

65 EAST WADSWORTH PARK DRIVE
DRAPER, UT 84020



CALIBRATION CERT. 1395.20

**CERTIFICATE OF CALIBRATION
FOR
CAMPBELL SCIENTIFIC
815 WEST 1800 NORTH
LOGAN, UT 84321**

Description: **CAMPBELL SCIENTIFIC, CR1000X, DATALOGGER**

Serial No: **11862**

Asset No: **11862**

SIMCO ID: **43169-663**

Dept: **Shipping**

PO No: **128468**

Calibration Date: 09/26/2019	Calibration Interval: 36 Months	Next Calibration Date: 09/26/2022
Arrival Condition: MEETS MANUFACTURER'S SPEC'S.		Service: CALIBRATED TO MFR SPEC,& CLEAN

Procedure: **MFR MAN REV. 0**

Temperature: **74°F**

Relative Humidity: **31%**

Standards Used:

<u>Manufacturer, Model</u>	<u>Description</u>	<u>SIMCO ID</u>	<u>Due Date</u>	<u>Certificate</u>
ONSET COMPUTER CORP, ZW-003	HOBO Data Node, Temperature/Humidity	43089-922	11/22/2020	8530117
FLUKE, 5700A	Multifunction Calibrator	43089-920	02/25/2020	8447416
FLUKE, 910	GPS Controlled Frequency Stand	43089-836	09/27/2019	8681302
AGILENT, 33250A	Funct/Arb Waveform Generator	43089-752	04/27/2020	8256148
HEWLETT-PACKARD, 3458A	DIGITAL MULTIMETER	43089-350	01/17/2020	8335299

Detail Of Work Performed:

The Expanded Uncertainty is computed at a 95% confidence level, coverage factor $k \approx 2$.

If a decision rule is inherent in the specification or standard, the prescribed decision rule was used; otherwise, where a statement of conformance is made, the determination of conformance is made solely on the measurement meeting the calibration limit, with no guard bands applied.

There are 1 Supplementary Data Sheet(s) attached.

Work performed by:
Tadd Pennepacker

Reviewed by:

SIMCO Electronics' quality management system conforms to ISO 9001:2015, ISO/IEC 17025:2017, and ANSI/NC SL Z540-1-1994. All calibrations are performed using internationally recognized standards traceable to the International System of Units (SI Units). Traceability is achieved through calibrations by the National Institute of Standards and Technology (NIST), other National Measurement Institutes (NMIs), or by using natural physical constants, intrinsic standards or ratio calibration techniques. The information shown on this certificate applies only to the instrument identified above and may not be reproduced, except in full, without prior written consent from SIMCO Electronics. There is no implied warranty that the instrument will maintain its specified tolerances during the calibration interval due to possible drift, environment, or other factors beyond our control. **This is an A2LA Accredited calibration.**

Dated: **09/26/2019**



MANUFACTURER:	Campbell Scientific	MODEL #:	CR1000X	CERT #:	8711623
DESCRIPTION:	Datalogger	PROCEDURE:	Mfr Manual		
COMMENTS:					

A measurement that exceeds the calibration limits is identified by an asterisk "*" in the Nominal Value column and the observation highlighted. A measurement that exceeds the guard band acceptance limits is identified by a hashtag "#" in the Nominal Value column and observation highlighted. Traceability to the International Systems of Units (SI) is achieved through the National Institute of Standards and Technology (NIST), other National Measurement Institutes, natural physical constants, intrinsic standards or ratio calibration techniques. Expanded Uncertainty has been reported as "Best Case" at the time of measurement. An Expanded Uncertainty followed by double asterisks "**" is not covered under the performing labs Scope of Accreditation, but included for completeness.

FUNCTION TESTED	NOMINAL VALUE		OBSERVATIONS		CALIBRATION LIMITS		UNITS	EXPANDED UNCERTAINTY (±)
			As Found	As Left	Minimum	Maximum		
Analog Input								
5000 mV Range								
Differential	5000.000	mV(dc)	5000.070	5000.070	4997.990	5002.010	mV(dc)	0.050
	-5000.000	mV(dc)	-5000.060	-5000.060	-5002.010	-4997.990	mV(dc)	0.050
	1000.000	mV(dc)	1000.020	1000.020	999.595	1000.405	mV(dc)	0.022
	200.000	mV(dc)	200.000	200.000	199.918	200.082	mV(dc)	0.0043
Single-Ended	5000.000	mV(dc)	5000.090	5000.090	4997.960	5002.040	mV(dc)	0.050
	-5000.000	mV(dc)	-5000.090	-5000.090	-5002.040	-4997.960	mV(dc)	0.050
	1000.000	mV(dc)	1000.020	1000.020	999.480	1000.520	mV(dc)	0.022
	200.000	mV(dc)	200.000	200.000	199.914	200.086	mV(dc)	0.0043
Excitation Output								
EX1	2500.000	mV(dc)	2500.310	2500.310	2496.300	2503.700	mV(dc)	0.020
	-2500.000	mV(dc)	-2500.051	-2500.051	-2503.700	-2496.300	mV(dc)	0.020
Period Averaging Function and Accuracy								
Error at 10kHz	0.0000	%	0.0000	0.0000	-0.0100	0.0100	%	0.000058
Real Time Clock								
	0.000	m/y	0.260	0.260	-3.000	3.000	m/y	0.52