



**JDHI-100/200**  
Ruby MEMS Digital Inclinometer

The NEW Ruby MEMS digital inclinometers represent the next generation of high-performance inertial sensors from Jewell Instruments. With an improved Price-Performance, the new Ruby inertial sensors offer outstanding resolution, frequency response, and bandwidth -- all in a IP67 package that utilizes the same mounting configuration of current MEMS sensors.

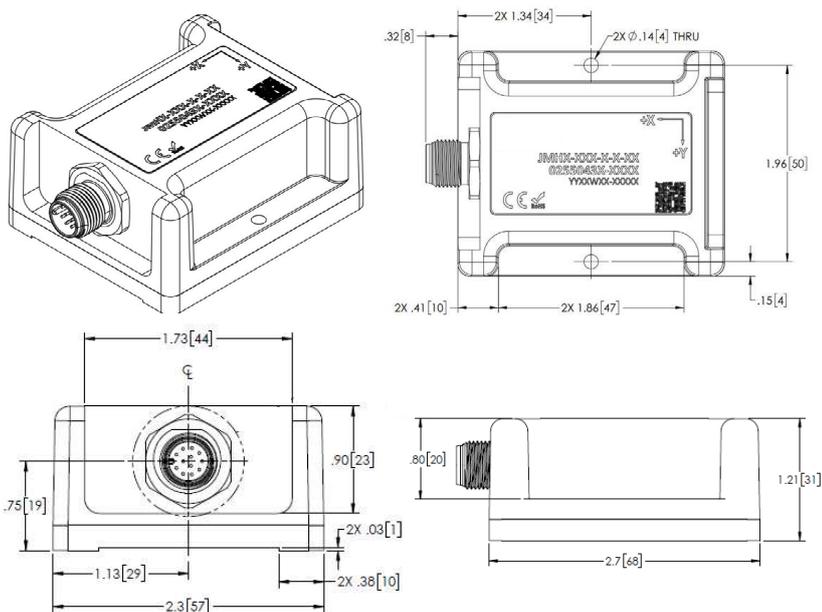


**FEATURES**

- Ranges:  $\pm 1^\circ$  to  $\pm 90^\circ$
- Temperature Compensated
- Digital Interface Options: ASCII (RS-485/RS-232) and Modbus (RS-485)
- High-Precision with  $0.0001^\circ$  resolution
- Operating Temp Range:  $-40^\circ$  to  $+85^\circ\text{C}$
- Seal: IP67
- M12 and DB9 termination options
- CE and RoHS compliant

**APPLICATION**

- Radar & Antenna Position Control
- Mining
- Bridge and Structural Monitoring
- Platform Leveling
- Tunneling Biaxial Machine Tool Levelling
- Construction
- Offshore Platform Stability
- Production/Manufacturing Process
- Geotechnical Monitoring
- Industrial Measurement & Control



Dimensions: in [mm]



**SPECIFICATIONS / STATIC/DYNAMIC**

INPUT RANGE (°)	±1.0	±3.0	±14.5	±30	±60	±90
DIGITAL RESOLUTION (°, max)	0.0001					
REPEATABILITY (°)	0.01					
TRANSVERSE AXIS MISALIGNMENT (°, max)	0.25					
BANDWIDTH (HZ NOM) (-3 dB)	(Sample Rate) / 4					
ACCURACY - TEMPERATURE SENSOR (°C, max)	±2					

**ELECTRICAL/PROTOCOL**

NUMBER OF AXES	1, 2
INPUT VOLTAGE RANGE (VDC)	5 min, 9 to 36 typ, 38 max, reverse wiring protected
POWER - RS485 TERMINATION ENABLED (mW, max)	800.0
POWER - RS485 TERMINATION DISABLED (mW, max)	600.0
GALVANIC ISOLATION - POWER INPUTS (rms)	2000
GALVANIC ISOLATION - RS-485/RS-232 (rms)	5000
PROTOCOL	ASCII (RS-485); ASCII (RS-232); MODBUS-RTU
BAUD3 (bps)	2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800, 500000 (max)
COMMUNICATION SETTINGS2	8 bits, 1 stop bit, even   odd
DATA SAMPLE RATE3 (Hz)	3.9, 7.8, 15.6, 31.2, 62.5, 125
NODE ID3	0+last 2 digits of serial number
FILTERING	User selectable
BUS TERMINATION- INTERNAL2 (120Ω)	On / Off

**ENVIRONMENTAL**

OPERATING TEMP. RANGE	-40° to +85°C
STORAGE TEMP. RANGE	-55° to +105°C
SHOCK	100 g, 0.011 sec, 1/2 sine

**NOTES:**

1. Observed using noise reduction methods.
2. User selectable; default underlined
3. NIST Certification Range up to ±45°, Calibrated

Temperature Range of -30 °C to +60 °C.

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

**ENCLOSURE**

WEIGHT (g)	140
PROTECTION CLASS (per IEC 529)	IP67
CONNECTOR	DB9, M12

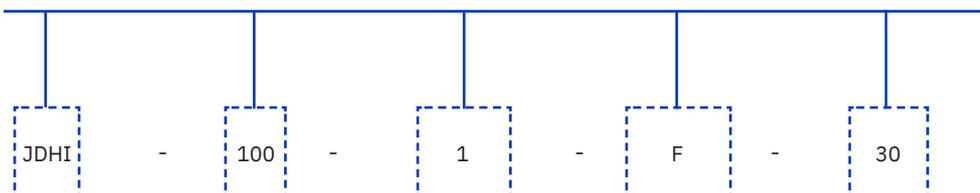


## ORDERING INFORMATION / HOW TO ORDER

Model Numbers are comprised of the series, the axes, the input range, interface, and termination options.

**EXAMPLE 1:** JDHI Series, Single Axis, DB9 termination, ASCII RS-485, ±30° Input

SERIES - AXIS - TERMINATION - INTERFACE - INPUT RANGE



### INTERFACE OPTIONS

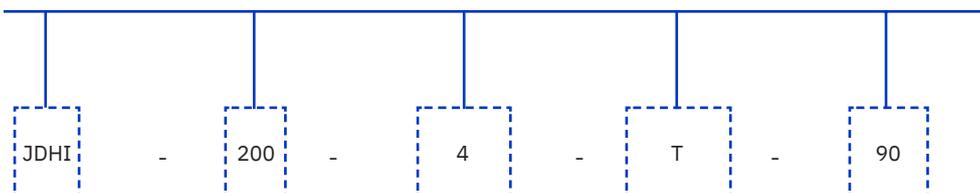
F	RS485	ASCII (RS-485)
T	RS232	ASCII (RS-232)
M	MB485	MBRTU (RS-485)

### TERMINATION OPTIONS

1	DB9	DB9
4	M12	8-pin M12, Male

**EXAMPLE 2:** JDHI Series, Dual Axis, M12 Male termination, ASCII RS-232 Interface, ±90°

SERIES - AXIS - TERMINATION - INTERFACE - INPUT RANGE



## ACCESSORIES / CABLE

CONNECTOR	MODEL #	LENGTH (m)
M12	F848873-03M	3
M12	F848873-10M	10
DB9	F848874-03M	3
DB9	F848874-10M	10

### DB9 PIN OUT

	RS-485	RS-232
1	DATA-	N/C
2	DATA+	RXD
3	N/C	TXD
4	N/C	N/C
5	GND	GND
6	N/C	N/C
7	N/C	N/C
8	PWR-	PWR-
9	PWR+	PWR+

### M12 SENSOR PIN OUT

	RS-485	RS-232
1	N/C	TXD
2	PWR+	PWR+
3	PWR-	PWR-
4	DATA-	N/C
5	GND	GND
6	DATA+	N/C
7	N/C	RXD
8	GND	GND