## FEATURES

- USB 2.0 Communication Link
- USB Bus-Powered (5V)
- Input/Output Short Circuit Protection
- Streaming ASCII Output
- Offered with DLL/Mac Dynamic Library
- CE Approved Class A (required for Medical and Aerospace applications)
- Industrial metallic enclosure
- Integrated DIN rail mount
- Supports, VDC, mA, mV and TTL type input
- Lends itself to a multitude of industry applications through its support of amplified input

## MATERIAL & MANUFACTURING

- High-Reliability PCB/Assembly (IPC CLASS III)
- High-Temperature Rated Material/BOM Items
- Strictly Controlled Inspection, Test, and Calibration Process
- Fully Controlled Handling/Packaging Process
- Extensive Test and Validation for 100% of Production Units
- Individual Calibration Report/Certification for Instruments and Systems

## APPLICATIONS

- Medical
- Aerospace
- Precision Industrial Automation
- Lab & Field Instrumentation
- Precision Manufacturing

**IMPORTANT NOTE: ONLY CONNECT DEVICE TO USB 2.0 PORT**

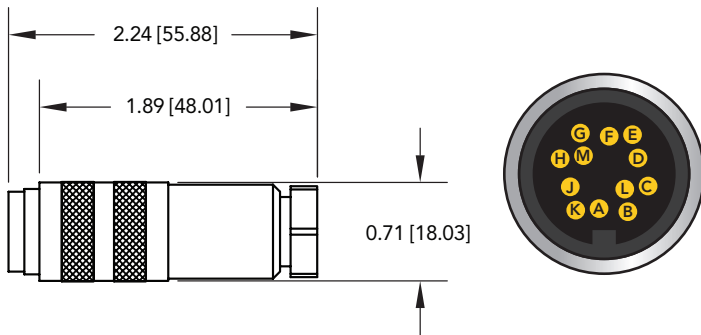| SPECIFICATIONS | |
|---|---|
| **GENERAL (STRAIN GAUGE mV/V, VOLTAGE, and CURRENT IINPUTS)** | |
| Item Number | FSH03944 |
| Sampling Rate | Up to 4800 SPS |
| Bandwidth (Hz) | Sampling Rate (SPS) / 4 |
| Internal Resolution | 24 bits |
| Resolution (Noise Free) | See Chart on Page 2 |
| Non Linearity (max) | ± 0.005% of FSR |
| Output | Digital Packetized Data |
| Integrated Digital Filter | 50 Hz/60 Hz Rejection (100 dB) |
| On Chip Memory | 1 Kilobyte |
| Stored Calibration | Up to 16 Points |
| On Chip Sensor Profiles | Up to 4 |
| ASCII Output Update Rate | 10 SPS |
| Weight | 0.43 lb (195 g) |
| IP Rating | IP50 |
| **ENCODER INPUT** | |
| Encoder Input | Quadrature Leading and Lagging Pulse (TTL) |
| Speed Measurement | Up to 150k Pulses Per Second[1] |
| Angle Measurement (α) | Up to 10k Pulses Per Rotation (PPR)[1] |
| Angle/Speed Measurement (Update Rate) | 100 ms |
| **STRAIN GAUGE mV/V INPUT** | |
| Bridge Excitation | 4.6 VDC |
| Standard Full Scale Range (FSR) | ± 3.4 mV/V (factory default) |
| Optional Input Range | Up to ± 400 mV/V |
| Min/Max Bridge Resistance | 50 to 5000 Ohm |
| **VOLTAGE INPUT** | |
| Supply Voltage | Selectable 5,9,10,12,15,18,20,24 VDC/1W |
| Standard Full Scale Range (FSR) | ± 10 VDC (Factory Default) |
| **CURRENT INPUT** | |
| Supply Voltage | Selectable 5,9,10,12,15,18,20,24 VDC/1W |
| Standard Full Scale Range (FSR) | 0-20 mA (Factory Default) |
| **CONNECTORS** | |
| Sensor Connector | Binder 09 0132 90 12 |
| Mating Connector | Binder 99 5129 00 12 |
| USB 2.0 Connector | Type B |

[1] Speed = $\Delta \alpha \times 60$ / PPR

CE   RoHS   ANSI Z540-1   ISO 17025   ISO 9001   ISO 13485   U.S. Manufacturer

## 12-PIN BINDER MATING CONNECTOR (99 5129 00 12)

| PIN | SYMBOL | DESCRIPTION |
|---|---|---|
| A | +E | + Excitation / + Sense |
| B | +S | + Signal |
| C | –E | – Excitation / – Sense / Shield |
| D | –S | – Signal |
| F | +Vcc | Supply Output |
| G | Gnd | Ground / Shield |
| H | 4.75 Out | 4.75 VDC Output |
| J | –V | – Amplified Input |
| K | +V | + Amplified Input |
| L | PLEAD | Leading Pulse |
| M | PLAG | Lagging Pulse |

2.24 [55.88]

1.89 [48.01]

0.71 [18.03]

## SPECIFICATIONS (continued)

### ENVIRONMENT

| | |
|---|---|
| Operating Temperature | -13°F to 185°F [-25°C to 85°C] |
| Storage Temperature | -40°F to 257°F [-40°C to 125°C] |

### CONFORMITY

| | |
|---|---|
| RoHS | 2011/65/EU |
| CE | EN61326-1:2013; EN55011:2009 (Amended by A1:2010) |

## SAMPLING RATE

| SAMPLES PER SECOND (SPS) | mV/V RESOLUTION | mA AND VDC INPUT RESOLUTION |
|---|---|---|
| 5 | 18 | 20.5 |
| 50 | 16.5 | 19.5 |
| 100 | 16.3 | 19.2 |
| 300 | 15.8 | 18.2 |
| 1200 | 14.6 | 17.0 |
| 2400 | 13.6 | 16.0 |
| 4800 | 13.6 | 16.0 |
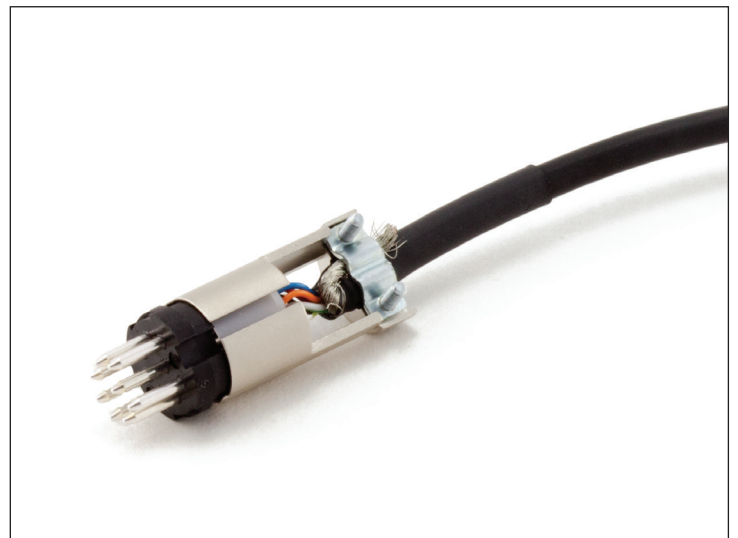
**Note:** Shield should be connected to cable clamp of binder cable assembly when connecting on instrument side. Sensor cable shield connections should be grounded on one end, either the sensor side or the instrument side, to avoid potential ground loops.

## DIMENSIONS inches [mm]

2.37 [60.20]

1.05 [26.67] — USB side

Integrated DIN clip
for 35 mm rail

3.80 [96.52]

0.53 [13.46] — Sensor side

1.07 [27.18]
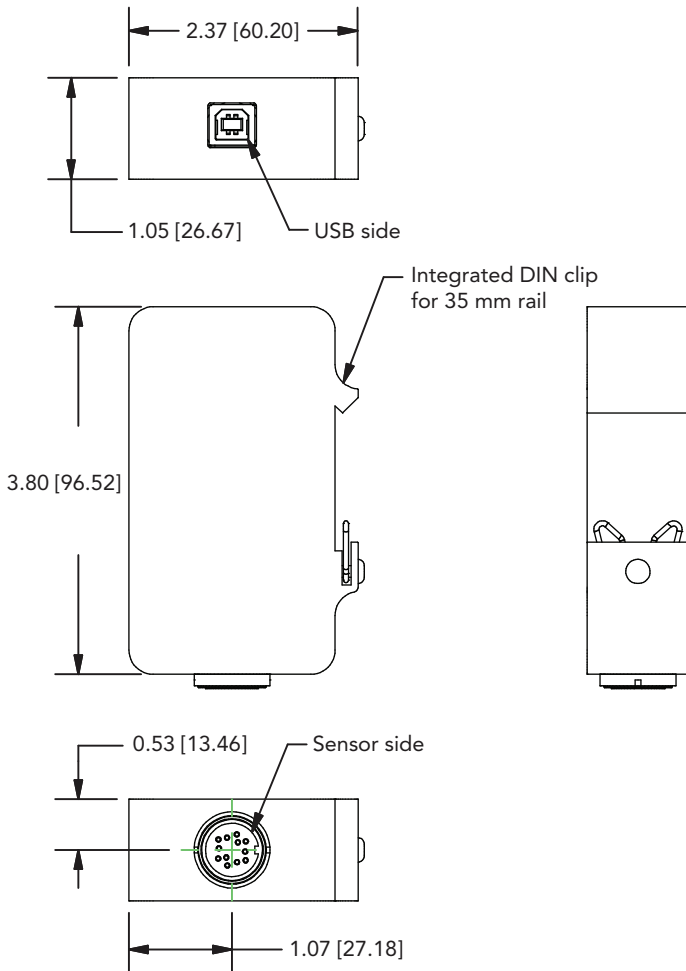
## ACCESSORIES

- **FUTEK's SENSIT™ Software**  (FSH04877, FSH04878)
  14 Day Trial - Available to download on FUTEK website. A license is required, per seat, after 14 days to benefit the features such as data logging, graphing, etc. Trial version turns into basic read-out ONLY after 14 days and a product key is required to enable the features.

- **USB 2.0 Hi-Speed A/B Cable** (GOD04123, included)

- **12-PIN Binder Male Plug**, 99 5129 00 12 (GOD02975 , included)

CE   RoHS   ANSI Z540-1   ISO 17025   ISO 9001   ISO 13485   U.S. Manufacturer