

# JA-5H190N Accelerometer



## Key features

- 190 °C operating temperature
- High accuracy with long term stability
- Shock and vibration resistant
- Ultimate reliability
- Easy to integrate

The 190 °C JA-5H190N accelerometers have been developed to meet the increasing high temperature needs of downhole applications. As one of the key suppliers of accelerometers to downhole applications JAE has used its wealth of knowledge to extend the working temperature of the accelerometer to provide reliable long term operation even at extreme temperatures without compromising performance.

## Applications

Designed for extreme downhole applications including:

- Directional Drilling
- MWD/LWD
- Wireline

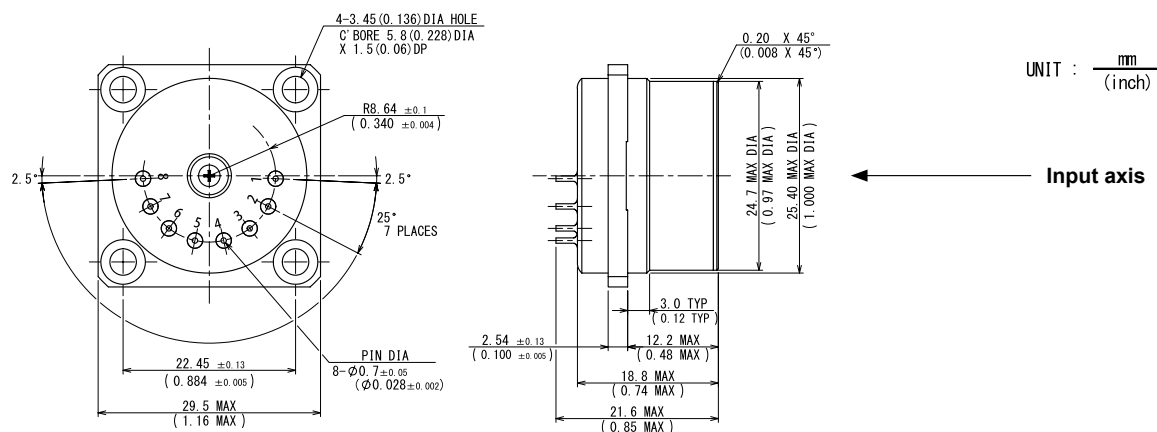
These high performance servo balanced quartz accelerometers have been specifically designed to survive the environmental challenges of downhole applications including Directional Drilling, MWD/LWD and Wireline. The proven rugged design provides reliable long term operation even at 190 °C.

*An extreme product for extreme applications.*

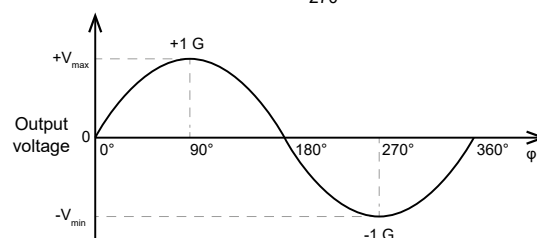
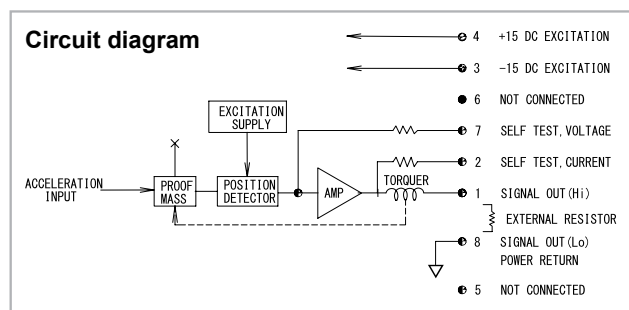
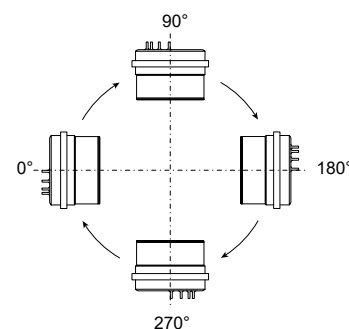
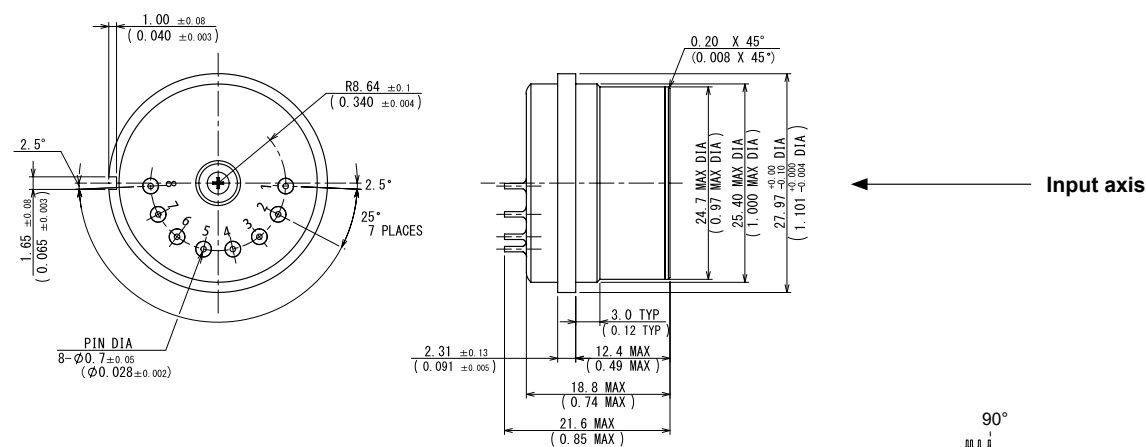
*To be exported in accordance with all relevant regulations*

## Dimensional drawings

### JA-5H190N-1



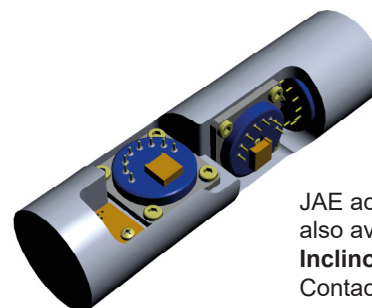
### JA-5H190N-2



## Technical data

| Environmental                                |                                      |   |
|--|--------------------------------------|---|
| Temperature                                  | Operating                            | -20 °C to +190 °C                                     |
|  | Survival                             | -40 °C to +195 °C                                     |
| Vibration                                    | Sine                                 | 30 G 0-peak, 30 Hz - 500 Hz                           |
|  | Random                               | 20 Grms, 15 Hz - 500 Hz                               |
| Shock  | Operating                            | 1,000 G   |
|  | Survival                             | 1,500 G   |
| Electrical                                   |                                      |   |
| Input voltage                                |                                      | $\pm 12.0 V_{DC}$ to $\pm 18.0 V_{DC}$                |
| Input current (quiescent)                    |                                      | 4.5 mA max.   |
| Insulation resistance (power return to case) |                                      | 50 M $\Omega$ min. @ 50 V <sub>DC</sub>               |
| Mechanical                                   |                                      |   |
| Weight                                       |                                      | 50 grams max.   |
| Material                                     |                                      | Stainless steel (non-magnetic)                        |
| Performance                                  |                                      |   |
| Measurement range                            |                                      | $\pm 4.0$ G min.                                      |
| Output voltage                               |                                      | $\pm 10.0 V_{DC}$ min. @ $\pm 15.0 V_{DC}$ excitation |
| Scale Factor                                 | Nominal (@ 25 °C)                    | 3.0 mA/G $\pm 5$ %                                    |
|  | Temperature Coefficient              | $\pm 180$ ppm/°C max. (@ 25 °C)                       |
| Bias   | Nominal (@ 25 °C)                    | $\pm 15.0$ mG max.                                    |
|  | Temperature coefficient              | $\pm 150$ $\mu$ G/°C max.                             |
| Axis alignment                               | Nominal (@ 25 °C)                    | $\pm 3.0$ mrad max.                                   |
|  | Temperature coefficient              | $\pm 7$ $\mu$ rad/°C max.                             |
| Noise  | 1 Hz to 500 Hz                       | 4 $\mu$ A rms max.                                    |
|  | 500 Hz to 10 kHz                     | 14 $\mu$ A rms max.                                   |
| Resolution and Threshold                     |                                      | 1 $\mu$ G max.  |
| Linearity                                    |                                      | $\pm 0.01$ % full scale max.                          |
| Frequency response (bandwidth)               |                                      | 500 Hz min.   |
| Long term stability (1 year)                 | Combined Scale factor and Bias shift | 1,800 $\mu$ G max.                                    |
|  | Axis alignment                       | $\pm 400$ $\mu$ rad max.                              |

$$1 \text{ G} = 9.80665 \text{ m/s}^2$$



JAE accelerometers are also available as custom **Inclinometer** packages. Contact us for details.

## Contact information

### North and South America

JAE Electronics, Inc.  
1100 W. Park One Drive  
Sugar Land  
TX 77478  
United States

T: +1 281 325 5760  
E: [support.aerospace@jae.com](mailto:support.aerospace@jae.com)

### Europe

JAE Europe, Ltd.  
Royal Pavilion, Tower 3  
1st Floor, Wellesley Road  
Aldershot, Hampshire  
GU11 1PZ  
United Kingdom

T: +44 1252 55 11 00  
E: [support.aerospace@jae.co.uk](mailto:support.aerospace@jae.co.uk)

### Japan and Rest of World

Japan Aviation Electronics  
Industry, Ltd.  
1-19, Aobadai 3-chome  
Meguro-ku  
Tokyo 153-8539  
Japan

T: +81 3 3780 2925  
E: [aerinfo@jae.co.jp](mailto:aerinfo@jae.co.jp)

## More accelerometers from JAE



JA-5 series  
Ø25 mm



JA-25 series  
Ø19 mm

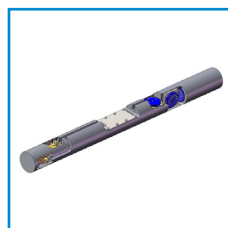


JA-35 series  
Ø15 mm

## More downhole products from JAE



Magnetometers



Directional Modules

For more information on these products and other product ranges visit  
[www.jae.com](http://www.jae.com)

## Document revision table

| Document number | Issue | Revision date | Changes      |
|-----------------|-------|---------------|--------------|
| VCL001-000008   | 01    | 01/07/2021    | New document |

JAE reserves the right to modify specifications without prior notice.