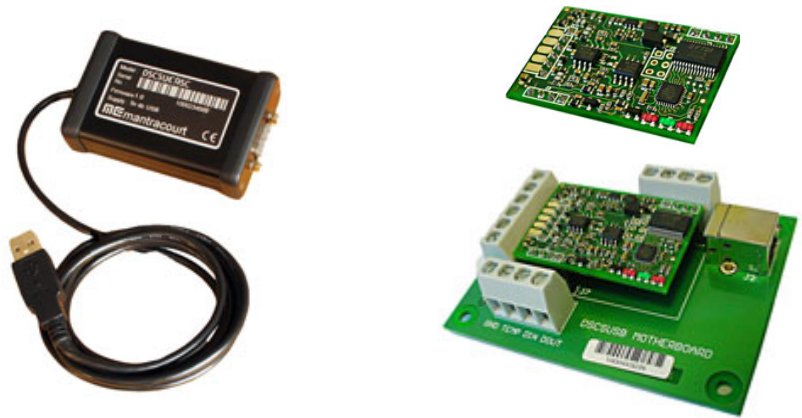


## USB Strain Gauge or Load Cell Digitiser Module

### Features

- Quick and easy connectivity via USB
- ASCII protocol
- Digital I/O
- High Speed to 500 readings/second
- Real mV/V calibration
- Peak & trough recordings



### Introduction

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

allows data manipulation.

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.

### Specifications

#### Hardware Specifications

Parameter	Min	Typical	Max	Units	Notes
Supply Voltage Range	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	

Note 1: When connected to a 350 Ohm load cell.

#### Bridge Measurement

Measurement	Min	Typical	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
Resolution @ 1Hz Readings (Noise Stable) over 100s		66,000		Counts / Divs
Resolution @ 10Hz Readings (Noise Stable) over 100s		40,000		Counts / Divs
Resolution @ 100Hz Readings (Noise Stable) over 100s		10,000		Counts / Divs
Signal Filter	Dynamic recursive type user programmable			

## 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

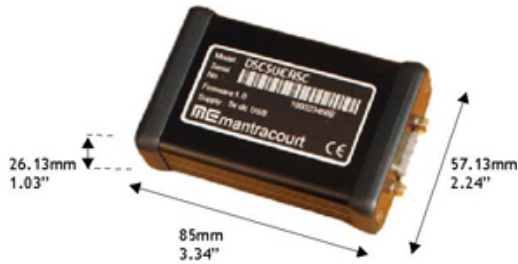
Instrument Explorer Software

## Product Order Codes

DSCSUEASC	DSC Industrial Digitiser ASCII protocol with enclosure
DSCSUASC	Industrial Stability USB with ASCII protocol
DSJ2	Junction PCB with Filed Connectivity for DSCSUASC
IESW	Instrument Explorer Software

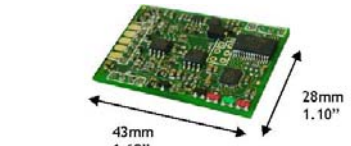
## Mechanical Dimensions

DSCSUEASC



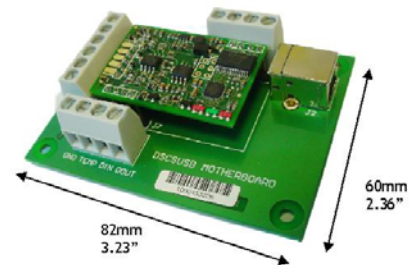
Cased 85 x 57.3 x 26.13mm (3.35 x 2.25 x 1.03")  
 excluding connectors, with USB cable length 136mm  
 (4.46 feet)  
 Case material: Extruded Aluminum 6063  
 Bezels: Polycarbonate

DSCSUASC



PCB 43 x 28 x 12mm (1.69 x 1.10 x 0.47")

DSJ2- Field Connectivity Module (photo shows DSCUSB fitted to DSJ2)



Junction PCB 82 x 60 x 20mm (3.23 x 2.36 x 0.79")

## CE & Environmental

Storage temperature	-40 to +85°C
Operating temperature	-40 to +85°C
Relative humidity	95% maximum non condensing
European EMC Directive	2004/108/EC
Low Voltage Directive	2006/95/EC



Designed, Manufactured  
& Supported in the UK



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