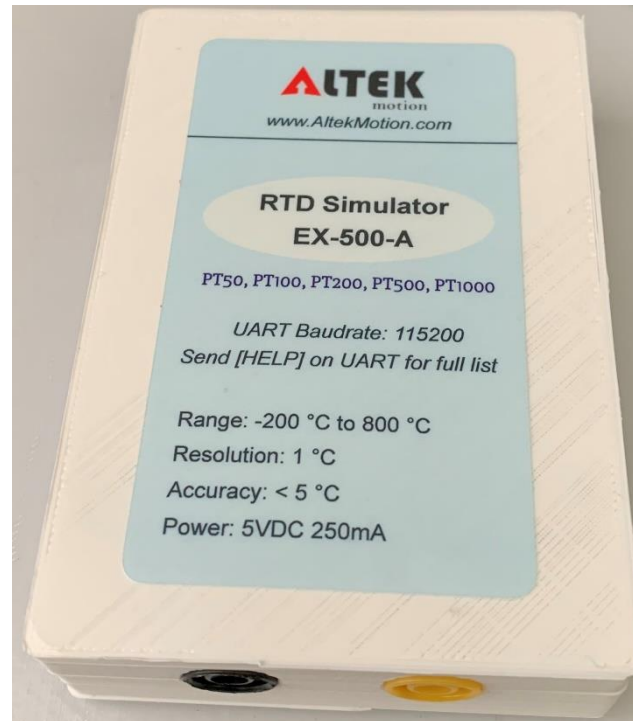# *RTD Simulator EX500-A*

User Manual

Safety Information

To avoid possible electric shock or personal injury:

 ➢ Do not apply more than 5.5VDC between any two jacks, or between any jack and earth ground.

 ➢ Do not operate the simulator if it is damaged.

Introduction

The EX500-A Simulator is a hand held device capable of simulating RTDs of different type and resistance in general.

The Simulator can be powered on from a standard USB port or a power supply of 5VDC (Power supply not included).

The simulator can be controlled from the USB port using a serial terminal software tool (e.g. TeraTerm® or RealTerm®).

RTD Simulation Specifications

Mode	Range	Accuracy °C
PT50	-200°C to +850°C	< ±5°C
PT100	-200°C to +850°C	< ±5°C
PT200	-200°C to +800°C	< ±5°C
PT500	-200°C to +700°C	< ±5°C
PT1000	-200°C to +650°C	< ±5°C

*10 ohm to 5V @ 1.5mA of excitation current

General Specifications

➢ Maximum voltage applied between any jack and earth ground: 6VDC
➢ Resolution: RTD 1°C/°F
➢ Storage temperature -40°C to 60°C
➢ Operating temperature: -10°C to 55°C
➢ Operating altitude: 3000 meters maximum
➢ Shock: Random 2g , 5Hz to 500Hz
➢ Safety: 1 meter drop test
➢ Power requirements: 5VDC ±0.5VDC @ < 250mA
➢ Size: 4" (H) x 2.7" (W) x 0.8" (D) (103mm (H) x 70mm (W) x 20mm (D))
➢ Weight: < 100 g

USB Port Interface

To interface with the simulator connect the USB cable to a computer and use your favorite serial terminal like TeraTerm® or RealTerm® and set the com port settings as below:

Baud Rate	115200
Parity	None
Data Bits	8
Stop Bits	1
Hardware Flow Control	None

The commands sent to the simulator are in ASCII format and based on the version of software running on the simulator the commands can vary. To get the full list of commands send [HELP] to the simulator. Below is the list of most common commands across all the firmware versions:

[HELP]	Get list of commands available
[STV|+128c]	Set the temperature to 128°C. For negative temperature change "+" to "-". Please note the sing +/- needs to be part of the sent packet.
[STV|-85c]	Set the temperature to -85°C
[GVN|c]	Get the software version number
[GTV|c]	Get current temperature value

Once the temperature command is received the simulator responds with an *ACK* or *NACK* in ASCII format.