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FLUKE®

71X Series

Process Calibrators

Calibration Manual

PN 686540
January 1998 Rev. 11, 3/12

LIMITED WARRANTY & LIMITATION OF LIABILITY

Each Fluke product is warranted to be free from defects in material and workmanship under normal use and service. The warranty period for the 712, 714, 715, 717 1G, 717 30G, 717 100G, 717 300G, 717 500G, 717 1000G, 717 1500G, 717 3000G , 717 5000G, 718 1G, 718 30G, 718 100G, 718 300G, and 718Ex Calibrators is three years and begins on the date of shipment. The warranty period for the 718 Pump assembly is one year and begins on the date of shipment. Parts, product repairs and services are warranted for 90 days. This warranty extends only to the original buyer or end-user customer of a Fluke authorized reseller, and does not apply to fuses, disposable batteries or to any product which, in Fluke's opinion, has been misused, altered, neglected or damaged by accident or abnormal conditions of operation or handling. Fluke warrants that software will operate substantially in accordance with its functional specifications for 90 days and that it has been properly recorded on non-defective media. Fluke does not warrant that software will be error free or operate without interruption.

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Fluke's warranty obligation is limited, at Fluke's option, to refund of the purchase price, free of charge repair, or replacement of a defective product which is returned to a Fluke authorized service center within the warranty period.

To obtain warranty service, contact your nearest Fluke authorized service center or send the product, with a description of the difficulty, postage and insurance prepaid (FOB Destination), to the nearest Fluke authorized service center. Fluke assumes no risk for damage in transit. Following warranty repair, the product will be returned to Buyer, transportation prepaid (FOB Destination). If Fluke determines that the failure was caused by misuse, alteration, accident or abnormal condition of operation or handling, Fluke will provide an estimate of repair costs and obtain authorization before commencing the work. Following repair, the product will be returned to the Buyer transportation prepaid and the Buyer will be billed for the repair and return transportation charges (FOB Shipping Point).

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Since some countries or states do not allow limitation of the term of an implied warranty, or exclusion or limitation of incidental or consequential damages, the limitations and exclusions of this warranty may not apply to every buyer. If any provision of this Warranty is held invalid or unenforceable by a court of competent jurisdiction, such holding will not affect the validity or enforceability of any other provision.

To locate an authorized service center, visit us on the World Wide Web at www.fluke.com or call Fluke using the phone numbers listed in this manual.

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Introduction

⚠⚠ Warning

The information provided in this document is for the use of qualified personnel only. Do not perform the verification tests or calibration procedures described in this manual unless you are qualified to do so.

The information in this manual deals with the 71X Series Process Calibrators (hereafter referred to as "the Calibrator" or the "71X Calibrator"). The 71X Series includes the 712,714, 715, 717 1G, 717 30G, 717 100G, 717-15G, 717 300G, 717 500G, 717 1000G, 717 1500G, 717 3000G, 717 5000G, 717-10000G, 718 1G, 718 30G, 718 100G, 718 300G, and the 718Ex 30G, 718Ex 100G, and the 719 models.

This manual provides the following information:

- Precautions and safety information
- Specifications
- Basic maintenance (cleaning, replacing the battery and fuses)
- Verification test procedures
- Calibration and calibration adjustment procedures
- Accessories and replaceable parts

How to Contact Fluke

To contact Fluke, call one of the following telephone numbers:

- Technical Support USA: 1-800-44-FLUKE (1-800-443-5853)
- Calibration/Repair USA: 1-888-99-FLUKE (1-888-993-5853)
- Canada: 1-800-36-FLUKE (1-800-363-5853)
- Europe: +31 402-675-200
- Japan: +81-3-6714-3114
- Singapore: +65-6799-5566
- Anywhere in the world: +1-425-446-5500

Or, visit Fluke's website at www.fluke.com.

To register your product, visit http://register.fluke.com.

To view, print, or download the latest manual supplement, visit http://us.fluke.com/usen/support/manuals.

Precautions and Safety Information

Use the Calibrator only as specified in this manual. Otherwise, the protection provided by the Calibrator may be impaired.

A Warning statement identifies conditions and actions that pose hazard(s) to the user; a Caution statement identifies conditions and actions that may damage the calibrator. The following Warning and Caution statement applies to all of the 71X Calibrators unless noted:

⚠⚠ Warning

To avoid possible electric shock or personal injury:

- **Use the 718Ex Calibrator only as described in the User Manual and the Fluke 718Ex CCD (Concept Control Drawing) or the protection provided by the calibrator may be impaired.**
- **Follow all equipment safety procedures.**
- **Inspect the Calibrator before use. Do not use it if it appears damaged.**
- **Check the test leads for continuity, damaged insulation, or exposed metal. Replace damaged test leads.**
- **When using probes, keep fingers behind the finger guards on the probes.**
- **Make sure the battery door is closed before using the Calibrator.**
- **Never apply more than 30.0 V between the input terminals, or between any terminal and earth ground.**
- **Applying more than 30.0 V to the input terminals invalidates the 718Ex Calibrator's Ex Approval and may result in permanent damage to the unit so it can no longer be used.**
- **Use the proper terminals, mode, and range for the measuring or sourcing application.**
- **When making connections, connect the COM test probe before the live test probe. When disconnecting, disconnect the live probe before the COM probe.**
- **Never use the 718Ex Calibrator with the red holster removed.**
- **Never open the 718Ex Calibrator case. Opening the case invalidates the Calibrator's Ex Approval.**
- **Replace the battery as soon as the + (low battery) symbol appears to avoid false readings that can lead to electric shock. Remove the 718Ex Calibrator from the Ex-hazardous area before opening the battery door.**
- **Use only type 9 V batteries, properly installed in the meter case, to power the meter. For the 718Ex, refer to "718Ex Approved Batteries".**

- **Remove test leads from the Calibrator before opening the battery door.**
- **When servicing the Calibrator, use only specified replacement parts.**
- **Do not allow water inside the case.**
- **When using the Calibrator's internal pressure sensor, do not connect a pressure module at the Calibrator to avoid misleading readings. If both a pressure module and the internal pressure sensor are connected, the Calibrator displays ONLY the pressure module measurement. To avoid misleading readings, disconnect the pressure module connector at the Calibrator.**
- **Remove test leads or attached thermocouple miniplug (714 only) from the calibrator before opening the battery door.**
- **Do not operate the calibrator around explosive gas, vapor or dust.**
- **717, 718, 719, and 718Ex only: To avoid a violent release of pressure in a pressurized system, shut off the valve and slowly bleed off the pressure before you attach or detach the calibrator pressure fitting to the pressure line.**
- **For 718 (non-Ex) and 719 only: Use only two 9 V batteries, properly installed in the calibrator case, to power the calibrator.**
- **For 717 and 718: Turn off circuit power before connecting the calibrator mA and COM terminals in the circuit. Place calibrator in series with the circuit.**
- **Do not use in a damp or wet environment.**

⚠Caution

- **To prevent damage to the unit under test, be sure the Calibrator is in the correct mode before connecting the test leads.**
- **The 71X Series Calibrators contain parts that can be damaged by static discharge. If you open the case, follow the standard practices for handling static sensitive devices. Refer to "Static Awareness".**
- **Models, 717, 718, and 719 only: To avoid mechanically damaging the calibrator, do not apply torque between the pressure fitting and the calibrator case. See Figure 1 for the proper use of tools.**

- **To avoid overpressure damage, do not apply pressure that exceeds limits listed in the Users Manual for the specific product.**
- **717, 718, and 719 only: To avoid corrosion in the pressure sensor, use the calibrator only with media compatible with glass, ceramic, silicon, RTV, nitrile, (Buna -N) type 303 stainless steel, and nickel.**
- **718, 719 and 718Ex only: To avoid damage to the pump, use with dry air and non-corrosive gases only. Use of the optional Fluke 700-ILF In-Line Filter may help isolate the pump from contaminates.**

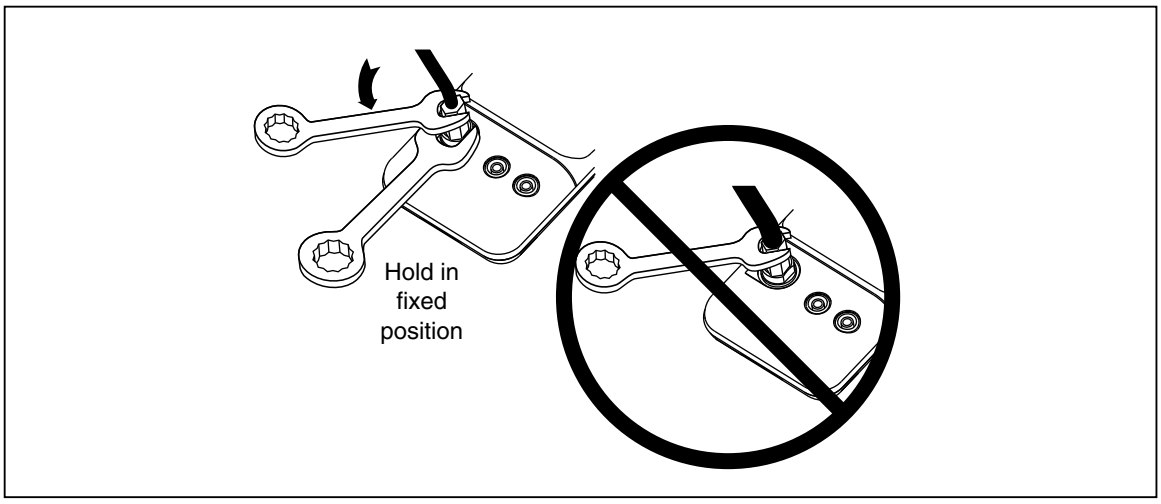

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Figure 1. Proper Use of Tools (717, 718, and 718Ex Models)

Explanation of International Symbols

The following symbols are used on the calibrator or in this calibration manual. Table 1 explains their meaning.

Table 1. International Symbols

Symbol	Meaning
	Power ON/OFF
	Earth ground
	Fuse
	Battery
	Hazardous Voltage
	Refer to the instrument instruction sheet or Users Manual for information about this feature
	Double insulated
	Conforms to relevant Canadian and US Standards.
	Pressure
	Conforms to European Union directives
	Conforms to ATEX requirements.
	Do not dispose of this product as unsorted municipal waste. Go to Fluke's website for recycling information.
	Conforms to relevant Australian standards.

Specifications

Specifications for the 71X Calibrators are based on a one-year calibration cycle and apply for ambient temperatures from + 18 °C to + 28 °C unless stated otherwise. “Counts” are the number of increments or decrements of the least significant digit. General specifications for all models are in Table 2.

Table 2. General Specifications

Maximum voltage applied between any terminal and earth ground or between any two terminals:	30 V
Storage temperature:	712: -20 °C to 60 °C, 718Ex: -40 °C to 71 °C, 719: -30 °C to 60 °C All other models: -40 °C to 60 °C
(718Ex) Pressure Sensor Media:	Non-corrosive gasses only
Operating temperature:	-10 °C to 55 °C
Operating altitude:	3000 meters maximum
Relative humidity:	95 % up to 30 °C 75 % up to 40 °C 45 % up to 50 °C 35 % up to 55 °C
Vibration:	Random 2 g, 5 Hz to 500 Hz
Shock:	1 meter drop test
Safety: 712, 714, 715, 717	Certified as compliant to CAN/CSA C22.2 No. 1010.1:1992 NRTL Complies with ANSI/ISA S82.01-1994
Safety: 718	Certified as compliant to CAN/CSA C22.2 No. 1010.2:1995 Complies with ANSI/ISA S82.01-1995
Safety: 718Ex	Certified as compliant to CAN/CSA C22.2 No. 1010.2:1995 Complies with ANSI/ISA S82.01-1995. Complies with IEC 61010-1-95 CAT I, 30 V; • CE 0344 Ex II 1 G Ex ia IIC T4 **KEMA 04ATEX1061 X** • C SP US **LR110460** Class I Div. 1 Groups A-D T4 AEx ia IIC T4 • Ta = -10 °C… +55 °C • CE: Complies with EN61010-1 and EN61326
719	Complies with EN/IEC 61010-1 2nd ed., CSA-C22.0 No. 61010-1-04
Power requirements: 712, 714, 715, 717	Single 9 V battery (ANSI/NEDA 1604A or IEC 6LR61)
Power requirements: 718	Two 9 V batteries (ANSI/NEDA 1604A or IEC 6LR61)
Power requirements: 718Ex	See “718Ex Approved Batteries”.
Size: 712, 714, 715, 717	34.9 mm H x 87 mm W x 187 mm L; With holster and Flex-Stand: 52 mm H x 98 mm W x 201 mm L
Size: 718, 718Ex, 719	60 mm H x 87 mm W x 210 mm L; With holster: 66 mm H x 94 mm W x 216 mm L
Weight: 712 714 715 717 30G, 717 100G 718 30G and 718 100G and 718Ex 30G and 718Ex 100G 719	 337 g; With holster and Flex-Stand: 587 g 332 g; With holster and Flex-Stand: 584 g 349 g; With holster and Flex-Stand: 601 g 369 g; With holster and Flex-Stand: 624 g 737 g; With holster: 992G 912 g; With holster

712 Specifications

712 Calibrator specifications vary based on the version of the instrument. To display the firmware version for your instrument, start with the 712 off, push and hold ▼, then push the power button. Find the section heading below for the displayed version and use the specification tables in that section to test and calibrate the instrument.

Firmware V1.1 and Earlier

Table 3. 712 Supported RTD Types

RTD Type	Temperature Range and Resolution	Allowable Excitation[1]
	°C	mA
Ni 120	-80.0 to 260.0	0.15 to 2.00
Pt 100 385	-200.0 to 800.0	0.15 to 2.00
Pt 200 385	-200.0 to 630.0	0.15 to 2.00
Pt 500 385	-200.0 to 630.0	0.05 to 0.80
Pt 1000 385	-200.0 to 630.0	0.05 to 0.40
Pt 100 392	-200.0 to 630.0	0.15 to 2.00
Pt 100 JIS	-200.0 to 630.0	0.15 to 2.00
	Range and Resolution for Ohms Simulate and Measure	
R[2]	15.0 Ω to 400.0 Ω	0.15 to 2.00
R	400.0 Ω to 1500.0 Ω	0.05 to 0.80
R	1500.0 Ω to 3200.0 Ω	0.05 to 0.40

Addresses pulsed transmitters and PICs with pulses ≥ 100 ms.

1: This column is for simulate mode only. It shows the allowable excitation current from an ohmmeter or RTD measurement device connected to the calibrator.
2: The R annunciator signifies “resistance,” not an RTD type. Select it the same way as an RTD type.

Resolution

RTD: 0.1 °C
Ohms: 0.1 Ω

Temperature Coefficient

0.005 % of ohms range per °C for temperature ranges –10 °C to 18 °C and 28 °C to 55 °C. Ohms ranges are 400 Ω, 1.5 kΩ, and 3.2 kΩ.

Table 4. 712 RTD and Ohms Simulation

Ohms Range	Excitation Current from Measurement Device	Accuracy, ±Ω
15 Ω to 400 Ω	0.15 mA to 0.5 mA	0.15
15 Ω to 400 Ω	0.5 mA to 2 mA	0.1
400 Ω to 1.5 kΩ	0.05 mA to 0.8 mA	0.5
1.5 kΩ to 3.2 kΩ	0.05 mA to 0.4 mA	1
Maximum input voltage: 30 V		

Table 5. 712 RTD and Ohms Measurement

Ohms Range	Accuracy, Four-Wire ±Ω
15 Ω to 400 Ω	0.1
400 Ω to 1.5 kΩ	0.5
1.5 kΩ to 3.2 kΩ	1
Maximum input voltage: 30 V Excitation current from 712: 0.3 mA	

Firmware V1.2 through V1.9

Table 6. RTD Specifications

RTD Type	Range ˚C (˚F)	Accuracy (˚C)			Allowable Excitation (mA)
		Input		Output	
		4-Wire	2-Wire & 3-Wire		
Ni 120	-80.0 to 260.0 (-112.0 to 500.0)	0.2	0.3	0.2	0.1 to 3.0
Pt 100 385	-200.0 to 800.0 (-328.0 to 1472.0)	0.33	0.5	0.33	0.1 to 3.0
Pt 200 385	-200.0 to 250.0 (-328.0 to 482.0) 250.0 to 630.0 (482.0 to 1166.0)	0.2 0.8	0.3 1.6	0.2 0.8	0.1 to 3.0
Pt 500 385	-200.0 to 500.0 (-328.0 to 932.0) 500.0 to 630.0 (932.0 to 1166.0)	0.3 0.4	0.6 0.9	0.3 0.4	0.05 to 0.8
Pt 1000 385	-200.0 to 100.0 (-328.0 to 212.0) 100.0 to 630.0 (212.0 to 1166.0)	0.2 0.2	0.4 0.5	0.2 0.2	0.05 to 0.4
Pt 100 392 (3926)	-200.0 to 630.0 (-328.0 to 1166.0)	0.3	0.5	0.3	0.1 to 3.0
Pt 100 JIS (3916)	-200.0 to 630.0 (-328.0 to 1166.0)	0.3	0.5	0.3	0.1 to 3.0
Addresses pulsed transmitters and PLCs with pulses as short as 5 ms. Allowable Excitation is for Output mode only. It shows the allowable excitation current from an ohmmeter or RTD measurement device connected to the calibrator. Excitation current from 712: 0.2 mA. Maximum input voltage: 30 V					

Table 7. Ohms Specifications

Ohms Range	Input Accuracy 4-Wire ±Ω	Output Accuracy ±Ω	Allowable Excitation (mA)
0 Ω to 400 Ω	0.1	0.15	0.1 to 0.5
		0.1	0.5 to 3.0
400 Ω to 1.5 kΩ	0.5	0.5	0.05 to 0.8
1.5 kΩ to 3.2 kΩ	1	1	0.05 to 0.4
Allowable Excitation is for Output mode only. It shows the allowable excitation current from an ohmmeter or RTD measurement device connected to the calibrator. Excitation current from 712: 0.2 mA. Maximum input voltage: 30 V			

Resolution

RTD: 0.1 °C
Ohms: 0.1 Ω
Rev 1.3 or Later: < 400 Ω 0.01 Ω
> 400 Ω 0.1 Ω

Temperature Coefficient

0.005 % of ohms range per °C for temperature ranges –10 °C to 18 °C and 28 °C to 55 °C. Ohms ranges are 400 Ω, 1.5 kΩ, and 3.2 kΩ.

Firmware V2.0 and Later

Table 8. RTD Specifications

RTD Type	Range ˚C	Accuracy (˚C) *			Allowable Excitation (mA)
		Input		Source	
		4-Wire	2-Wire & 3-Wire		
Ni 120	-80.0 to 260.0	0.20	0.25	0.2	0.1 to 3.0
Pt 100 385	-200.0 to 100.0	0.20	0.28	0.2	0.1 to 3.0
	100.0 to 300.0	0.30	0.40	0.3	
	300.0 to 600.0	0.40	0.52	0.4	
	600.0 to 800.0	0.50	0.65	0.5	
Pt 200 385	-200.0 to 100.0	0.80	1.00	0.8	0.05 to 0.8
	100.0 to 300.0	0.90	1.15	0.9	
	300.0 to 630.0	1.00	1.20	1.0	
Pt 500 385	-200.0 to 100.0	0.40	0.60	0.4	0.05 to 0.8
	100.0 to 300.0	0.50	0.75	0.5	
	300.0 to 630.0	0.60	0.90	0.6	

Table 8. RTD Specifications (cont.)

RTD Type	Range ˚C	Accuracy (˚C) *			Allowable Excitation (mA)
		Input		Source	
		4-Wire	2-Wire & 3-Wire		
Pt 1000 385	-200.0 to 100.0	0.20	0.25	0.2	0.05 to 0.4
	100.0 to 300.0	0.30	0.40	0.3	
	300.0 to 630.0	0.40	0.52	0.4	
Pt 100 392 (3926)	-200.0 to 100.0	0.20	0.28	0.2	0.1 to 3.0
	100.0 to 300.0	0.30	0.40	0.3	
	300.0 TO 630.0	0.40	0.52	0.4	
Pt 100 JIS 3916	-200.0 to 100.0	0.20	0.28	0.2	0.1 to 3.0
	100.0 to 300.0	0.30	0.40	0.3	
	300.0 to 630.0	0.40	0.52	0.4	
Addresses pulsed transmitters and PLCs with pulses as short as 5 ms. Excitation current from 712: 0.2 mA. Maximum input voltage: 30 V *2-wire: Does not include lead resistance 3-wire: Assumes matched leads					

Table 9. Ohms Measurement Specifications

Ohms Range	Accuracy *	
	4-Wire	2- and 3-wire
0 Ω to 400 Ω	0.025 % ±0.05 Ω	0.025 % ±0.1 Ω
400 Ω to 4000 Ω	0.025 % ±0.05 Ω	0.025 % ±0.55 Ω
Excitation current: 0.2 mA. Maximum input voltage: 30 V *2-wire: Does not include lead resistance 3-wire: Assumes matched leads		

Table 10. Ohms Source Specifications

Ohms Range	Excitation Current from Measurement Device	Accuracy
5 to 400 Ω	0.1 to 0.5 mA	0.025 % ±0.1 Ω
5 to 400 Ω	0.5 to 3.0 mA	0.025 % ±0.05 Ω
400 to 1500 Ω	0.05 to 0.8 mA	0.025 % ±0.5 Ω
1500 to 4000 Ω	0.05 to 0.4 mA	0.025 % ±0.5 Ω

Resolution

RTD: 0.1 °C
Ohms: 0.1 Ω
Rev 1.3 or Later: < 400 Ω 0.01 Ω
> 400 Ω 0.1 Ω

Temperature Coefficient

0.005 % of ohms range per °C for temperature ranges –10 °C to 18 °C and 28 °C to 55 °C. Ohms ranges are 400 Ω, 1.5 kΩ, and 4.0 kΩ.

714 Specifications

714 Calibrator specifications vary based on the version of the instrument. To display the firmware version for your instrument, start with the 714 off, push and hold ▼, then push the power button. Find the section heading below for the displayed version and use the specification tables in that section to test and calibrate the instrument.

Firmware Earlier than v2.0

Table 11. 714 Temperature Measure and Thermocouple Simulate

TC Type	Resolution	Error	Reference Junction Error
J, K, T, E, L, U	0.1 °C	±(0.3 °C + 10 µV)	±0.2 °C
B, R, S	1 °C	±(0.3 °C + 10 µV)	±0.2 °C
Maximum input voltage: 30 V Temperature Coefficient: 0.05 x specified accuracy per °C for temperature ranges – 10 °C to 18 °C and 28 °C to 55 °C			

Table 12. 714 Millivolt Measure and Source

Range	Resolution	Accuracy
-10 mV to 75 mV	0.01 mV	±(0.025 % of range (75 mV) + 1 count)
Maximum input voltage: 30 V		

Firmware V2.0 and Later

Table 13. 714 Temperature Measure and Thermocouple Simulate

TC Type	Range °C	Accuracy °C *
J	-210.0 to 0.0	0.6
	0.0 to 800.0	0.4
	800.0 to 1200.0	0.5
K	-200.0 to 0.0	0.8
	0.0 to 1000.0	0.5
	1000.0 to 1372.0	0.7
T	-250.0 to 0.0	0.8
	0.0 to 400.0	0.4
E	-250.0 to -100.0	0.8
	-100.0 to 1000.0	0.4
R	-20.0 to 0.0	2.0
	0.0 to 1787.0	1.4
S	-20.0 to 0.0	2.0
	0.0 to 1767.0	1.4
B	600.0 to 800.0	1.4
	800.0 to 1000.0	1.5
	1000.0 to 1820.0	1.7
L	-200.0 to 0.0	0.45
	0.0 to 900.0	0.4
U	-200.0 to 0.0	0.7
	0.0 to 600.0	0.45
Maximum input voltage: 30 V * Includes 0.2 °C cold junction compensation (CJC) error		

Table 14. 714 Millivolt Measure and Source

Range	Resolution	Accuracy
-10 mV to 75 mV	0.001 mV	0.015 % ± 10 µV
Maximum input voltage: 30 V Maximum source current is 1.0 mA		

715 Specifications

715 Calibrator specifications vary based on the version of the instrument. To display the firmware version for your instrument, start with the 715 off, push and hold ▼, then push the power button. Find the section heading below for the displayed version and use the specification tables in that section to test and calibrate the instrument.

Firmware Earlier than V2.0

Table 15. 715 DC V Input and Output

Range	Resolution	Accuracy, ±(% of Reading + Counts)
100 mV	0.01 mV	0.02 % + 2
10 V	0.001 V	0.02 % + 2
Input impedance: 2 MΩ (nominal), < 100 pF Overvoltage protection: 30 V Voltage drive capability: 1 mA		

Table 16. 715 DC mA Input and Output

Range	Resolution	Accuracy, ±(% of Reading + Counts)
24 mA	0.001 mA	0.02 % + 2
Overload protection: 125 mA, 250 V fast acting fuse mA Output: 0 % = 4 mA, 100 % = 20 mA		

Temperature Coefficient

0.005 % of ohms range per °C for temperature ranges – 10 °C to 18 °C and 28 °C to 55 °C

Source mode

Compliance: 1000 Ω at 20 mA for battery voltage ≥ 6.8 V (700 Ω at 20 mA for battery voltage 5.8 to 6.8 V)

Simulate mode

External loop voltage requirement: 24 V nominal, 30 V maximum, 12 V minimum

Loop Power

24 V ±10 %

Firmware 2.0 and Later

Table 17. 715 DC V Input and Output

Range	Resolution	Accuracy, ±(% of Reading + Counts)
200 mV	0.01 mV	0.015 % + 2
20 V output	0.001 V	0.01 % + 2
25 V input		
Input impedance: 1 MΩ (nominal), < 100 pF Overvoltage protection: fuseless Voltage drive capability: 1 mA		

Table 18. 715 DC mA Input and Output

Range	Resolution	Accuracy, ±(% of Reading + Counts)
24 mA	0.001 mA	0.01 % + 2
Overload protection: fuseless		

Temperature Coefficient

0.005 % of ohms range per °C for temperature ranges – 10 °C to 18 °C and 28 °C to 55 °C

Source mode

Compliance: 1000 Ω at 20 mA for battery voltage ≥ 6.8 V (700 Ω at 20 mA for battery voltage 5.8 to 6.8 V)

Simulate mode

External loop voltage requirement: 24 V nominal, 30 V maximum, 12 V minimum

Loop Power

24 V Nominal

717 Specifications

Accuracy is specified for 1 year after calibration at operation temperatures of -10 °C to + 55 °C. To show the firmware version, start with the unit off and push and hold the lower center button, it will be MAX or SWITCH TEST, then push ⓘ.

Pressure

Table 19. 717 Pressure Specifications

Version 1.2 or Lower				
Model	**Range SI**	**Range Metric**	**Max SI**	**Max Metric**
717-30 G	(0 to 30) PSI	0 to 206.85 kPa	90 PSI	620 kPa
Version 1.3 to 3.9				
717-1G	(-1 to 1) PSI	(-7 to 7) kPa	5 PSI	34.5 kPa
717-30G	(-12 to 30) PSI	(-83 to 207) kPa	60 PSI	413 kPa
717-100G	(-12 to 100) PSI	(-83 to 690) kPa	200 PSI	1379 kPa or 1.4 mPa
717-300G	(-12 to 300) PSI	(-83 to 2068) kPa or 2.1 mPa	375 PSI	2586 kPa or 2.6 mPa
717-500G	(0 to 500) PSI	3447 kPa or 3.4 mPa	1000 PSI	6895 kPa or 6.9 mPa
717-1000G	(0-1000) PSI	6895 kPa or 6.9 mPa	2000 PSI	13790 kPa or 13.8 mPa
717-1500G	(0-1500) PSI	10342 kPa or 10.3 mPa	3000 PSI	20684 kPa or 20.7 mPa
717-3000G	(0-3000) PSI	20684 kpa or 20.7 mPa	6000 PSI	41369 kPa or 41.4 mPa
717-5000G	(0-5000) PSI	34474 kPa or 34.5 mPa	10000 PSI	68948 kPa or 69 mPa
Accuracy: Pressure Accuracy is ±0.05 % of positive range 18 °C to 28 °C. **Temperature coefficient:** 0.01 % of range per °C for temperature ranges of between 10 °C to 18 °C and 28 °C to 55 °C.				
Version 4.0 or Higher				
Model	**Range**	**Max**	**Accuracy [1]**	
			6 month	**1 year**
717 1G	-1 to 1 PSI	5 PSI	0.050 %	0.050 %
	-7 to 7 kPa	34.5 kPa		
717 15G	-12 to 15 PSI	30 PSI	0.025 %	0.035 %
	-83 to 103 kPa	207 kPa		
717 30G	-12 to 30 PSI	60 PSI	0.025 %	0.035 %
	-83 to 207 kPa	413 kPa		
717 100G	-12 to 100 PSI	200 PSI	0.025 %	0.035 %
	-83 to 690 kPa	1.4 mPa		
717 300G	-12 to 300 PSI	375 PSI	0.035 %	0.050 %
	-83 to 2.1 mPa	2.6 mPa		
717 500G	0 to 500 PSI	1000 PSI	0.025 %	0.035 %
	0 to 3.4 mPa	6.9 mPa		