Dracal
TECHNOLOGIES

USB ADAPTER WITH 3-SCREW TERMINAL BLOCK FOR A 2/3 WIRE RTD PROBE — RTD223

DESCRIPTION

Designed to measure 100 ohm Pt100 RTD probes, this device provides accurate temperature measurements using a 2 or 3 wire sensor. The sensors are connected using a 3-screw terminal block. In 3-wire connection, the RTD223 will correct the measured value taking into account the errors introduced by the length of the probe cable. The compact USB-key form factor simplifies integration even in space-constrained applications. The *-CAL* option allows the instrument to be calibrated on up to 3 points for greater accuracy. The *VCP-* option allows the user to communicate with the instrument in virtual COM port mode.

APPLICATIONS

○ Research & development
○ Environmental chamber
○ Pre-certification
○ Server rooms
○ Building automation
○ Green house
○ Manufacturing
○ Engineering

INSTALLATION TIME
Less than 10 minutes

UNIQUE SERIAL NUMBER
Each unit is assigned a unique serial number allowing for traceability and certification

FREE DAQ SOFTWARE
Real-time data visualization and logging

DATA INTEGRATION
Command-line tools for direct data access and integration

OPTIONS
Virtual COM Port (VCP) communication protocol

3-point user calibration mechanism

ALSO AVAILABLE
Traceability certificates

SPECIFICATIONS			
Parameter	Condition	Value	Units
Temperature			
Unit operating range	Probe dependant	- 200 to 800	°C
ADC resolution	–	18	bits
Temperature resolution	Typ.	0.02	°C
Accuracy	Typ., at 25°C Excluding probe	±0.06	°C
Response time	t63%	Probe dependant	
Sensing element type	RTD	100	Ohms
Samples rate	Up to 3 SPS	250	mS
Factory calibrated	Individually[2]	Yes	–
Calibration value point	–	0.00	°C
PT100 probe available	Yes	See image below	–

| SPECIFICATIONS			
Parameter	Condition	Value	Units
Power supply			
Voltage	Powered through a USB port	5	V
Current Consumption	At 5V	≈19	mA
Mechanical			
Dimensions	See schema below	–	–
Colour	Black	–	
Weight	Without USB cable	25	g
Housing and USB cable			
Operating temperature	–	-20 to 70	°C
Operating relative humidity	Non-condensing	10 to 90	%RH
Material	ABS plastic		
IP rating	–	51[3]	–
System galvanic isolation	–	None	–
Connection	3-screw terminal block		
Wire Gauge	16 to 26		AWG
Miscellaneous			
Long-term stability	–	Yes	–
Temperature compensated	–	Yes	–

[2] Each sensor is individually calibrated by Dracal technologies and their correction coefficients are stored in each of them.
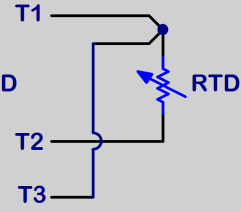
PROBE WIRING OPTIONS
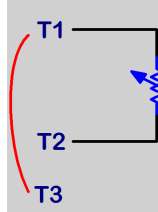
2-wire RTD   3-wire RTD   4-wire RTD
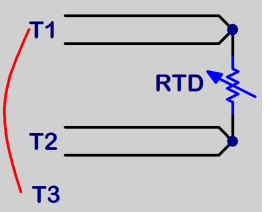
— :Connect with a wire

PRODUCT DIMENSIONS

2.51

1.00

.55
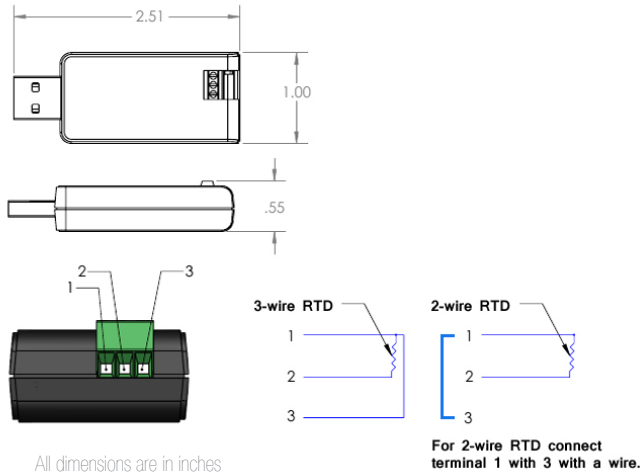
All dimensions are in inches

3-wire RTD

2-wire RTD

For 2-wire RTD connect terminal 1 with 3 with a wire.

AVAILABLE CHANNEL(S)
As displayed in our logging software

CHANNEL ID*	DESCRIPTION	TYPE	NATURE
00	PT100 Temperature sensor	Temperature	Real

* Channel Id as it appears in DracalView. Virtual channel Id differ in DracalView and dracal-usb-get.

ORDERING

PRODUCT(S)

PART NUMBER	OPTION	DESCRIPTION
601049	USB-RTD223	USB adapter with 3 screw connection block for a 2/3 wire RTD probe
608049	USB-RTD223-CAL	USB adapter with 3 screw connection block for a 2/3 wire RTD probe - calibratable
603049	VCP-RTD223	USB adapter with 3 screw connection block for a 2/3 wire RTD probe - with VCP mode
605049	VCP-RTD223-CAL	USB adapter with 3 screw connection block for a 2/3 wire RTD probe - calibratable - with VCP mode
601110	RTD-PT100_SIL	RTD probe for the RTD223

TRACEABILITY CERTIFICATE(S)

NT1WT	1-point temperature certificate for one (1) unit	
NT2WT	2-point temperature certificate for one (1) unit	
NT3WT	3-point temperature certificate for one (1) unit	

CAUTION: Please keep in mind that electromagnetic interference (EMI) may decrease the accuracy of the sensor. Avoid using this device near EMI sources such as motors, high voltage transformers and fluorescent tubes.

NOTE: Note that this product is not waterproof and requires protection if contact with water is possible.

TIP: Avoid installing the sensor in a location where strong vibration is likely to occur. Strong vibrations may cause slight inaccuracies in the reading.

TIP: As for any precision measurement equipment, it is advised to power on the unit at least 15 minutes before using it.

Warning: This product should not be used in applications where its failure may cause personal injury.

Note: While every effort has been made to ensure accuracy in this publication, no responsibility can be accepted for errors or omissions.

Note: Data may change without notification, and you are strongly advised to obtain copies of the most recently issued datasheet.