Calibration Certificate

Al Takamul Yard North Rumailah, Iraq
●Phone : +964 7810009138 ● www.qualitycontrol-iraq.com ● E-mail: op@qualitycontrol-iraq

Date of Issue: November 12, 2024

REQUEST NUMBER	:	By Mail
JOB NUMBER	:	QC-YB-240044
CERTIFICATE NUMBER	:	**QC-YB-240044-03**

APPROVED BY / LAB INCHARGE QC

CUSTOMER DETAILS

Name : **Halliburton Worldwide-Iraq Branch**
Address : Oil Street, Western Burjessia Basra South Iraq
Department : IEM

EQUIPMENT IDENTIFICATION AND SPECIFICATIONS

Description : **True RMS Multimeter**
Type of Indication : Digital
Manufacturer : FLUKE
Model : 87V
Serial Number : 14370329
SAP : 300094868

Calibrated Range:

Voltage (DC)	0.01 mV	to	1000 V
Voltage (AC) @ 50 Hz	0.1 mV	to	1000 V
Voltage (AC) @ 1 kHz	0.1 mV	to	1000 V
Current (DC)	0.01 µA	to	10 A
Current (AC) @ 50 Hz	0.1 µA	to	10 A
Current (AC) @ 1 kHz	0.1 µA	to	10 A
Resistance	1 Ω	to	50 M Ω

Resolution:

Voltage (DC)	0.01 mV	0.001 mV	0.001 V
Voltage (AC) @ 50 Hz	0.1 mV	0.001 mV	0.001 V
Voltage (AC) @ 1 kHz	0.1 mV	0.001 mV	0.001 V
Current (DC)	0.01 µA	0.001 mA	0.001 A
Current (AC) @ 50 Hz	0.1 µA	0.001 mA	0.001 A
Current (AC) @ 1 kHz	0.1 µA	0.001 mA	0.001 A
Resistance	0.1 Ω	0.001 K Ω	0.001 M Ω

As found : In Tolerance
Calibrated By : Abulrahman Loay
Calibration Date : November 12, 2024
Calibration Due : November 11, 2025
Last Calibration : September 19, 2023

ENVIRONMENTAL CONDITIONS DURING TEST

Ambient Temperature	:	22 °C	±	2 °C
Relative Humidity	:	15 %RH	±	5 %RH

CALIBRATION METHOD

The above equipment has been calibrated in accordance with QC Calibration Procedure # QC/CP/E/01

The deviations of the measurements obtained from UUC with respect to reference standards are determined to obtain the error.

REFERENCE EQUIPMENT USED :

DESCRIPTION	MAKE	MODEL #	SERIAL #	CALIBRATION DATE	CALIBRATION DUE DATE
Multifunction Calibrator	Fluke, USA	5522A	2806902	8/20/2024	8/19/2025
Ref Mulitmeter	Fluke, USA	8508A	276568089	8/20/2024	8/19/2025
Decade Resistance Box	Corpico	RBB6-B	18F-1093	8/20/2024	8/19/2025
Programmable Inductance substitutor	IET Labs	PLS-1492	J1-1419517	8/20/2024	8/19/2025

CERTIFICATE OF CALIBRATION

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CALIBRATION TEST RESULTS

Measurement Data for DC Voltage

Zero or Offset Readings of UUC

Before Adjustment	After Adjustment
µV	µV
0	0

Before Adjustment	After Adjustment
mV	mV
0	0

Before Adjustment	After Adjustment
V	V
0	0

Readings on UUC	Readings on Ref. Standard	Error	Uncertainty (95 % C.L)
µV	µV	µV	± (µV)
99.8	100.00	-0.20	0.1
mV	mV	mV	± (mV)
0.9	0.98	-0.08	0.1
9.8	9.99	-0.19	0.1
100	100.03	-0.03	0.1
500	500.07	-0.07	0.1
600	601.79	-1.79	0.1
V	V	V	± (V)
1.003	1.00	0.00	0.1
-1.002	-1.00	0.00	0.1
10.01	10.00	0.01	0.1
100	99.98	0.02	0.1
300	300.92	-0.92	0.1
500	501.06	-1.06	1
901	901.21	-0.21	1
1000	1001.00	-1.00	1

Measurement Data for AC Voltage @ 50 Hz

Zero or Offset Readings of UUC

Before Adjustment	After Adjustment
µV	µV
0	0

Before Adjustment	After Adjustment
mV	mV
0	0

Before Adjustment	After Adjustment
V	V
0	0

Readings on UUC	Readings on Ref. Standard	Error	Uncertainty (95 % C.L)
µV	µV	µV	± (µV)
99.9	100.000	-0.100	0.1
mV	mV	mV	± (mV)
0.9	1.000	-0.100	0.1
9.8	10.000	-0.200	0.1
100	100.000	0.000	0.1
500	499.998	0.002	0.1
600	598.650	1.350	0.1
V	V	V	± (V)
1.001	0.997950	0.003050	0.1
10.01	9.99620	0.01380	0.1
100.0	100.0147	-0.0147	0.1
300.0	300.013	-0.013	0.1
500	500.015	-0.015	1
901	900.080	0.920	1
1000	999.942	0.058	1

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Measurement Data for AC Voltage @ 1 kHz

Zero or Offset Readings of UUC

Before Adjustment	After Adjustment
µV	µV
0	0

Before Adjustment	After Adjustment
mV	mV
0	0

Before Adjustment	After Adjustment
V	V
0	0

Readings on UUC	Readings on Ref. Standard	Error	Uncertainty (95 % C.L)
µV	µV	µV	± (µV)
99.9	100.00	-0.10	0.1
mV	mV	mV	± (mV)
0.9	1.001	-0.101	0.1
9.8	10.001	-0.201	0.1
100	100.003	-0.003	0.1
500	500.000	0.000	0.1
600	599.955	0.045	0.1
V	V	V	± (V)
1.002	1.000010	0.001990	0.1
10.01	10.00001	0.00999	0.1
100.0	99.9870	0.0130	0.1
300.0	299.995	0.005	0.1
500	499.989	0.011	1
901	899.930	1.070	1
1000	999.989	0.011	1

Measurement Data for DC Current

Zero or Offset Readings of UUC

Before Adjustment	After Adjustment
µA	µA
0	0

Before Adjustment	After Adjustment
µA	µA
0	0

Before Adjustment	After Adjustment
µA	µA
0	0

Readings on UUC	Readings on Ref. Standard	Error	Uncertainty (95 % C.L)
µA	µA	µA	± (µA)
99.9	99.999	-0.099	0.1
mA	mA	mA	± (mA)
0.9	1.000	-0.100	0
9.8	10.000	-0.200	0.1
100	99.985	0.015	0.1
500	499.999	0.001	0.1
600	600.125	-0.125	0.1
A	A	A	± (A)
1.002	1.000010	0.001990	0.01
-1.002	-1.000030	-0.001970	0.01
3.002	2.994550	0.007450	0.01
5.003	4.999950	0.003050	0.06
11.003	10.999900	0.003100	0.06

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Measurement Data for AC Current @ 50 Hz

Zero or Offset Readings of UUC

Before Adjustment	After Adjustment
µA	µA
0	0

Before Adjustment	After Adjustment
µA	µA
0	0

Before Adjustment	After Adjustment
µA	µA
0	0

Readings on UUC	Readings on Ref. Standard	Error	Uncertainty (95 % C.L)
µA	µA	µA	± (µA)
99.9	99.999	-0.099	0.1
mA	mA	mA	± (mA)
0.9	1.000	-0.100	0
9.8	10.000	-0.200	0.1
100	100.000	0.000	0.1
500	500.030	-0.030	0.1
900	899.900	0.100	0.2
A	A	A	± (A)
1.001	1.000100	0.000900	0.01
3.002	3.000040	0.001960	0.01
5.003	5.008040	-0.005040	0.06
9.9	10.235000	-0.335000	0.06

Measurement Data for AC Current @ 1 kHz

Zero or Offset Readings of UUC

Before Adjustment	After Adjustment
µA	µA
0	0

Before Adjustment	After Adjustment
µA	µA
0	0

Before Adjustment	After Adjustment
µA	µA
0	0

Measurement Data for AC Current @ 1 kHz

Readings on UUC	Readings on Ref. Standard	Error	Uncertainty (95 % C.L)
µA	µA	µA	± (µA)
99.9	99.999	-0.099	0.1
mA	mA	mA	± (mA)
0.9	1.000	-0.100	0
9.8	10.000	-0.200	0.1
100	100.020	-0.020	0.1
500	500.040	-0.040	0.1
600	601.230	-1.230	0.2
A	A	A	± (A)
1.002	0.999950	0.002050	0.01
3.002	2.999780	0.002220	0.01
5.002	4.999780	0.002220	0.06
10.001	10.002568	-0.001568	0.06

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Measurement Data for Resistance

Zero or Offset Readings of UUC

Before Adjustment	After Adjustment
Ω	Ω
0	0

Before Adjustment	After Adjustment
kΩ	kΩ
0	0

Before Adjustment	After Adjustment
MΩ	MΩ
0	0

Readings on UUC	Readings on Ref. Standard	Error	Uncertainty (95 % C.L)
Ω	Ω	Ω	± (Ω)
1.1	1.00010	0.09990	0.08
10.1	9.99740	0.10260	0.10
100.1	99.9920	0.1080	0.08
900.2	900.0000	0.2000	0.08
kΩ	kΩ	kΩ	± (kΩ)
1.002	1.000000	0.002000	0.01
10.001	9.99875	0.00225	0.01
100.1	100.0006	0.0994	0.06
500.1	499.9993	0.1007	0.05
900.1	899.999	0.1010	0.08
MΩ	MΩ	MΩ	± (MΩ)
1.001	1.000001	0.000999	0.12
10.000	10.00420	-0.00420	0.01
30.001	29.9970	0.0040	0.02
50.002	49.9860	0.0160	0.02

Results :

Calibration results were found to conform as per specified accuracy requirements. Above Instrument has **PASSED** its Calibration.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with international practice.

DEVIATION FROM STANDARD METHOD : None

REMARK (S) :

■ The results are as found (no adjustment done).
□ The results are post adjustment.

CALIBRATED BY	REVIWED & APPROVED BY LAB INCHARGE	CLIENT
Abdulrahman Loay	LAB INCHARGE Asjad Rafiq	

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