

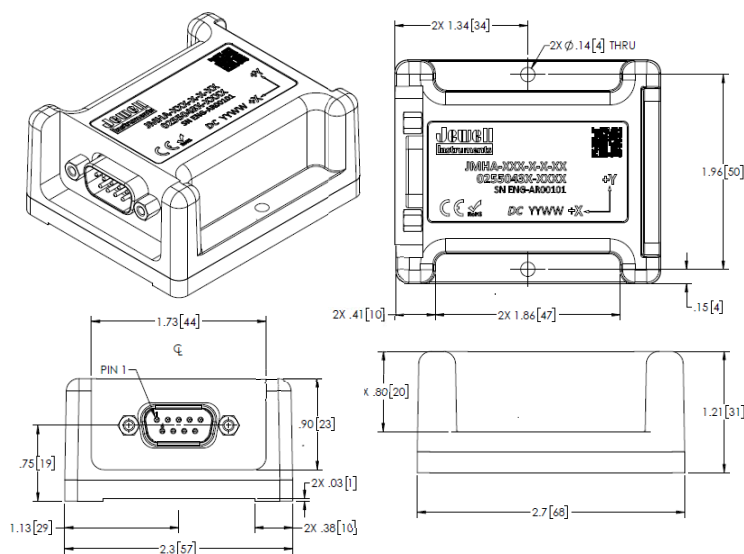
JDHI-100/200

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 Jewell's 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° digital resolution
- Operating Temp Range: -40° to $+85^\circ\text{C}$
- Seal: IP67
- M12 and DB9 termination options
- CE and RoHS compliant



Dimensions: in [mm]



APPLICATIONS:

- 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

JDHI SPECIFICATIONS

STATIC/DYNAMIC

INPUT RANGE (°)	±1	±3	±14.5	±30	±60	±90 ⁴
DIGITAL RESOLUTION (°, max) ¹	0.0001					
REPEATABILITY (°)	0.008					
NONLINEARITY (% FRO) max	0.03	0.03	0.05	0.1	0.2	0.25
0° OUTPUT TEMP. SENSITIVITY (PPM/°C max)	80					
TRANSVERSE AXIS MISALIGNMENT (°, max)	0.25					
BANDWIDTH (HZ NOM) (-3 dB)	(Sample Rate) / 4					
ACCURACY - TEMPERATURE SENSOR (°C, max)	±2					
WARM UP TIME (seconds typ)	0.5					

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
PROTOCOL	ASCII (RS-485); ASCII (RS-232); MODBUS-RTU
BAUD (bps) ²	2400, 4800, 9600, 19200 , 38400, 57600, 115200, 230400, 460800, 500000 (max)
COMMUNICATION SETTINGS ²	8 bits, 1 stop bit, <u>even</u> odd
DATA SAMPLE RATE (Hz) ²	3.9 , 7.8, 15.6, 31.2, 62.5, 125
NODE ID	0+last 2 digits of serial number
FILTERING	User selectable
BUS TERMINATION- INTERNAL ² (120Ω)	On / off

ENVIRONMENTAL

OPERATING TEMP. RANGE	-40° to +85°C
STORAGE TEMP. RANGE	-55° to +105°C
VIBRATION	20 grms 5Hz to 2KHz
SHOCK	180 g, 0.011 sec, 1/2 sine

ENCLOSURE

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

NOTES:

- Observed using noise reduction methods.
- User selectable; default underlined
- NIST Certification Range up to ±45°, Calibrated Temperature Range of -30 °C to +60 °C.

- Specifications only guaranteed up to 85°

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

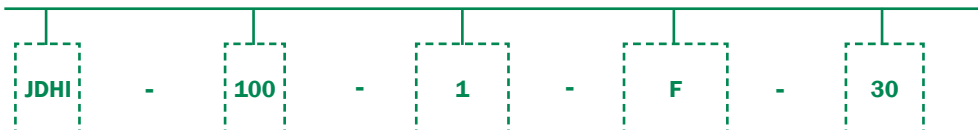
ORDERING INFORMATION

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, $\pm 30^\circ$ Input

SERIES - AXIS - TERMINATION - INTERFACE - INPUT RANGE



EXAMPLE 2: JDHI Series, Dual Axis, M12 Male termination, ASCII RS-232 Interface, $\pm 60^\circ$

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	12-pin M12, Male

ACCESSORIES

CABLE

CONNECTOR	MODEL #	LENGTH (m)
M12 (RS-232)	F848886-03M	3
M12 (RS-232)	F848886-05M	5
M12 (RS-232)	F848886-10M	10
M12 (RS-232)	F848886-15M	15
M12 (RS-485)	F848887-03M	3
M12 (RS-485)	F848887-05M	5
M12 (RS-485)	F848887-10M	10
M12 (RS-485)	F848887-15M	15
DB9 (RS-232)	95076-03	3
DB9 (RS-232)	95076-05	5
DB9 (RS-232)	95076-10	10
DB9 (RS-232)	95076-15	15
DB9 (RS-485)	95066-03	3
DB9 (RS-485)	95066-05	5
DB9 (RS-485)	95066-10	10
DB9 (RS-485)	95066-15	15

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	D-	N/C
2	D+	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 RTN	PWR RTN
9	V+	V+
10	N/C	N/C
11	N/C	N/C
12	N/C	N/C

MOUNTING BRACKET

TYPE	MODEL #	MATERIAL
Vertical	F849539-02	6061 Aluminum