

## USB Strain Gauge or Load Cell Digitiser Module

*Easy sensing with the DSCUSB portable USB digitiser for weight, pressure, force & torque*



### User benefits

- USB 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
- Free Instrument Explorer software provided
- Compatible with most load cells and sensors
- Non-expert maintenance
- Windows driver DLL's available

### Introduction

The DSCUSB is a compact, high performance strain gauge digital signal conditioner with USB connectivity aimed at applications which require high-accuracy measurement repeatability. 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 by software which allows data manipulation removing the need for amplifiers, filters & multimeters. 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.

### Specification at a glance

- Ability to communicate with multiple sensors
- ASCII protocol
- Digital I/O
- High speed to 500 readings/second
- Real mV/V calibration
- Peak & trough recording

### Ideal applications

- Laboratory testing
- Educational environments
- R&D
- Test & Measurement
- Bench top Research

## Specifications

### Hardware Specifications

Parameter	Min	Typ	Max	Units	Notes
Supply Voltage Range from USB Port	4.35	5	5.25	Volts	
Stand-by Current	-	100	500	uA	
Average Operational Current (normal mode)	-	70	80	mA	Note 1
Operating Temperature Range	-40	-	85	Deg C	
Storage Temperature Range	-40	-	85	Deg C	
Humidity	0		95		%RH

Notes: 1. When connected to a 350 Ohm Load Cell.

### Bridge Measurement

Measurement	Min	Typ	Max	Units
Strain Gauge Excitation System			4 wire	
Strain Gauge Excitation Voltage	4.5	5	5.25	VDC
Strain Gauge Drive Capability	80	-	5000	Ohms
Strain Gauge Sensitivity	-3	2.5	3	mV/V
Offset Temperature Stability		5	10	ppm/C
Gain Temperature Stability		30	50	ppm/C
Offset Stability with Time		35	160	ppm of FR (1)
Gain Stability with Time			300	ppm of FR (2)
Non Linearity before Linearization		5	25	ppm of FR
Internal Resolution		16 Million		Counts / Divs
Res @ 1Hz Readings (Noise Stable) over 100s		66,000		Counts / Divs
Res @ 10Hz Readings (Noise Stable) over 100s		40,000		Counts / Divs
Res @ 100Hz Readings (Noise Stable) over 100s		10,000		Counts / Divs
Signal Filter	Dynamic recursive type user programmable			

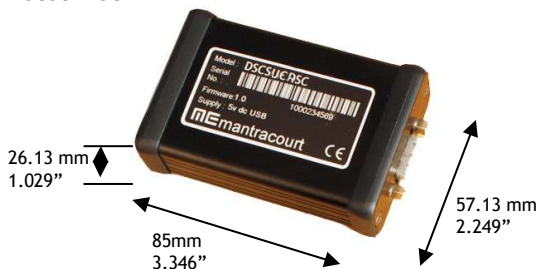
### CE & Environmental

Storage temperature - 40 to +85°C  
 Operating temperature - 40 to +85°C  
 Relative humidity 95% maximum non condensing

CE Environmental Approvals  
 European EMC Directive 2004/108/EC  
 Low Voltage Directive 2006/95/EC

### Mechanical Dimensions

#### DSCSUEASC



Case material: Extruded Aluminum 6063 & Polycarbonate Bezels

DSC USB Cased 85 x 57.13 x 26.13mm (3.3465 x 1.0287 x 2.2492") excluding connectors, with USB cable length 136 cm (4.462 feet).

Available in OEM package - see DSC Module Product Sheet for more information.

#### Options

DSC USB PCB 43 x 28 x 12mm PCB 43 x 28 x 12mm (1.693 x 1.102 x 0.472")  
 DSJ2 - PCB Module Junction PCB 82 x 60 x 20mm (3.228 x 2.362 x 0.787")



Designed, Manufactured  
 Supported in the UK



### Communications (USB)

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. Mantracourt 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

IESW Instrument Explorer Software

### Product Order Codes

DSCSUASC DSC Card Industrial Stab USB ASCII  
 DSCSUEASC DSC Card Ind Stab USB ASCII Enc  
 DSJ2 Junction Box for DSCSUASC

CE In the interests of continued product development, Mantracourt Electronics Limited reserves the right to alter product specifications without prior notice