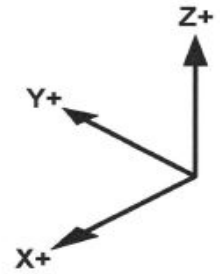


# JMA-100/200/300-D MEMS Accelerometer Series

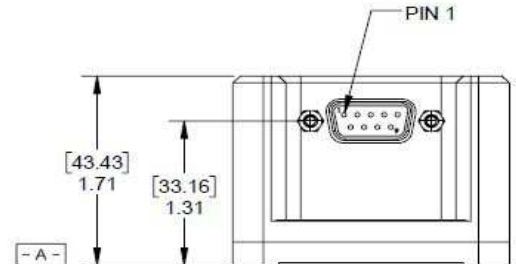
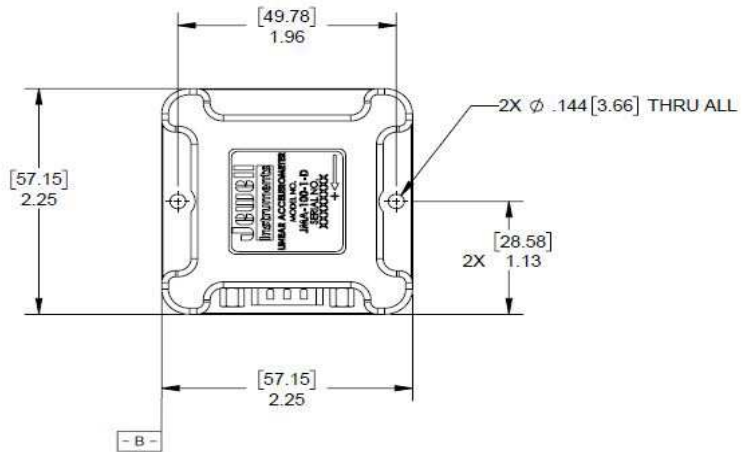
## ±5VDC Output

Jewell has a 40+ year history of providing precision force-balanced accelerometers and is pleased to provide MEMS parts with the same attention to detail that our customers demand.

The JMA-100/200/300 series is available in single (JMA-100), dual (JMA-200) and triple (JMA-300) axis configurations. This presents a robust and rugged design for industrial use, but with the benefit of low-cost MEMS technology.



### Outline Diagram



**NOTES:**

1. UNITS:  $\frac{[mm]}{IN}$
2. UNIT IS AVAILABLE IN THREE VERSIONS; SINGLE AXIS (X AXIS), DUAL AXIS (X & Y AXIS) OR TRIAXIAL (X, Y, & Z AXIS). SINGLE AXIS SHOWN HERE.
3. DATUM  $\boxed{- A -}$  AND  $\boxed{- B -}$  ARE DEFINED AS REFERENCE SURFACES.

### Features

- ±0.5 to ±10 g ranges
- Robust and Rugged Enclosure
- Single, Dual and Tri-Axis Models Available
- Low-Cost MEMS Technology
- RoHS Compliant
- Filtering Available
- Dual Power Input
- ±5 VDC Output
- Temperature Sensor Option Available
- IP65 Seal

### Applications

- Vehicle Testing
- Railway Maintenance & Testing
- Acceleration/Deceleration Control
- Aerospace/Space Craft Testing
- Lateral Train Control

### Pin Out

Pin #	Function
1	+Vin
2	Pwr Gnd
3	-Vin
4	X Out
5	Y Out
6	Z Out
7	Sig Rtn
8	Temp Out
9	N/C

### Performance Specifications

#### STATIC/DYNAMIC

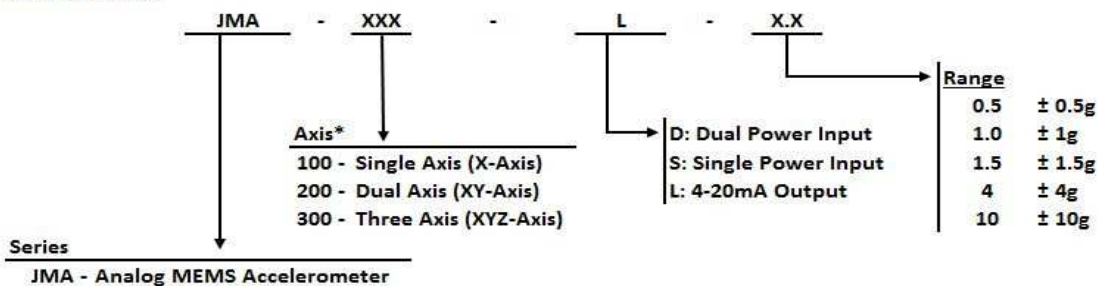
Measurement Range <sup>1</sup> (g)	±0.5	±1	±1.5	±4	±10
Output Voltage Range (VDC)	±5.00	±5.00	±5.00	±5.00	±5.00
Scale Factor Tolerance (mg)	±5	±10	±15	±20	±50
Scale Factor Temp. Coefficient (PPM/°C max)	150	150	150	100	100
Bias (g max)	±0.01	±0.01	±0.02	±0.01	±0.01
Bias Temp. Sensitivity (mg/°C max)	1.0	0.5	0.5	0.5	1.0
Transverse Axis Misalignment (° max)	±0.5	±0.5	±0.5	±0.5	±0.5
Resolution and Threshold (mg max)	0.025	0.05	0.05	0.08	0.08
Non-linearity (% FRO max)	0.05	0.05	0.08	0.08	0.08
Nonrepeatability, Hysteresis (mg max)	0.07	0.07	0.07	0.10	0.1
Bandwidth (Hz nom) (-3 dB)	100	100	100	200	200
Cross Axis Sensitivity (g/g max)	0.01	0.005	0.005	0.005	0.005
Warm Up Time (Seconds max)	0.5	0.5	0.5	0.5	0.5

#### ELECTRICAL AND ENVIRONMENTAL

Number of Axes	1, 2 or 3
Input Voltage Range (VDC)	±12 to ±18
Input Current (mA max)	8 (1-axis), 16 (2-axis), 24 (3-axis)
Output Noise (grms max)	0.005
Output Impedance (Ohms nom)	1
Operating Temp. Range (°C)	-40 to +85
Storage Temp. Range (°C)	-40 to +95
Shock	100 g, 0.011 sec, ½ sine
Weight (grams)	165 (1 axis), 170 (2 axes), 180 (3 axes)
Seal	IP65

Notes: 1 - Custom ranges available on request. \*Specifications subject to change without notice on account of continued product development

#### How To Order:



Example: JMA-100-L-0.5 = JMA series, single axis, 4-20mA Output, ±0.5g range

\*Call factory for customized axis configurations

#### Single Axis Part Numbers

JMA-100-D-0.5	02550360-122
JMA-100-D-1.0	02550360-123
JMA-100-D-1.5	02550360-124
JMA-100-D-4	02550360-126
JMA-100-D-10	02550360-128

#### Dual Axis Part Numbers

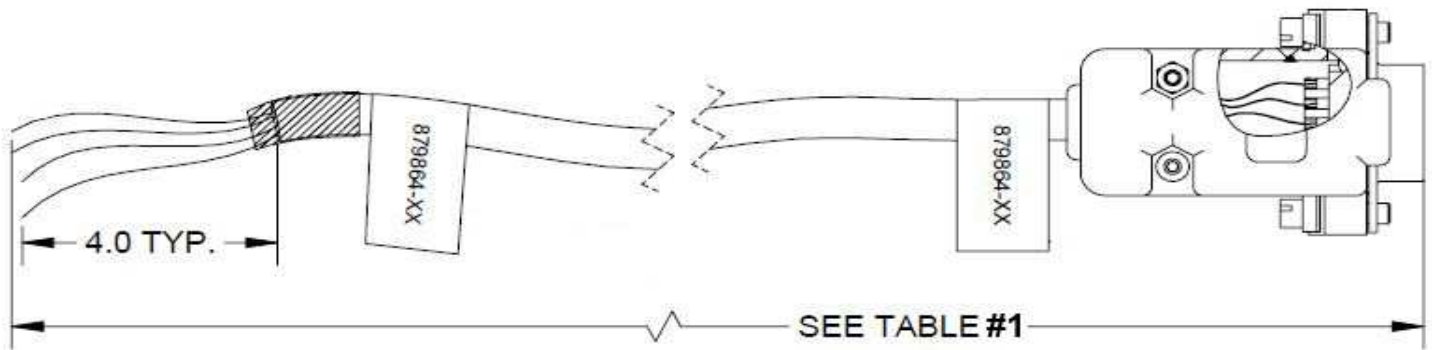
JMA-200-D-0.5	02550360-222
JMA-200-D-1.0	02550360-223
JMA-200-D-1.5	02550360-224
JMA-200-D-4	02550360-226
JMA-200-D-10	02550360-228

#### Triple Axis Part Numbers

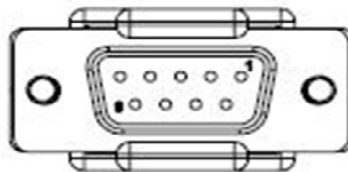
JMA-300-D-0.5	02550360-322
JMA-300-D-1.0	02550360-323
JMA-300-D-1.5	02550360-324
JMA-300-D-4	02550360-326
JMA-300-D-10	02550360-328

**CABLE ASSEMBLY (PN 879864-XX)**

DB9 FEMALE CONNECTOR



Dimensions in feet [m]



CONNECTOR PINOUT		
DB9 PIN	FLY LEADS	FUNCTION
1	RED	+PWR
2	BLACK	PWR RTN
3	VIOLET	N/C
4	GREEN	X OUT
5	ORANGE	Y OUT
6	YELLOW	N/C
7	BROWN	SIG RTN
8	BLUE	TEMP OUT
9	WHITE	N/C

Table #1

Cable Configuration	
Part #	Length
879864-10	[10m] 32.8 feet
879864-XX	Other length available (specify on order)