DSCUSB-PT

Digital Sensor Card USB – Potentiometer Input

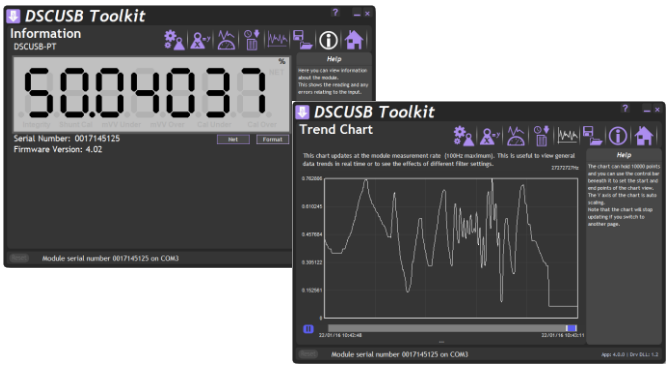
Introduction

The DSCUSB-PT is a compact, high-precision potentiometer input module; converting a resistance based input (potentiometer) to a digital output. Can be used with resistance based sensors 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 DSCUSB Toolkit software, which is a simple configuration tool designed specifically for configuring DSCUSB modules. It allows configuration, calibration, logging and parameter management of the modules.

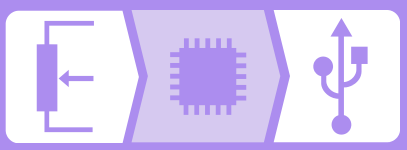
The output is factory calibrated to give an output from between 0% and 100% but this can be scaled by the system integrator or the user to give engineering units as well.

This free-standing module is fitted with 9-way 'D' type socket for potentiometer and optional temperature sensor connections. A micro USB socket accepts a USB lead with type 'A' connector at the PC end.



Product Features & Benefits

- **Quick Setup:**
  Simple USB plug and play device connects to a PC directly, allowing quick setup
- **Fast, Accurate Measurement:**
  Works with existing DSCUSB Toolkit software for quick and easy measurement
- **Superior Accuracy:**
  7 point linearization and optional temperature compensation
- **Intuitive Logging:**
  Log up to 24 DSCUSB devices using DSC 24 Channel Logging Software
- **Advanced Security:**
  OEM level configuration and calibration can be saved and restored for security of setup



Accessories

DSCUSB-PTOEM1
PCB version of DSCUSB-PT

DSC Toolkit
Toolkit software

24 Channel Logging
View and log up to 24 channels

Specifications

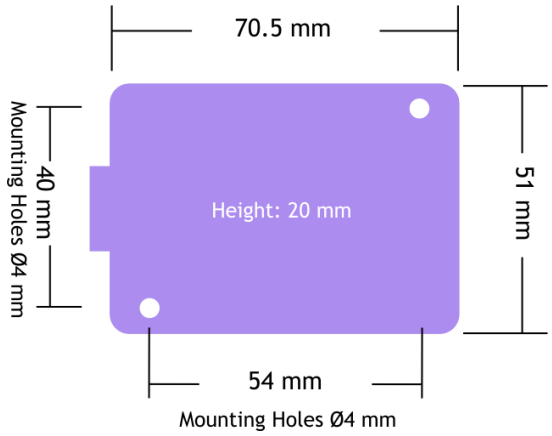
Measurement Specifications / Parameter	
Potentiometer Measurement	3 Wire
Potentiometer Excitation Voltage	5 VDC
Potentiometer Drive Capability (min)	500 Ohms
Offset Temperature Stability (max)	4 ppm / °C
Gain Temperature Stability (max)	5 ppm / °C
Non Linearity before Linearization (max)	25 ppm of FR
Internal Resolution / Bits	24 Million
Noise Free Resolution at 1 sample per second	500,000 Counts/divs

Electrical	
Power Supply Voltage (USB)	5 V dc
Power Supply Current (500 Ohm Potentiometer) MAX	75 mA

Environmental	
Operating temperature range	-40 to +85 °C
Storage temperature range	-40 to +85 °C
Maximum Humidity	95% RH
Protection	IP50

Dimensions	
Cased Version	70.5 x 51 x 20mm excluding 9-way 'D' type socket connector. 74.5 x 51 x 20mm including connector.

Mechanical



Electrical

Order Codes

DSCUSB-PT
Digital Sensor Card USB – Potentiometer Input

DSCUSB-PTOEM1
PCB Version of Digital Sensor Card USB – Potentiometer Input

Manual Reference: 517-184 and 517-185

Mantracourt Electronics Ltd The Drive, Farringdon Exeter, Devon, UK EX5 2JB

Tel: +44 (0)1395 232020
Email:info@mantracourt.com

mantracourt.com

DSCUSB

DSCUSB TOOLKIT SOFTWARE

EASY TO USE, INTUITIVE TOOLKIT SOFTWARE FOR SPEEDY AND PAINLESS SET-UP

- CONNECT IN SECONDS - with PC auto detection there's no scrolling through lists of product codes.
- INTUITIVE INTERFACE - you don't have to read a manual to get started. Our well-designed interface gives you highlighted options so you know what's click-able.
- LOGICAL - our Toolkits configure, calibrate and provide logging functionality.
- WE DO THE THINKING FOR YOU - our toolkits have useful help panels at each stage of the process to help you make the right choice
- USE ONE, USE THEM ALL - our icon based navigation is common to all Toolkits. If you're familiar with one Toolkit you'll quickly pick up the others.
- FREE - all of our software is freely available.

TAKE A TOUR

WHAT CAN IT DO?

The DSCUSB Toolkit software for Windows connects with the DSCUSB and DSCUSB-PT via a micro USB to USB lead. The Toolkit allows all aspects of the DSCUSB and DSCUSB-PT to be configured:

- Configure settings
- Calibrate in engineering units
- Save and restore settings to a file
- Log data to a CSV file
- View data on a chart
- Use as a large display

THE DASHBOARD

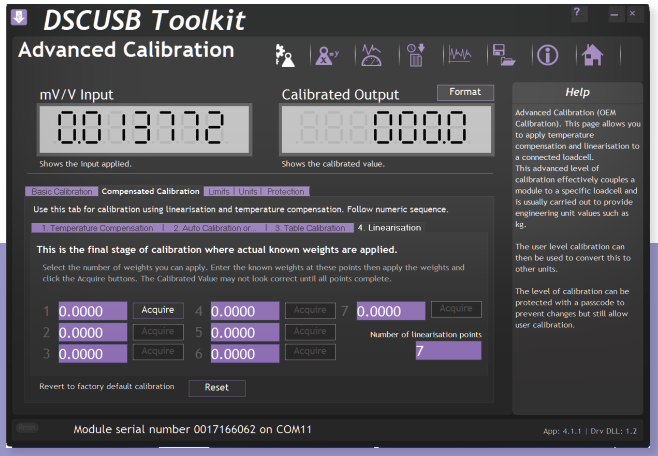
- Icon based intuitive navigation
- Help panels in 'plain English'
- Interactive elements highlighted purple

DOWNLOAD & TEST-DRIVE

Visit mantracourt.com

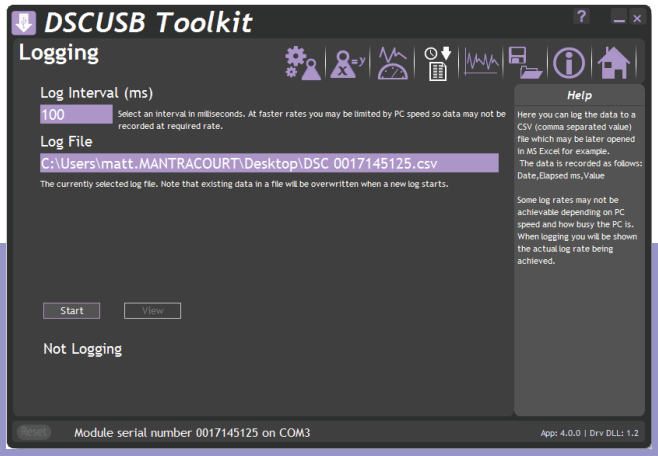
FUNCTIONALITY SCREEN SHOTS

CALIBRATION



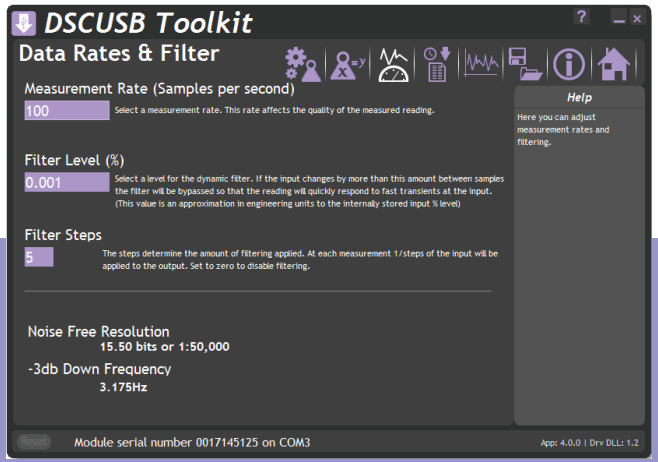
Linearised calibration in your chosen engineering units can be achieved by applying known inputs or entering values from a sensor calibration certificate. You can also calibrate the Shunt Calibration so an installed system will always give an output of 100 when Shunt Calibration is activated. This allows for an extremely fast check that your system is still operating correctly without having to disconnect the input sensor.

LOGGING



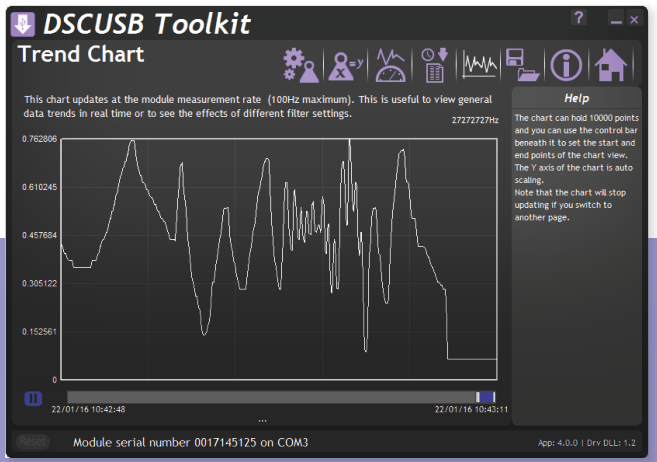
Log data to a CSV file at intervals of between 10 milliseconds and 32 seconds. This allows data to be logged at up to 100Hz and the resulting CSV files can then be analysed in Microsoft Excel or similar application.
The software will warn you if your specified logging rate is faster than the rate at which the module has been configured to generate results.

DATA RATES AND FILTER



Here you can configure how fast the module generates new results. The faster the new results are generated the lower the effective noise free resolution will become. The software will show you the expected noise free resolution achievable with your settings.
You can also set up dynamic filtering. You can set the amount of filtering to apply and also a threshold for an input change that can bypass the filter. This gives very fast reaction to step changes on the input yet still delivers filtered results. Use the real-time Trend Chart to see the results of your filter settings.

REAL TIME TREND CHART



Feature a real-time scrolling graphic display. The chart can hold up to 10,000 points and you can zoom and pan through the data. The chart is auto scaling and is ideal for looking at input signals to allow tuning the filters.