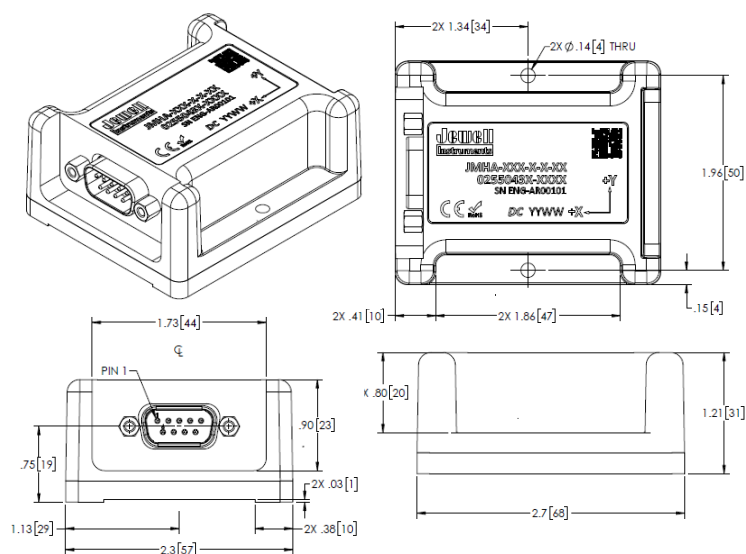


JMHA-100/200/300 Ruby MEMS Accelerometer

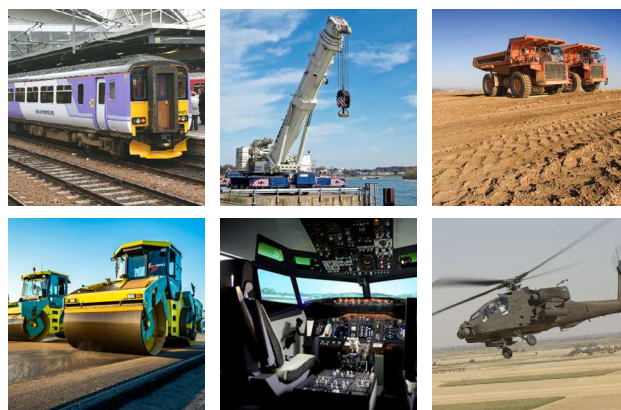
The NEW Ruby MEMS accelerometers represent the next generation of high-performance inertial sensors from Jewell Instruments. With an improved Price-Performance, the new Ruby inertial sensors offer improved resolution, faster frequency response, and wider bandwidth – all in a IP67 package that utilizes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

FEATURES:

- Ranges: $\pm 0.5g$ to $\pm 10g$
- Output Signal Options: $\pm 5V$, 4-20mA, or 0-5V
- Resolution: From 0.08 to 0.02 mg
- Bandwidth: 1000 Hz
- Operating Temp Range: -40° to $+85^{\circ}C$
- Seal: IP67
- RoHS compliant
- M12 and DB9 termination option



Dimensions: in [mm]



APPLICATIONS:

- Aerospace
- Military
- Robotics
- Academic Research
- Wind Turbine Controls
- Track Monitoring and Testing
- Wind Power Monitoring
- Vibration monitoring
- Automated Control Systems
- Vehicle Testing and more....

JMHA-D SPECIFICATIONS: $\pm 5\text{VDC}$

STATIC/DYNAMIC

INPUT RANGE (g)	± 0.5	± 1	± 2	± 4	± 10
FULL RANGE OUTPUT (VDC) ¹	± 5.00				
RESOLUTION & THRESHOLD (mg max)	0.02	0.04	0.05	0.08	0.08
NONLINEARITY (% FRO) ² max	0.06	0.06	0.06	0.07	0.07
NOMINAL SCALE FACTOR V/G	10	5	2.5	1.25	0.5
SCALE FACTOR TEMP COEFFICIENT (PPM/°C max)	150				
BIAS TEMP SENSITIVITY (mg/°C max)	0.25				
TRANSVERSE AXIS MISALIGNMENT (° max)	± 0.15				
BANDWIDTH (Hz, 3db)	1000				
CROSS AXIS SENSITIVITY (g/g max)	0.01				
NONREPEATABILITY (mg, max)	0.07	0.07	0.07	0.1	0.1

NOTES:

1. Full Range is defined "from negative full input angle to positive full input angle."
2. Nonlinearity is specified as deviation of output referenced to theoretical sine function value, independent of misalignment.

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

ELECTRICAL

NUMBER OF AXES	1, 2, 3
INPUT VOLTAGE RANGE (VDC)	12 to 18
INPUT CURRENT (mA, max)	22
OUTPUT IMPEDANCE (Ohms, nominal)	<1

ENVIRONMENTAL

OPERATING TEMP. RANGE	-40° to +85°C
STORAGE TEMP. RANGE	-40° to +95°C

ENCLOSURE

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

TEMP. SENSOR

OUTPUT VOLTAGE AT 25 °C	892.2 mV
SCALE FACTOR	3.0 mV/°C

PIN OUTS

DB9 PIN#	FNCTN	M12 PIN#	FNCTN
1	VIN+	1	VIN+
2	GND	2	GND
3	N/C*	3	N/C*
4	X	4	X
5	Y	5	Y
6	Z	6	Z
7	GND	7	GND
8	TEMP	8	TEMP
9	GND	9	GND
		10	N/C
		11	N/C
		12	N/C

* Pin# 3 can be used for -VIN for dual supply configurations

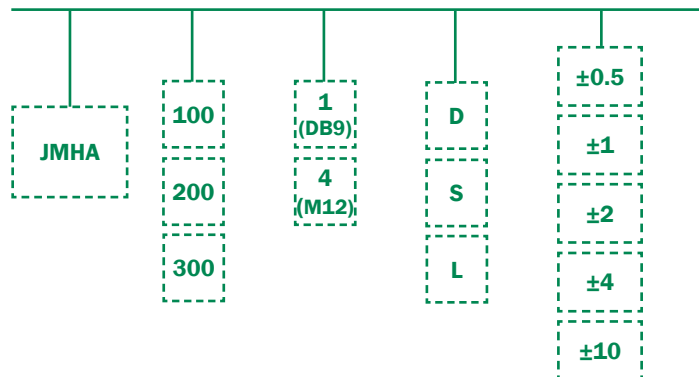


ORDERING INFORMATION

HOW TO ORDER

Model Numbers are comprised of the series, axes, the connector option, version, and the input range.

SERIES - AXES - CONNECTOR - VERSION - INPUT RANGE



D ($\pm 5V$), S (0-5V), L (4-20mA)

	MODEL #	PART #
± 0.5	JMHA-100-1-D-0.5	02550431-1122
	JMHA-100-4-D-0.5	02550431-1422
	JMHA-200-1-D-0.5	02550431-2122
	JMHA-200-4-D-0.5	02550431-2422
	JMHA-300-1-D-0.5	02550431-3122
	JMHA-300-4-D-0.5	02550431-3422

	MODED #	PART #
± 1	JMHA-100-1-D-1.0	02550431-1123
	JMHA-100-4-D-1.0	02550431-1423
	JMHA-200-1-D-1.0	02550431-2123
	JMHA-200-4-D-1.0	02550431-2423
	JMHA-300-1-D-1.0	02550431-3123
	JMHA-300-4-D-1.0	02550431-3423
± 2	JMHA-100-1-D-2.0	02550431-1124
	JMHA-100-4-D-2.0	02550431-1424
	JMHA-200-1-D-2.0	02550431-2124
	JMHA-200-4-D-2.0	02550431-2424
	JMHA-300-1-D-2.0	02550431-3124
	JMHA-300-4-D-2.0	02550431-3424
± 4	JMHA-100-1-D-4.0	02550431-1126
	JMHA-100-4-D-4.0	02550431-1426
	JMHA-200-1-D-4.0	02550431-2126
	JMHA-200-4-D-4.0	02550431-2426
	JMHA-300-1-D-4.0	02550431-3126
	JMHA-300-4-D-4.0	02550431-3426
± 10	JMHA-100-1-D-10.0	02550431-1128
	JMHA-100-4-D-10.0	02550431-1428
	JMHA-200-1-D-10.0	02550431-2128
	JMHA-200-4-D-10.0	02550431-2428
	JMHA-300-1-D-10.0	02550431-3128
	JMHA-300-4-D-10.0	02550431-3428

ACCESSORIES

CABLE

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

JMHA-S SPECIFICATIONS: 0-5VDC

STATIC/DYNAMIC

INPUT RANGE (g)	±0.5	±1	±2	±4	±10
FULL RANGE OUTPUT (VDC) ¹	0-5				
RESOLUTION & THRESHOLD (mg max)	0.02	0.04	0.05	0.08	0.08
NONLINEARITY (% FRO) ² max	0.06	0.06	0.06	0.07	0.07
NOMINAL SCALE FACTOR V/G	5	2.5	1.25	0.625	0.25
SCALE FACTOR TEMP COEFFICIENT (PPM/°/°C max)	150				
BIAS TEMP SENSITIVITY (mg/°C max)	0.25				
TRANSVERSE AXIS MISALIGNMENT (° max)	±0.15				
BANDWIDTH (Hz, 3db)	1000				
CROSS AXIS SENSITIVITY (g/g max)	0.01				
NONREPEATABILITY (mg, max)	0.07	0.07	0.07	0.1	0.1

NOTES:

1. Full Range is defined "from negative full input angle to positive full input angle."
2. Nonlinearity is specified as deviation of output referenced to theoretical sine function value, independent of misalignment.

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

ELECTRICAL

NUMBER OF AXES	1, 2, 3
INPUT VOLTAGE RANGE (VDC)	12 to 18
INPUT CURRENT (mA, max)	22
OUTPUT IMPEDANCE (Ohms, nominal)	<1

ENVIRONMENTAL

OPERATING TEMP. RANGE	-40° to +85°C
STORAGE TEMP. RANGE	-40° to +95°C

ENCLOSURE

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

TEMP. SENSOR

OUTPUT VOLTAGE AT 25 °C	892.2 mV
SCALE FACTOR	3.0 mV/°C

PIN OUTS

DB9 PIN#	FNCTN	M12 PIN#	FNCTN
1	VIN+	1	VIN+
2	GND	2	GND
3	N/C	3	N/C
4	X	4	X
5	Y	5	Y
6	Z	6	Z
7	GND	7	GND
8	TEMP	8	TEMP
9	GND	9	GND
		10	N/C
		11	N/C
		12	N/C

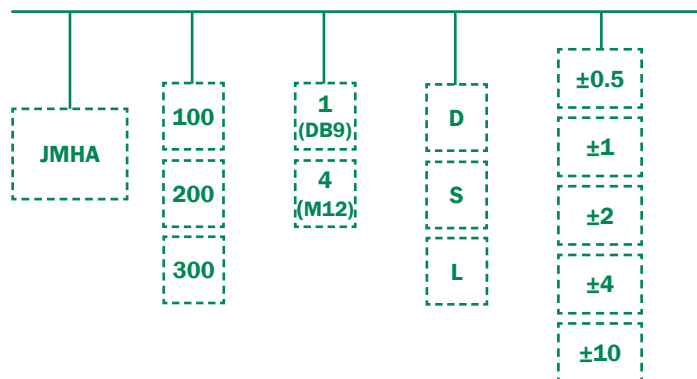


ORDERING INFORMATION

HOW TO ORDER

Model Numbers are comprised of the series, axes, the connector option, version, and the input range.

SERIES - AXES - CONNECTOR - VERSION - INPUT RANGE



D (±5V), S (0-5V), L (4-20mA)

	MODEL #	PART #
±0.5	JMHA-100-1-S-0.5	02550431-1112
	JMHA-100-4-S-0.5	02550431-1412
	JMHA-200-1-S-0.5	02550431-2112
	JMHA-200-4-S-0.5	02550431-2412
	JMHA-300-1-S-0.5	02550431-3112
	JMHA-300-4-S-0.5	02550431-3412

	MODED #	PART #
±1	JMHA-100-1-S-1.0	02550431-1113
	JMHA-100-4-S-1.0	02550431-1413
	JMHA-200-1-S-1.0	02550431-2113
	JMHA-200-4-S-1.0	02550431-2413
	JMHA-300-1-S-1.0	02550431-3113
	JMHA-300-4-S-1.0	02550431-3413
±2	JMHA-100-1-S-2.0	02550431-1114
	JMHA-100-4-S-2.0	02550431-1414
	JMHA-200-1-S-2.0	02550431-2114
	JMHA-200-4-S-2.0	02550431-2414
	JMHA-300-1-S-2.0	02550431-3114
	JMHA-300-4-S-2.0	02550431-3414
±4	JMHA-100-1-S-4.0	02550431-1116
	JMHA-100-4-S-4.0	02550431-1416
	JMHA-200-1-S-4.0	02550431-2116
	JMHA-200-4-S-4.0	02550431-2416
	JMHA-300-1-S-4.0	02550431-3116
	JMHA-300-4-S-4.0	02550431-3416
±10	JMHA-100-1-S-10.0	02550431-1118
	JMHA-100-4-S-10.0	02550431-1418
	JMHA-200-1-S-10.0	02550431-2118
	JMHA-200-4-S-10.0	02550431-2418
	JMHA-300-1-S-10.0	02550431-3118
	JMHA-300-4-S-10.0	02550431-3418

ACCESSORIES

CABLE

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

JMHA-L SPECIFICATIONS: 4-20mA

STATIC/DYNAMIC

INPUT RANGE (g)	±0.5	±1	±2	±4	±10
FULL RANGE OUTPUT (mA) ¹	4-20				
RESOLUTION & THRESHOLD (mg max)	0.02	0.04	0.05	0.08	0.08
NONLINEARITY (% FRO) ² max	0.06	0.06	0.06	0.07	0.07
NOMINAL SCALE FACTOR mA/G	16	8	4	2	0.8
SCALE FACTOR TEMP COEFFICIENT (PPM/°C max)	150				
BIAS TEMP SENSITIVITY (mg/°C max)	0.25				
TRANSVERSE AXIS MISALIGNMENT (° max)	±0.15				
BANDWIDTH (Hz, 3db)	1000				
CROSS AXIS SENSITIVITY (g/g max)	0.01				
NONREPEATABILITY (mg, max)	0.07	0.07	0.07	0.1	0.1

NOTES:

1. Full Range is defined "from negative full input angle to positive full input angle."
 2. Nonlinearity is specified as deviation of output referenced to theoretical sine function value, independent of misalignment.
- *Specifications subject to change without notice on account of continued product development

ELECTRICAL

NUMBER OF AXES	1, 2, 3
INPUT VOLTAGE RANGE (VDC)	12 to 18
INPUT CURRENT (mA, max)	40 (1-axis), 60 (2-axis), 80 (3-axis)
OUTPUT IMPEDANCE (Ohms, nominal)	15

ENVIRONMENTAL

OPERATING TEMP. RANGE	-40° to +85°C
STORAGE TEMP. RANGE	-40° to +95°C

ENCLOSURE

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

TEMP. SENSOR

OUTPUT VOLTAGE AT 25 °C	892.2 mV
SCALE FACTOR	3.0 mV/°C

PIN OUTS

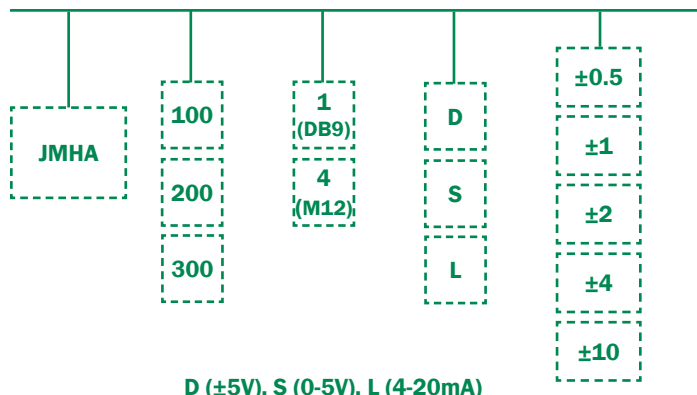
DB9 PIN#	FNCTN	M12 PIN#	FNCTN
1	VIN+	1	VIN+
2	GND	2	GND
3	N/C	3	N/C
4	X	4	X
5	Y	5	Y
6	Z	6	Z
7	GND	7	GND
8	TEMP	8	TEMP
9	GND	9	GND
		10	N/C
		11	N/C
		12	N/C

ORDERING INFORMATION

HOW TO ORDER

Model Numbers are comprised of the series, axes, the connector option, version, and the input range.

SERIES - AXES - CONNECTOR - VERSION - INPUT RANGE



	MODEL #	PART #
±0.5	JMHA-100-1-L-0.5	02550431-1132
	JMHA-100-4-L-0.5	02550431-1432
	JMHA-200-1-L-0.5	02550431-2132
	JMHA-200-4-L-0.5	02550431-2432
	JMHA-300-1-L-0.5	02550431-3132
	JMHA-300-4-L-0.5	02550431-3432

	MODED #	PART #
±1	JMHA-100-1-L-1.0	02550431-1133
	JMHA-100-4-L-1.0	02550431-1433
	JMHA-200-1-L-1.0	02550431-2133
	JMHA-200-4-L-1.0	02550431-2433
	JMHA-300-1-L-1.0	02550431-3133
±2	JMHA-100-1-L-2.0	02550431-1124
	JMHA-100-4-L-2.0	02550431-1424
	JMHA-200-1-L-2.0	02550431-2124
	JMHA-200-4-L-2.0	02550431-2424
	JMHA-300-1-L-2.0	02550431-3124
±4	JMHA-100-1-L-4.0	02550431-1136
	JMHA-100-4-L-4.0	02550431-1436
	JMHA-200-1-L-4.0	02550431-2136
	JMHA-200-4-L-4.0	02550431-2436
	JMHA-300-1-L-4.0	02550431-3136
±10	JMHA-100-1-L-10.0	02550431-1138
	JMHA-100-4-L-10.0	02550431-1438
	JMHA-200-1-L-10.0	02550431-2138
	JMHA-200-4-L-10.0	02550431-2438
	JMHA-300-1-L-10.0	02550431-3138
	JMHA-300-4-L-10.0	02550431-3438

ACCESSORIES

CABLE

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