PROCTER & CHESTER (MEASUREMENTS) LTD

Features

- High stability providing superior performance.
- USB strain gauge interface – device appears as a virtual com port.
- Simple & easy to connect to your strain gauge sensor.
- Multiple devices can be used with one PC.
- Supplied with 1.5m USB to Micro USB lead.
- Free DSCUSB Toolkit software.
- Compatible with most load cells and sensors.
- Non-expert maintenance.
- ASCII protocol.
- Digital I/O.
- High speed to 100 readings per second in standard software mode, with the capability of 500 readings per second under PC control.
- Real mV/V calibration.
- Peak and trough recording.
- IP50 rated enclosure.
- Optional OEM PCB versions available.
- Optional temperature sensor module.
- Optional 4.5mV/V sensitivity.
- Optional potentiometer input – see **Page 3**.

Description

The DSCUSB is a load cell digitiser module. It is a compact, high performance strain gauge digital signal conditioner with USB connectivity aimed at applications which require high-accuracy measurement repeatability. Ideal for most strain gauge sensors including load, weight, force, torque, pressure and displacement. The device plugs into your PC where data can be acquired and manipulated by accompanying software.

A rugged ABS IP50 enclosure makes the DSCUSB suitable for all environments. Simply by plugging the DSCUSB into a PC, data can be extracted from most strain gauge bridge input sensors and acquired by software which allows data manipulation removing the need for amplifiers, filters and multimeters. No additional power supply is required as the power is drawn from the USB bus.

Although ideal for 1 to 1 interface, the DSCUSB, can connect with multiple sensors with the use of a suitable hub. The DSCUSB 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.

Typical applications for the DSCUSB digitiser module will be those requiring simple sensor connectivity in desktop settings such as test and measurement, R&D and laboratory environments.

An optional temperature sensor module (DTEMP) is available which will enable an advanced 5-point temperature compensation of measurements. The USB load cell signal converter is also available as OEM PCB modules.
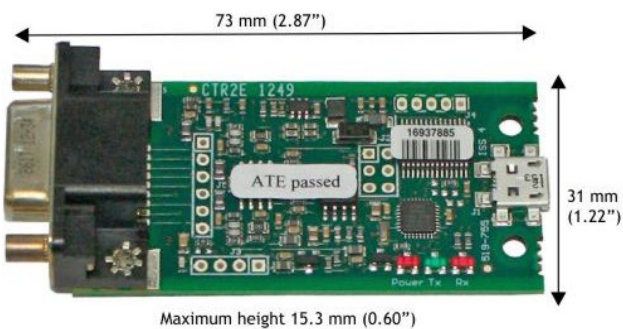
Typical Specification

PARAMETER	VALUE
Strain Gauge Measurement	4-Wire
Strain Gauge Excitation Voltage	5V DC
Strain Gauge Drive Capability	85Ω
Strain Gauge Sensitivity	3mV/V
Temperature Stability OFFSET	5ppm/°C
Temperature Stability GAIN	5ppm/°C
Non-Linearity BEFORE LINEARIZATION	25ppm/FR
Internal Resolution	16million counts/divisions
Resolution at 1Hz READINGS (NOISE STABLE) OVER 100s	200,000 counts/divisions
Resolution at 10Hz READINGS (NOISE STABLE) OVER 100s	120,000 counts/divisions

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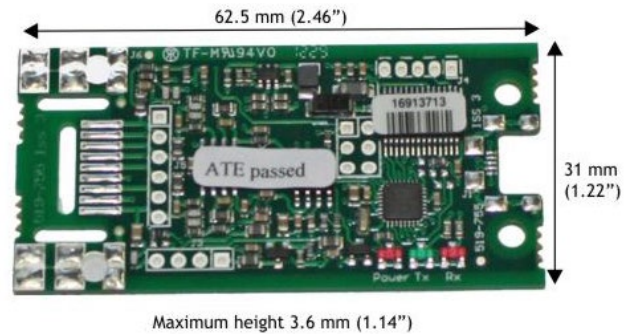| PARAMETER	VALUE
Resolution at 100Hz READINGS (NOISE STABLE) OVER 100s	50,000 counts/divisions
Power Supply VOLTAGE (USB)	5V DC
Power Supply CURRENT (350Ω BRIDGE)	68Ma
Output Cable Length MAXIMUM	5m
Data Transmission Rate	115.200kbps
Environmental Protection	IP50
Operating Temperature Range	-40 to +85°C
Storage Temperature Range	-40 to +85°C
Maximum Humidity	95% RH

Outline Dimensions in millimetres

20 mm (0.78")
51 mm (2")
71 mm (2.79")

DSCUSBOEM1

73 mm (2.87")
31 mm (1.22")
Maximum height 15.3 mm (0.60")

DSCUSBOEM

62.5 mm (2.46")
31 mm (1.22")
Maximum height 3.6 mm (1.14")

Ordering Codes

CODE	DESCRIPTION
DSCUSB	Standard DSCUSB cased digitiser module.
DSCUSB-A	DSCUSB module, cased, 4.5mV/V sensitivity.
DSCUSBOEM1	DSCUSB PCB – uncased.
DSCUSBOEM1A	DSCUSB PCB – uncased, 4.5mV/V sensitivity.
DSCUSBOEM	Uncased DSCUSB module without field connectors.
DSCUSB-DIN	DIN rail mounting kit.
DTEMP	Digital temperature sensor module for wiring to DSCUSB.

Disclaimer

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Features

- High precision potentiometer input.
- 7-point linearization.
- Supplied with 1.5m USB to Micro USB lead.
- Free DSCUSB Toolkit software.
- Non-expert maintenance.
- IP50 rated enclosure.
- Optional OEM PCB version available.

Description

The DSCUSB-PT is a compact, high-precision potentiometer digitiser module; converting a resistance based input (potentiometer) to a digital output. The DSCUSB-PT can be used to indicate position, rotation, and angle. Aimed at applications which require high accuracy.

Simply by plugging the device into a PC, data can be extracted from the potentiometer input to the DSCUSB-PT for a wide range of applications. This is achieved using the free DSCUSB Toolkit software, a simple configuration tool designed specifically for configuring DSCUSB modules. It allows configuration, calibration, data logging and parameter management.

The output is factory calibrated to give an output from between 0% and 100% but this can be scaled by the system integrator or the user to give engineering units instead.

Typical Specification

Where the specification differs from the standard DSCUSB module have been outlined in the table below.

PARAMETER	VALUE
Potentiometer Measurement	3-wire
Potentiometer Excitation Voltage	5V DC
Potentiometer Drive Capability MINIMUM	500Ω
Temperature Stability OFFSET (MAXIMUM)	4ppm/°C
Temperature Stability GAIN (MAXIMUM)	5ppm/°C
Non-Linearity BEFORE LINEARIZATION (MAXIMUM)	25ppm/FR
Internal Resolution	24million
Noise Free Resolution at 1Hz	500,000 counts/divisions
Power Supply VOLTAGE (USB)	5V DC
Power Supply CURRENT (500Ω POTENTIOMETER) MAXIMUM	75mA

Ordering Codes

CODE	DESCRIPTION
DSCUSB-PT	Potentiometer input DSCUSB module, cased.
DSCUSB-PTOEM1	DSCUSB PCB, potentiometer input, uncased.

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