Calibration Certificate

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Date of Issue: November 12, 2024

REQUEST NUMBER	:	By Mail	APPROVED BY LAB INCHARGE QC
JOB NUMBER	:	QC-YB-240044	
CERTIFICATE NUMBER	:	**QC-YB-240044-06**	**Asjad Rafiq**

CUSTOMER DETAILS

Name : **Halliburton Worldwide IRAQ**
Department : IEM
Address : Western Burjesia, Oil Street, Zubair, South Iraq

EQUIPMENT IDENTIFICATION AND SPECIFICATIONS

Description : **Multimeter**
Type of Indication : Digital
Manufacturer : Fluke, USA
Model : 77IV
Serial Number : 23490119
SAP No. : 300094893

Calibrated Range:

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

Resolution:

Voltage (DC)	0.1 mV	0.001 V	0.01 V	0.1V	1V
Voltage (AC) @ 50 Hz	0.1 mV	0.001 V	0.01 V	0.1V	1V
Voltage (AC) @ 1 kHz	0.1 mV	0.001 V	0.01 V	0.1V	1V
Current (DC)	0.1 mA	0.001 mA	0.001 A		
Current (AC) @ 50 Hz	0.1 mA	0.001 mA	0.001 A		
Current (AC) @ 1 kHz	0.1 mA	0.001 mA	0.001 A		
Resistance	0.1 ohm	0.001 k-ohm	0.001 M-ohm		

As found condition : In Tolerance
Calibration Date : November 12, 2024
Calibration Due : November 11, 2025
Last Calibration Date : September 19, 2023

ENVIRONMENTAL CONDITIONS DURING TEST

Ambient Temperature	:	22 ℃	±	2 ℃
Relative Humidity	:	40 %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.

TRACEABILITY

The measurements made by Quality Control Labs, realize the physical units of measurements (SI), through its state of the art calibration standards that are controlled and maintained by QC.

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)
mV	mV	mV	± (mV)
0.9	1.01	-0.11	0.1
9.9	10.00	-0.10	0.1
101	100.00	1.00	0.1
501	500.00	1.00	0.1
599	600.03	-1.03	0.1
V	V	V	± (V)
1.002	1.00	0.00	0.1
-1.001	-1.00	0.00	0.1
9.97	10.00	-0.03	0.1
100	100.00	0.00	0.1
301	300.07	0.93	0.1
501	500.04	0.96	0.2
899	900.05	-1.05	0.2
999	1000.08	-1.08	0.2

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)
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	599.583	0.417	0.1
V	V	V	± (V)
1.002	0.99998	0.002020	0.1
10.01	9.99978	0.01022	0.1
100.0	100.0850	-0.0850	0.1
300.0	300.013	-0.013	0.1
500	500.013	-0.013	0.1
901	900.080	0.920	0.2
1000	1000.087	-0.087	0.2

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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)
mV	mV	mV	± (mV)
0.9	1.001	-0.101	0.1
9.8	10.003	-0.203	0.1
100	100.003	-0.003	0.1
499	500.000	-1.000	0.1
600	601.200	-1.200	0.1
V	V	V	± (V)
1.001	1.000010	0.001990	0.1
10.01	10.00001	0.00999	0.1
100.0	99.9870	0.01300	0.1
300.0	299.953	0.04700	0.1
501	499.987	1.01300	0.2
901	899.930	1.07000	0.2
1000	1001.243	-1.243	0.3

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)
mA	mA	mA	± (mA)
0.9	1.000	-0.100	0
9.8	10.000	-0.200	0.1
100	99.999	0.001	0.1
500	499.987	0.013	0.1
900	900.010	-0.010	0.1
A	A	A	± (A)
1.002	1.000010	0.001990	0.01
-1.002	-1.000030	-0.001970	0.01
3.001	2.999950	0.001050	0.01
5.003	4.996940	0.006060	0.06
9.006	8.955800	0.050200	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)
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	500.020	-0.020	0.1
900	899.930	0.070	0.2
A	A	A	± (A)
1.002	1.000100	0.001900	0.01
3.003	3.000540	0.002460	0.01
5.002	5.000480	0.001520	0.06
9.002	9.001000	0.001000	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)
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
900	900.050	-0.050	0.2
A	A	A	± (A)
1.002	0.997950	0.004050	0.01
3.002	2.999770	0.002230	0.01
5.002	4.999750	0.002250	0.06
9.002	9.001020	0.000980	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	9.99990	0.10010	0.10
100.2	99.9990	0.2010	0.08
900.2	900.0000	0.2000	0.08
kΩ	kΩ	kΩ	± (kΩ)
1.002	1.000000	0.002000	0.01
10.002	9.99985	0.00215	0.01
100.1	100.0006	0.0994	0.06
500.1	499.9993	0.1007	0.05
900.2	899.999	0.201	0.08
MΩ	MΩ	MΩ	± (MΩ)
1.001	1.000001	0.000999	0.12
10.000	10.00025	-0.00025	0.01
30.003	29.9750	0.0280	0.02
50.002	49.9852	0.0168	0.02

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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