



DML Digital MEMS Inclinometer

Features

- Single-Axis and Dual-Axis Available
- Resolution: 0.05°
- Zero Temperature Coefficient: $\pm 0.02^\circ / ^\circ\text{C}$
- -40° to $+85^\circ\text{C}$ Operation and Storage
- Digital RS232, RS485 or UART TTL Outputs
- 1m cable whip included



Application

- Solar Tracking & Panel Positioning
- Vehicle Wheel Alignment
- Industrial Automation & Control
- Radar/Antenna Mast Alignment
- Platform Leveling
- Navigation Pitch/Roll Measurement

Introduction

The DML model is a low cost digital MEMS inclinometer for industrial applications. Units are available with RS232, RS485 and UART TTL output options. All DML series inclinometers are rated IP67 for waterproofing up to 1m. Custom ranges and output types are also available on request.

Performance specifications

Static/dynamic

* Angular Range, °	± 10	± 30	± 60	± 90
Resolution, °	0.05	0.05	0.05	0.01
Hysteresis, °	0.1	0.1	0.2	0.2
Zero Tolerance (°)	0.56	0.56	0.56	0.56
Zero Temperature Coefficient, °/°C	± 0.02	± 0.02	± 0.02	± 0.02
Scale Factor Tolerance (%)	0.7	1.4	2.8	3
Scale Factor Temperature Coefficient, ppm/°C	≤ 350	≤ 350	≤ 350	≤ 350
Warm Up, s	0.5	0.5	0.5	0.5
Time Constant, s	0.05	0.05	0.05	0.05
Transverse Axis Misalignment (° max)	± 0.56	± 0.56	± 0.56	± 0.56

Electrical and environmental

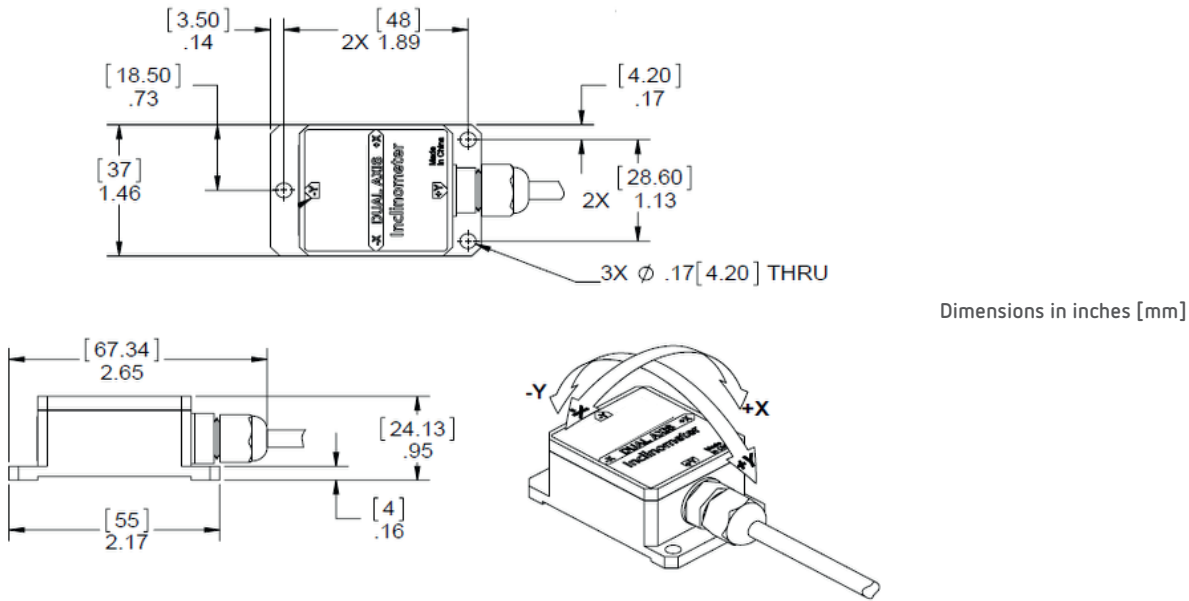
Output rate	5Hz, 15Hz, 35Hz, 50Hz
Output Type	RS232/RS485/TTL
Electromagnetic Compatibility	EN61000 and GBT17626
Impact Resistance	100g@11ms, 3 Times / Axis (1/2 sinusoid)
Vibration Resistance	10grms, 10-1000 Hz
Temperature Rating, Operation	-40 to $+85^\circ\text{C}$
Temperature Rating, Storage	-55 to $+100^\circ\text{C}$
Seal	IP67
Cables	1m Cable (standard)
Weight	90g (without cable)
Power Requirements	9-36 VDC @ 60mA

Notes

* - Custom ranges available, please see model number structure below.

Specifications subject to change without notice on account of continued product development

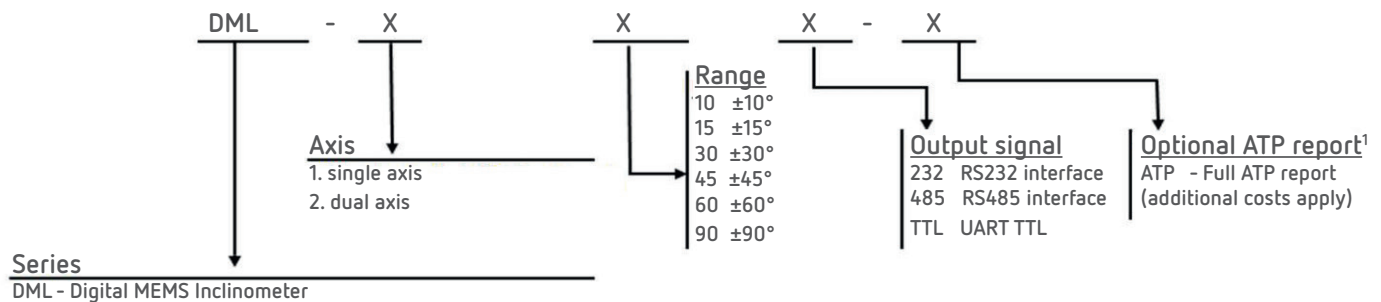
Outline Diagram



Pin Out

Wire	Function
Red	+VDC 9V~36V
Yellow	RS232 (Rx), RS485 (D+)
Green	RS232 (Tx), RS485 (D-)
Black	Ground

Ordering information



Example:
 DML - 1 - 15 - 485 - ATP
 AMH Single axis, +/- 15 degrees, RS485 interface, Full ATP report

Note
 1. "ATP" must be added to the end of the part number for a full ATP report. An additional cost will apply.
 ATP report includes: Scale factor, Axis misalignment, Bias, Linearity, Input current

■ Part numbers

	Single axis		Dual axis	
	Model #	Part #	Model #	Part #
RS232 Interface	DML-1-10-232	02550323-0111	DML-2-10-232	02550323-0211
	DML-1-15-232	02550323-0121	DML-2-15-232	02550323-0221
	DML-1-30-232	02550323-0131	DML-2-30-232	02550323-0231
	DML-1-45-232	02550323-0141	DML-2-45-232	02550323-0241
	DML-1-60-232	02550323-0151	DML-2-60-232	02550323-0251
	DML-1-90-232	02550323-0161	DML-2-90-232	02550323-0261
RS485 Interface	DML-1-10-485	02550323-0113	DML-2-10-485	02550323-0213
	DML-1-15-485	02550323-0123	DML-2-15-485	02550323-0223
	DML-1-30-485	02550323-0133	DML-2-30-485	02550323-0233
	DML-1-45-485	02550323-0143	DML-2-45-485	02550323-0243
	DML-1-60-485	02550323-0153	DML-2-60-485	02550323-0253
	DML-1-90-485	02550323-0163	DML-2-90-485	02550323-0263
UARTTTL Interface	DML-1-10-TTL	02550323-0114	DML-2-10-TTL	02550323-0214
	DML-1-15-TTL	02550323-0124	DML-2-15-TTL	02550323-0224
	DML-1-30-TTL	02550323-0134	DML-2-30-TTL	02550323-0234
	DML-1-45-TTL	02550323-0144	DML-2-45-TTL	02550323-0244
	DML-1-60-TTL	02550323-0154	DML-2-60-TTL	02550323-0254
	DML-1-90-TTL	02550323-0164	DML-2-90-TTL	02550323-0264

Note

If ATP report is required, please add "-ATP" to model & part numbers. Additional charges will apply