pole)
- Sensitivity
 - Raw Flux Density 2.5 V/Tesla
 - Maximum Flux Density 8 mA/Tesla
- Accuracy $\pm 1\%$ F.S.R.
- Linearity $\pm 0.5\%$ F.S.R.
- Repeatability $\pm 0.05\%$ F.S.R.
- Minimum Detection Threshold 0.03 Tesla
- Temperature Drift < 500 ppm/ $^{\circ}\text{C}$

Power Requirements

- Voltage 24 Vdc $\pm 10\%$
- Consumption 2.4 W

Connection

- Type Screw Terminals
- Maximum Cable Length
 - For Voltage Output 100 m [328 ft]
 - For Current Output 300 m [984 ft]

Environment

- Temperature Range
 - Operating 0 to 55 $^{\circ}\text{C}$ [32 to 131 $^{\circ}\text{F}$]
 - Storage (Measuring Chain) -25 to 70 $^{\circ}\text{C}$ [-13 to 158 $^{\circ}\text{F}$]

Physical Characteristics

- Module Body ABS
- Mounting Type 35 mm DIN Rail

MFC-100 Signal Conditioner Dimensions

F.S.R.: Calculated on a full scale range

