Single-axis inclinometer −3…93°, RS485 Modbus output

IMA-1-093-MB · MEMS capacitive · IP67 · 9…36 V DC



FEATURES

- MEMS capacitive inclinometer, single axis, range −3…93°
- Output: RS485 Modbus RTU · resolution 0.1°
- Accuracy ±0.2° at 25 °C · IP67
- Supply 9…36 V DC · operating temperature −40…85 °C

WIRING

Red	Supply + (9…36 V DC)
Black	GND
White	RS485 D+
Green	RS485 D−

PERFORMANCE

Measuring range	−3…93°
Number of axes	1
Resolution	0.1°
Accuracy at 25 °C	±0.2°
Temperature drift	±0.5° (−40…85 °C)
Response time	0.05 s
Sensor technology	MEMS capacitive

INTERFACE

Output signal	RS485 Modbus RTU
Interface details	Modbus RTU, RS485, 9600 bps 8E1 (default), 4800–115200 bps settable
Zero setting	Modbus command (relative zero, register 0x0010)

ELECTRICAL

Supply voltage DC	9…36 V
Protection functions	Overcurrent, overheat and overvoltage protection
Connection	1 m cable, Ø5.5 mm
Cable	Ø5.5 mm, 4 cores Ø1.3 mm

MECHANICAL & AMBIENT

Housing material	Electroplated metal
Dimensions (L × W × H)	61 × 35 × 21 mm
Weight	≤ 200 g
Mounting and zero setting	Six mounting orientations, 3 × M4 screws, zero point settable on site
Mounting holes	3 × Ø4.2 mm, spacing 52 × 17 mm
Protection class	IP67
Operating temperature	−40…85 °C
Vibration resistance	10 grms, 10…1000 Hz
Shock resistance	100 g / 11 ms, 3 axes, half-sine

RELIABILITY & COMPLIANCE

MTBF	50 000 h

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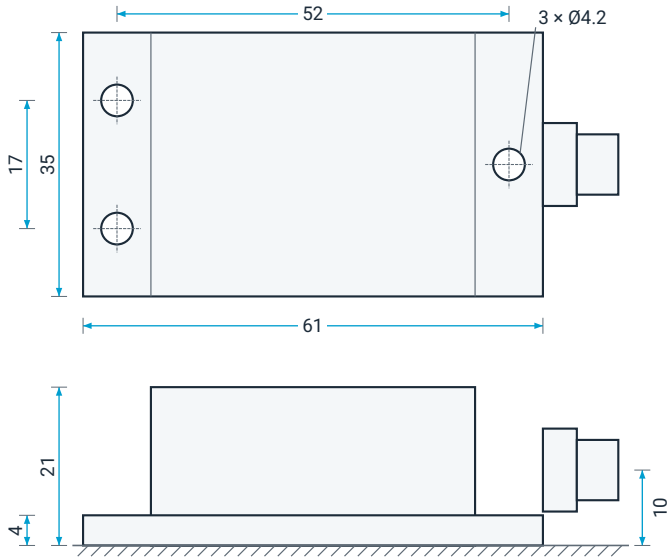
RELIABILITY & COMPLIANCE

Manufacturer quality system	IATF 16949:2016

ORDERING INFORMATION

Article	IMA-1-093-MB
Series	IMA-1-MB – Single-axis inclinometer, RS485 Modbus output

DIMENSIONS



Dimensions in mm · 3 mounting holes Ø4.2 mm

RANGE VARIANTS – SAME HOUSING AND OUTPUT

Article	Measuring range
IMA-1-010-MB	±10°
IMA-1-015-MB	±15°
IMA-1-030-MB	±30°
IMA-1-045-MB	±45°
IMA-1-060-MB	±60°
IMA-1-090-MB	±90°
IMA-1-093-MB	**–3…93°**
IMA-1-180-MB	±180°

Also available with 0–5 V and 4–20 mA output.

Need another range or a special version? Talk to an engineer: info@mekelson.com

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