NVLAP
CALIBRATION
NVLAP LAB CODE 105016-0

FLUKE Calibration

Certificate of Calibration
Fluke Park Laboratory

Certificate Number:	F9137031		
Status:	As-Left	**Date of Calibration:**	29 Sep 2022
		Date Due:	
Manufacturer:	Fluke	**Temperature:**	20.0 to 26.0 °C
Model:	8846A	**Relative Humidity:**	20 to 70 %RH
Serial Number:	5934011	**Pressure:**	95 to 103 kPa
Options:		**Issue Date:**	29 Sep 2022
Description:	Precision Multimeter		
Procedure:	Teamcenter D1120982 Rev 2		

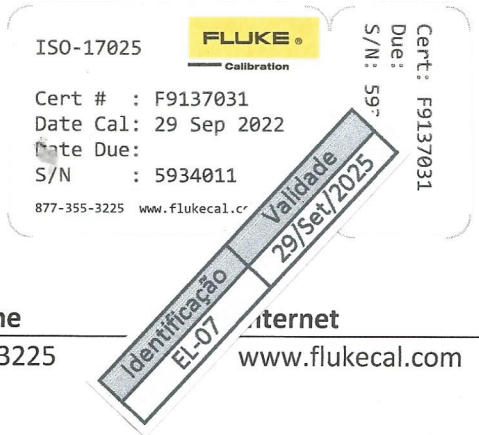
Customer:	FLUKE DO BRASIL LTDA
Location:	BRAZIL
PO Number:	000070-ESPECIAL
RMA/SO Number:	000070-ESPECIAL

This calibration is traceable to the International System of Units (SI) through recognized national metrology institutes (NIST, NRC, PTB, NPL, etc.), ratiometric techniques, or natural physical constants and is in compliance with ISO/IEC 17025:2017. Calibration certificates without identification of the authorizing person are not valid. This certificate applies to only the item identified and shall not be reproduced except in full, without the specific written approval by Fluke Corporation. The calibration interval (date due) is the responsibility of the end user.

This certificate of calibration may contain data that is not covered by the Scope of Accreditation. The unaccredited measurement points are indicated by the # symbol or confined to clearly marked sections.

Measurement uncertainties at the time of calibration are given where applicable. They are calculated in accordance with the method described in the ISO Guide to the Expression of Uncertainty in Measurement (GUM). The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor *k* such that the coverage probability corresponds to approximately 95 %and k=2.

Comments:



Authorized By
Nicholas Mason

Quality Manuals

This calibration has been completed in accordance with:

The Fluke Corporate Quality Manual, QSD 111.00, Revision 125 and/or

The Fluke 17025 Quality Manual, QSD 111.41, Revision 008.

The calibration stations listed above are used to calibrate the device listed on page 1. These stations are treated as single devices even though the stations contain multiple instruments. Traceability and uncertainty of the stations is achieved though weekly calibration of the stations using the Fluke Process Metrology Process. A detailed description of the Process Metrology process is available in the paper titled "Maintaining In-Situ Traceability on the Factory Floor with Process Metrology". This paper may be downloaded from www.flukecal.com .

Measurement result deviations may be expressed with units, Measured Value (MV) - Nominal Value (NV) or as a proportion of the nominal value ((MV-NV)/NV), expressed without units with a scalar multiplier such as %, or as a ratio of the units (mA/A, µV/V, etc.).

No statement of compliance with specifications is made or implied on this certificate.

Standards Used

Asset Id	Serial Number	Manufacturer	Model	Cal-Date	Due-Date
	8846-884X-04	Fluke	FPL Station	Process Cal	

DC Voltage Function

Nominal Value Input/Range	Measurement Result	Measurement Error	MPE 90 Day	Expanded Uncertainty
0 V, 100.0 mV	-0.0011 mV	-0.0011 mV	0.0035 mV	1.3E-03 mV
100.0 mV, 100.0 mV	99.9982 mV	-0.0018 mV	0.0060 mV	2.6E-03 mV
-100.0 mV, 100.0 mV	-100.0006 mV	-0.0006 mV	0.0060 mV	2.8E-03 mV
0 V, 1.0 V	0.000001 V	0.000001 V	0.000007 V	2.1E-06 V
1.0 V, 1.0 V	1.000004 V	0.000004 V	0.000025 V	3.1E-06 V
-1.0 V, 1.0 V	-1.000004 V	-0.000004 V	0.000025 V	2.9E-06 V
0.0 V, 10.0 V	0.00000 V	0.00000 V	0.00005 V	1.1E-05 V
5.0 V, 10.0 V	5.00002 V	0.00002 V	0.00014 V	1.6E-05 V
-5.0 V, 10.0 V	-5.00003 V	-0.00003 V	0.00014 V	1.2E-05 V
10.0 V, 10.0 V	10.00006 V	0.00006 V	0.00023 V	1.6E-05 V
-10.0 V, 10.0 V	-10.00006 V	-0.00006 V	0.00023 V	1.6E-05 V
0.0 V, 100.0 V	-0.0001 V	-0.0001 V	0.0006 V	2E-04 V
100.0 V, 100.0 V	100.0000 V	0.0000 V	0.0033 V	1.2E-03 V
-100.0 V, 100.0 V	-100.0006 V	-0.0006 V	0.0033 V	1.2E-03 V
0.0 V, 1.0 kV	0.000 V	0.000 V	0.010 V	1.1E-03 V
1000 V, 1000 V	1000.003 V	0.003 V	0.041 V	1.1E-02 V
-1000 V, -1000 V	-1000.005 V	-0.005 V	0.041 V	1.1E-02 V

Ratio Function

Nominal Value Input/Ref. Input	Measurement Result	Measurement Error	MPE 90 Day	Expanded Uncertainty
100.0 mV, 100.0 mV	0.999990	-0.000010	0.000120	2.7E-05
1.0 V, 1.0 V	1.000000	0.000000	0.000050	3.5E-06
-10.0 V, -10.0 V	1.000001	0.000001	0.000046	1.2E-05

AC Voltage Function

Nominal Value Input/Frequency	Measurement Result	Measurement Error	MPE 90 Day	Expanded Uncertainty
100.0 mV, 10.0 Hz	100.0064 mV	0.0064 mV	0.0900 mV	3.5E-02 mV
100.0 mV, 20.0 kHz	99.9804 mV	-0.0196 mV	0.0900 mV	4.5E-03 mV
100.0 mV, 50.0 kHz	99.9793 mV	-0.0207 mV	0.1600 mV	5.8E-03 mV
100.0 mV, 100.0 kHz	100.0999 mV	0.0999 mV	0.6800 mV	1E-02 mV

100.0 mV, 300.0 kHz	100.5692 mV	0.5692 mV	4.5000 mV	3.1E-02 mV
1.00 V, 10.0 Hz	1.000042 V	0.000042 V	0.000800 V	2.9E-04 V
1.00 V, 20.0 kHz	0.999890 V	-0.000110 V	0.000800 V	2.8E-05 V
1.00 V, 50.0 kHz	0.999950 V	-0.000050 V	0.001600 V	4E-05 V
1.00 V, 100.0 kHz	1.001293 V	0.001293 V	0.006800 V	8.5E-05 V
1.00 V, 300.0 kHz	1.008677 V	0.008677 V	0.045000 V	6.9E-04 V
10.0 V, 10.0 Hz	10.00016 V	0.00016 V	0.00800 V	1E-03 V
10.0 V, 20.0 kHz	10.00079 V	0.00079 V	0.00800 V	4.9E-04 V
10.0 V, 50.0 kHz	10.00205 V	0.00205 V	0.01600 V	8.9E-04 V
10.0 V, 100.0 kHz	10.01026 V	0.01026 V	0.06800 V	2.7E-03 V
3.00 V, 300.0 kHz	3.06192 V	0.06192 V	0.17000 V	3.6E-03 V
100.0 V, 45.0 Hz	99.9887 V	-0.0113 V	0.0800 V	1.1E-02 V
100.0 V, 20.0 kHz	100.0078 V	0.0078 V	0.0800 V	3.2E-03 V
100.0 V, 50.0 kHz	100.0269 V	0.0269 V	0.1600 V	9.6E-03 V
100.0 V, 100.0 kHz	100.1346 V	0.1346 V	0.6800 V	2.5E-02 V
1000 V, 45.0 Hz	999.875 V	-0.125 V	0.725 V	2.7E-01 V
1000 V, 1.0 kHz	1000.033 V	0.033 V	0.725 V	2.9E-01 V
1000 V, 10.0 kHz	999.957 V	-0.043 V	0.725 V	3.1E-01 V
320.0 V, 20.0 kHz	320.036 V	0.036 V	0.385 V	1.8E-01 V
320.0 V, 50.0 kHz	319.891 V	-0.109 V	0.727 V	1.9E-01 V
320.0 V, 100.0 kHz	319.569 V	-0.431 V	2.520 V	3.9E-01 V

AC Frequency Function

Nominal Value Input/Frequency	Measurement Result	Measurement Error	MPE 90 Day	Expanded Uncertainty
1.0 V, 10.010 Hz	10.00996 Hz	-0.00004 Hz	0.00300 Hz	2E-04 Hz
1.0 V, 40.0 Hz	40.0003 Hz	0.0003 Hz	0.0040 Hz	2.9E-04 Hz
100.0 mV, 300.0 kHz	300.002 kHz	0.002 kHz	0.030 kHz	9.6E-04 kHz
100.0 mV, 1.00 MHz	1000.000 kHz	0.007 kHz	0.100 kHz	4.7E-03 kHz

Resistance Function

Nominal Value Input/Range	Measurement Result	Measurement Error	MPE 90 Day	Expanded Uncertainty
0 Ω, 10.0 Ω	0.00025 Ω	0.00025 Ω	0.00300 Ω	3.3E-04 Ω
10.0 Ω, 10.0 Ω	9.99973 Ω	-0.00027 Ω	0.00380 Ω	3.9E-04 Ω
0 Ω, 100.0 Ω	0.0004 Ω	0.0004 Ω	0.0040 Ω	1.3E-03 Ω
100.0 Ω, 100.0 Ω	99.9994 Ω	-0.0006 Ω	0.0120 Ω	2.2E-03 Ω
0 Ω, 1.0 kΩ	-0.000001 kΩ	-0.000001 kΩ	0.000010 kΩ	1.9E-06 kΩ
1.00 kΩ, 1.0 kΩ	0.999998 kΩ	-0.000002 kΩ	0.000090 kΩ	1.3E-05 kΩ
0 Ω, 10.0 kΩ	-0.00001 kΩ	-0.00001 kΩ	0.00010 kΩ	1.8E-05 kΩ
10.0 kΩ, 10.0 kΩ	9.99979 kΩ	-0.00021 kΩ	0.00090 kΩ	1.4E-04 kΩ
0 Ω, 100.0 kΩ	-0.0001 kΩ	-0.0001 kΩ	0.0010 kΩ	2.3E-04 kΩ
100.0 kΩ, 100.0 kΩ	99.9988 kΩ	-0.0012 kΩ	0.0090 kΩ	1.4E-03 kΩ
0 Ω, 1.0 MΩ	0.000000 MΩ	0.000000 MΩ	0.000010 MΩ	1.5E-06 MΩ
1.0 MΩ, 1.0 MΩ	0.999997 MΩ	-0.000003 MΩ	0.000090 MΩ	1.2E-05 MΩ
0 Ω, 10.0 MΩ	0.00000 MΩ	0.00000 MΩ	0.00010 MΩ	9.3E-06 MΩ
10.0 MΩ, 10.0 MΩ	10.00012 MΩ	0.00012 MΩ	0.00210 MΩ	1.6E-04 MΩ
0 Ω, 100.0 MΩ	0.0000 MΩ	0.0000 MΩ	0.0100 MΩ	5.9E-05 MΩ
100.0 MΩ, 100.0 MΩ	99.9977 MΩ	-0.0023 MΩ	0.8100 MΩ	4.3E-02 MΩ
0 Ω, 1.0 GΩ	0.000000 GΩ	0.000000 GΩ	0.000100 GΩ	5.8E-07 GΩ
1.00 GΩ, 1.0 GΩ	0.997964 GΩ	-0.002036 GΩ	0.015100 GΩ	3.2E-03 GΩ

Capacitance Function

Nominal Value Input	Measurement Result	Measurement Error	MPE 90 Day	Expanded Uncertainty
0 F	-0.001 nF	-0.001 nF	0.025 nF	3.4E-03 nF
1.00 nF	1.013 nF	0.013 nF	0.045 nF	1.3E-02 nF
10.0 nF	10.02 nF	0.02 nF	0.15 nF	2.7E-02 nF
100.0 nF	100.0 nF	0.0 nF	1.5 nF	2.4E-01 nF
1.00 µF	1.000 uF	0.000 uF	0.015 uF	2.3E-03 uF
10.0 µF	10.00 uF	0.00 uF	0.15 uF	2.3E-02 uF
100.0 µF	100.0 uF	0.0 uF	1.5 uF	3.5E-01 uF
1.00 mF	1.001 mF	0.001 mF	0.015 mF	3.7E-03 mF
10.0 mF	10.03 mF	0.03 mF	0.15 mF	3.9E-02 mF
100.0 mF	100.7 mF	0.7 mF	4.2 mF	1 mF