Single-axis inclinometer −3…93°, 0–5 V output

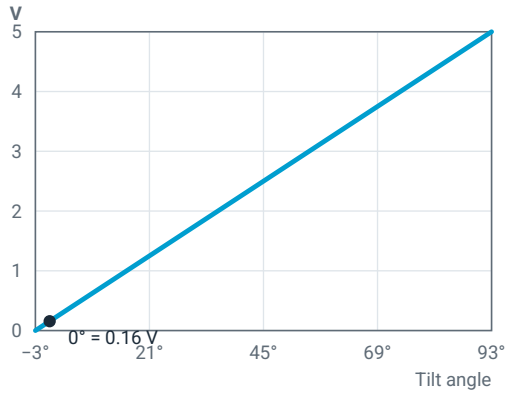
IMA-1-093-V5 · MEMS capacitive · IP67 · 9…36 V DC



FEATURES

- MEMS capacitive inclinometer, single axis, range −3…93°
- Output: 0–5 V analog · resolution 0.1°
- Accuracy ±0.2° at 25 °C · IP67
- Supply 9…36 V DC · operating temperature −40…85 °C

OUTPUT CHARACTERISTIC



Angle = −3° + (U − 0 V) / 0.0521 V/°
0 V = −3° · 5 V = 93°

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	0–5 V analog
Sensitivity	0.0521 V/°
Zero point	0.16 V at 0°
Zero setting	Gray wire to GND for > 3 s; the LED flashes and the current position is stored as 0°

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, 5 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

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RELIABILITY & COMPLIANCE

MTBF	50 000 h
Service life	Up to 10 years
Manufacturer quality system	IATF 16949:2016

ORDERING INFORMATION

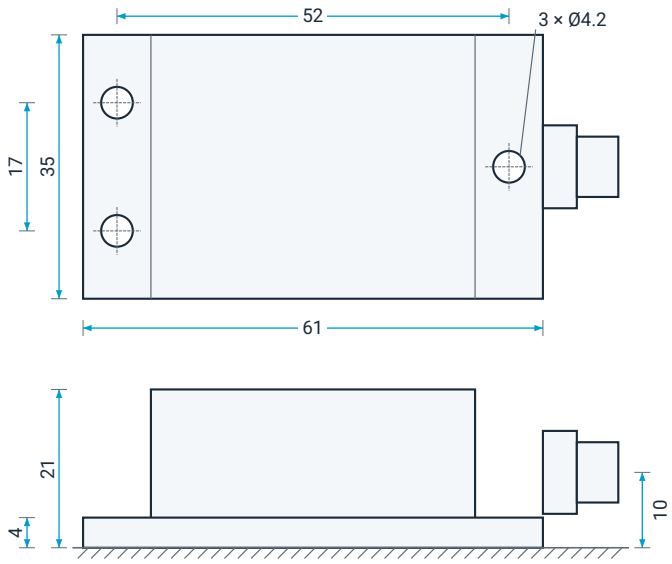
Article	IMA-1-093-V5
Series	IMA-1-V5 – Single-axis inclinometer, 0–5 V output

WIRING

Red	Supply + (9…36 V DC)
Black	GND / signal –
White	X output (0–5 V)
Green	Y output (0–5 V, dual-axis)
Gray	Zero set (leave open in operation)

Signal – and supply – share the black wire: connect the input – of your PLC to the sensor GND. Never connect the gray wire to supply +.

DIMENSIONS



Dimensions in mm · 3 mounting holes Ø4.2 mm

RANGE VARIANTS – SAME HOUSING AND OUTPUT

Article	Measuring range	Sensitivity
IMA-1-010-V5	±10°	0.250 V/°
IMA-1-015-V5	±15°	0.167 V/°
IMA-1-030-V5	±30°	0.0833 V/°
IMA-1-045-V5	±45°	0.0556 V/°
IMA-1-060-V5	±60°	0.0417 V/°
IMA-1-090-V5	±90°	0.0278 V/°
IMA-1-093-V5	**–3…93°**	**0.0521 V/°**
IMA-1-180-V5	±180°	0.0139 V/°
IMA-1-360-V5	0…360°	0.0139 V/°

Also available with 4–20 mA and RS485 Modbus output.

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

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