



### FEATURES

- USB 2.0 communication link
- USB bus-powered
- Input/output short circuit protection
- Streaming ASCII output
- CE approved
- Supports mV/V and TTL (Encoder) type as input

### SPECIFICATIONS

#### GENERAL

Sampling Rate	Up to 200 samples per second
Bandwidth (Hz)	Sampling Rate (SPS)/4
Internal Resolution	24 bits
Resolution (noise free)	See chart on page 2
Nonlinearity	$\pm 0.005\%$ of full-scale range
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
Weight	Approximate 10 g

#### ENCODER INPUT

Encoder Input	Quadrature Leading and Lagging Pulse (TTL)
Speed Measurement	Up to 150k Pulses Per Second <sup>1</sup>
Angle Measurement ( $\alpha$ )	Up to 10k Pulses Per Rotation (PPR) <sup>1</sup>
Angle/Speed Measurement (update rate)	100 ms

#### STRAIN GAUGE mV/V INPUT

Bridge Excitation	4.5 VDC
Standard Input Range	$\pm 4$ mV/V
Optional Input Range	Up to $\pm 500$ mV/V
Min. Bridge Resistance	50 Ohm
Max. Bridge Resistance	5000 Ohm

#### POWER SUPPLY

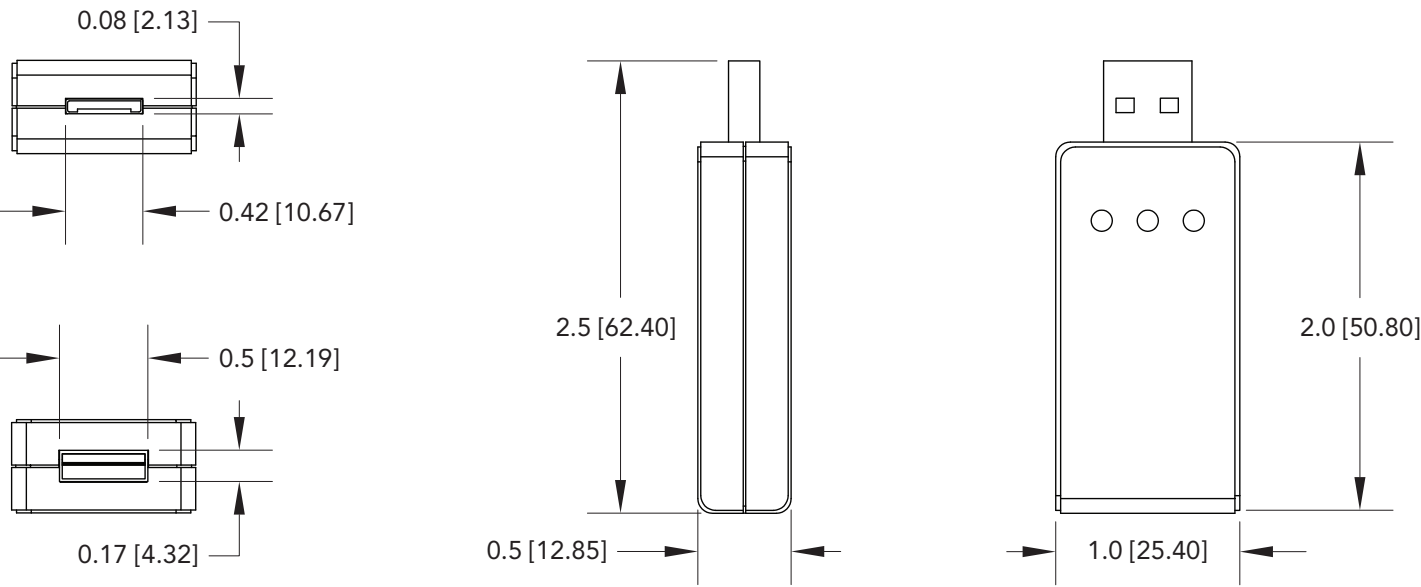
Voltage Rating	USB Bus (5V $\pm$ 5%)
Current Consumption	90 mA with 350 Ohm bridge

#### CONNECTORS

Mating Connector	Hirose LX40-12P
Connector Receptacle	Hirose LX60-12S
USB 2.0 Connector	Type A plug

<sup>1</sup> Speed =  $\Delta \alpha \times 60 / \text{PPR}$

DIMENSIONS inches [mm]



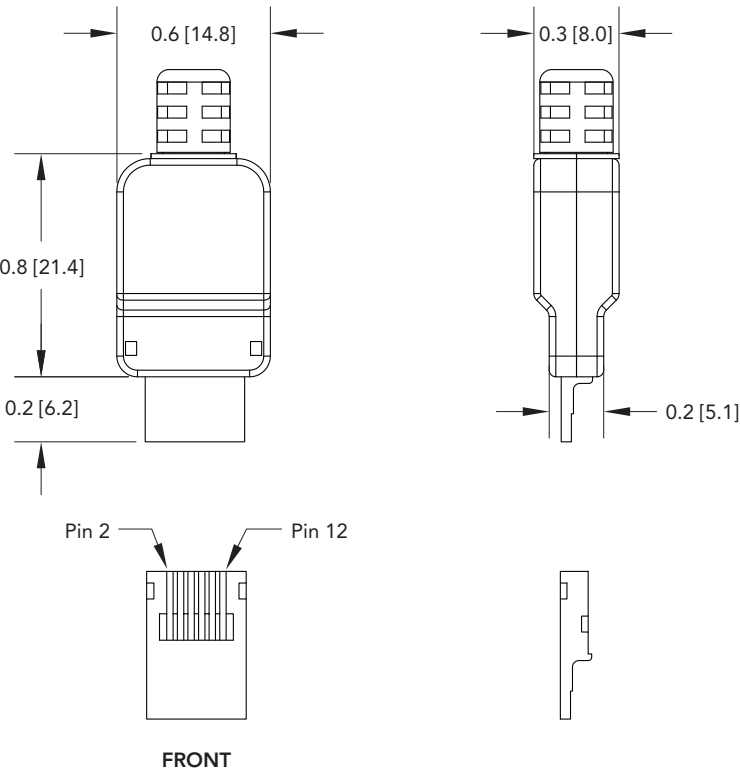
SPECIFICATIONS (continued)	
ENVIRONMENT	
Operating Temperature	-13 to 185°F [-25 to 85°C]
Storage Temperature	-40 to 257°F [-40 to 125°C]
CONFORMITY	
RoHS	2011/65/EU
CE	EN 61326-1:2006

RESOLUTION	
SAMPLES PER SECOND (SPS)	mV/V RESOLUTION
10	16.6
100	15.6
200	13.0

LED INDICATORS	
Blinking Blue (10 Hz)	Module Auto-Calibration
Blinking Blue (1 Hz)	Module Normal Operation
Green	USB Power
Red	USB Data Link

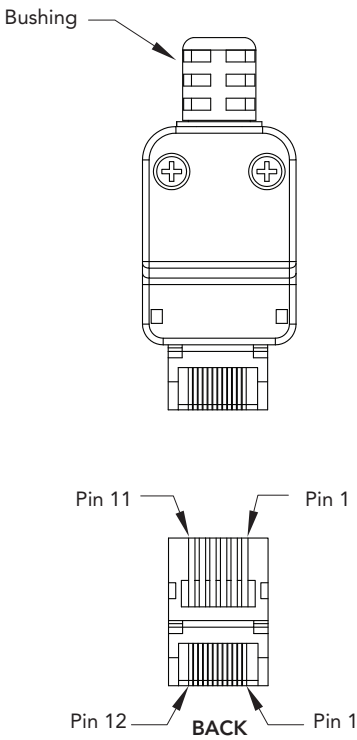
- ACCESSORIES**
- FUTEK's SENSIT™ Software** (FSH03189)  
14 Day Trial - Available to download on FUTEK website. A license is required, per seat, after 14 days to benefit the features such as data logging, graphing, etc. Trial version turns into basic read-out ONLY after 14 days and a product key is required to enable the features.

DIMENSIONS inches [mm]



BUSHING SIZES inches [mm]

0.16 [4.0]
0.18 [4.5]
0.20 [5.0]



HIROSE MALE (sensor side) ZCO940 item number FSH03320

PIN #	USB410
1	+SIGNAL
2	-SIGNAL
5	P1-LEADING PULSE
6	P2-LAGGING PULSE
9	N/A
10	N/A
11	VCC / +EXC
12	GND / -EXC/SHIELD <sup>1</sup>

<sup>1</sup> Use Y connection on pin 12 to make connecting the -EXCITATION and SHIELD easier.

Drawing Number: FI1381

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10 Thomas, Irvine, CA 92618 USA

Tel: (949) 465-0900

Fax: (949) 465-0905

[www.futek.com](http://www.futek.com)



RoHS



U.S. Manufacturer