



TYPE: DSCUSB



DSCUSB Strain Gauge Load Cell USB Module

Description

The DSCUSB is a compact, high performance digital signal conditioner with USB connectivity aimed at applications which require high-accuracy measurement repeatability. An option of a rugged metal enclosure makes the device suitable for all environments. Simply by plugging the device into a PC, data can be extracted from most strain gauge bridge input sensors and acquired data viewed using free downloadable software. This software also facilitates the selection of various parameters such as display resolution and sample rates. The DSCUSB can also be supplied as an OEM board for mounting into a separate enclosure or for integrating within another product.

No additional power supply is required. Although ideal for 1 to 1 interface the device can connect with multiple sensors with the use of a suitable hub. Available in ASCII protocol. Including the DSCUSB into load cell based applications enables the building of very high accuracy load cells, using the built in linearization.

LCM Systems can also supply PC based software packages, specially written to interface with DCELL based load cells and pressure transducers. Please contact our technical department to discuss your requirements.

Specification

Bridge excitation system	4 wire
Bridge excitation	4.5 to 5.25V DC (5V DC typical)
Bridge impedance	80 to 5000Ω
Bridge sensitivity	-3 to +3mV/V
Offset temperature stability	1 to 4ppm/°C
Gain temperature stability	3 to 5ppm/°C
Offset stability with time	35 to 160ppm of FR
Gain stability with time	300ppm of FR
Non linearity before linearisation	5 to 25ppm of FR
Internal resolution	16 million counts/divisions
Resolution @ 1Hz (noise stable) over 100s	200,000 counts/divisions
Resolution @ 10Hz (noise stable) over 100s	120,000 counts/divisions
Resolution @ 100Hz (noise stable) over 100s	50,000 counts/divisions
Resolution @ 500Hz (noise stable) over 100s	18,000 counts/divisions
Signal filtering	Dynamic recursive type - user programmable
Power supply voltage	4.25 to 5.5V (5V DC typical)
Average operational current (normal mode)	68 to 75mA (350Ω bridge)
Max output cable length	5 Metres
Operating temperature range	-40 to +85°C
Storage temperature range	-40 to +85°C
Humidity	0 to 95%RH
Environmental sealing	IP50
European EMC Directive	2004/108/EC
Low Voltage Directive	2006/95/EC

Available Options

- Strain gauge to USB converter cased (product code: DSCUSB)
- Uncased module (product code: DSCUSBOEM1)
- Uncased module with no field connectors (product code: DSCUSBOEM)
- DIN rail mounting kit for USB PCBs (Product code: DSCUSBIN)

Features

- Quick and easy connectivity via USB
- ASCII protocol
- Digital I/O
- High speed to 500 readings/second
- Real mV/V calibration
- Peak and trough recordings
- Very high stability
- Powered from USB port

Typical Applications

- High accuracy aircraft weighing
- Load cell calibration systems
- Force/displacement logging systems
- Portable weighing systems
- Tablet/PC integration

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Communications

The Load Cell to USB Adaptor will communicate as a simple serial device rather than a 'native' USB device. Once the device is plugged into a PC and the supplied drivers are installed, the device will appear as a Virtual Serial Port to the PC.

We can will also supply a driver for its own 'Instrument Explorer' software. Because each device, when plugged into a PC, creates an additional serial port, the total number of devices that can be attached to the PC may be limited by the communication software's ability to utilise these multiple ports i.e. an existing communication program may only support COM1 to COM4

Support Modules

The product is supplied with software to enable the configuration of the product. This is also available to download from LCM Systems website.

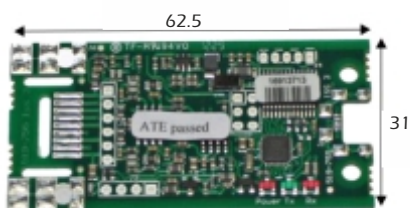
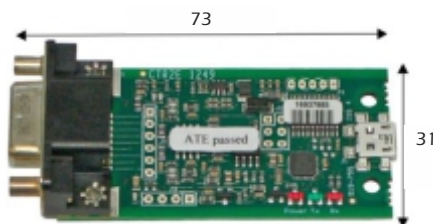
Dimensions

All dimensions are in mm



Converter cased version

Uncased Module



Uncased Module with no field connectors



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Due to continual product development, LCM Systems Ltd reserves the right to alter product specifications without prior notice.

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APPROVED

(unapproved if printed)