

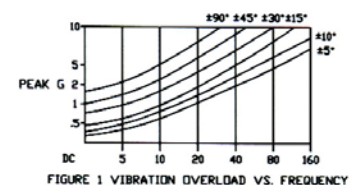
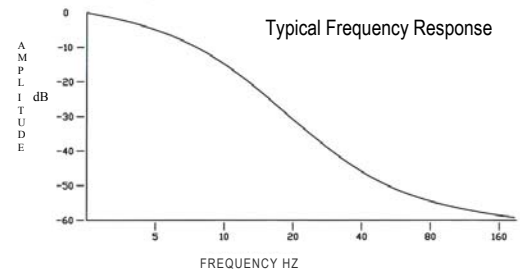
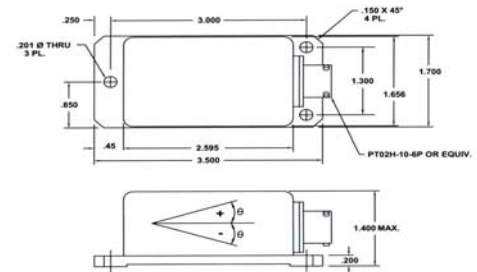
# Inclinometers

## SI-724BIHPC

The Columbia Model SI-724BIHPC is a force balance inclinometer designed with an output circuit configuration made for use in 4-20 mA data transmission systems. The 4-20 mA system is used extensively in industrial installations in order to transmit data over long distances in environments where interference from nearby electrical power lines could be a problem.

A single supply voltage powers both the sensor and 4-20 mA line driver. The Model SI-724BIHPC incorporates Columbia's patented HP suspension system and special desensitization circuitry allowing this device to provide accurate tilt data while in substantial vibration environments. This sensor is intended for applications such as platform stabilization, surface mapping and measuring tilt angles in remote locations. *Consult the factory for customized versions of this sensor.*

- \* **4-20 mA Output**
- \* **+18 To +28 VDC Operation**
- \* **High Performance**



### I/O Connector Pin Functions:

| SI-724BIHPC |                |     |                   |
|-------------|----------------|-----|-------------------|
| Pin         | Function       | Pin | Function          |
| A           | + VDC          | D   | E <sub>0</sub> HI |
| B           | Ground         | E   | E <sub>0</sub> LO |
| C           | I <sub>0</sub> | F   | Spare             |

### Ordering Information:

**SI-724BIHPC (+/- X Deg )**  
**Standard Inclinometer**  
 Range +/- X Deg (Required)

Optional Mating Connector

### Specifications

#### Operational

| SI-724BIHPC                      |                                                                                    |
|----------------------------------|------------------------------------------------------------------------------------|
| Ranges Available                 | ±5°, ±15°, ±30°, ±45°, ±90°                                                        |
| Output Current                   | 4-20 mA                                                                            |
| Output Function                  | I <sub>0</sub> = 12 + K Sin θ (mA) ±0.5% of Normal Into a Maximum Load of 600 Ohms |
| Output Voltage                   | ±1 V ±0.5% at Rated Range, Differential                                            |
| Excitation                       | +18 To +28 VDC<br><50 mA                                                           |
| Output Impedance                 | 50 Megohm Typical                                                                  |
| Non-Linearity                    | ±0.1% F.R.                                                                         |
| Non-Repeatability                | ±0.1% F.R.                                                                         |
| Scale Factor Tolerance           | ±1%                                                                                |
| Scale Factor Temp Coefficient    | ±0.02% / Deg C                                                                     |
| Zero Bias                        | 12 ±0.02 mA                                                                        |
| Zero Bias Temp. Coefficient      | ±0.002% F.R. / Deg C                                                               |
| Resolution                       | 0.001% F.R.                                                                        |
| Bandwidth                        | 0 To 3 Hz ±5% (-18 dB / Octave Rolloff)                                            |
| Orthogonal Sensitivity           | <1%                                                                                |
| Case Alignment                   | ±0.25 Deg                                                                          |
| Vibration Overload vs. Frequency | See Figure 1                                                                       |

#### Environmental

|                                  |                            |
|----------------------------------|----------------------------|
| Temperature, Operating           | -40 To +85 Deg C           |
| Temperature, Storage             | -40 To +85 Deg C           |
| Random Vibration (2 To 2,000 Hz) | 15 G RMS, 0.25" Disp. D.A. |
| Shock Survival                   | 1000 G, 1 mSec             |
| Humidity                         | 95% R.H.                   |

#### Physical

|                             |                                                                          |
|-----------------------------|--------------------------------------------------------------------------|
| Weight                      | 7 Oz (198 Gm)                                                            |
| Size                        | 3.50 In L x 1.70 In W x 1.40 In H<br>(8.89 cm L x 4.32 cm W x 3.56 cm H) |
| Case Material               | Anodized Aluminum                                                        |
| Sealing                     | Environmental                                                            |
| Electrical Interface        | Connector PT02H-10-6P of Equivalent                                      |
| Mating Connector (Optional) | PT06A-10-6S(SR)                                                          |



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