Calibration Certificate

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Date of Issue: January 8, 2025

REQUEST NUMBER	:	By Mail	APPROVED BY LAB INCHARGE QC
JOB NUMBER	:	QC-B-01-25-0014	
CERTIFICATE NUMBER	:	QC-B-01-25-0014-01	Asmaa Rafiq

CUSTOMER DETAILS

Name : **Egyptian Maintenance Company(EMC) IRAQ**

Address : Iraq, Basra

EQUIPMENT IDENTIFICATION AND SPECIFICATIONS

Description : **True RMS Multimeter**

Type of Indication : Digital

Manufacturer : FLUKE

Model : 115

Serial Number : **24691655**

Calibrated Range :

Voltage (DC)	0.01 mV	to	600 V
Voltage (AC) @ 50 Hz	0.1 mV	to	600 V
Voltage (AC) @ 1 kHz	0.1 mV	to	600 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	6 MΩ

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 KΩ	0.001 MΩ

Calibrated By : Hussein Alaa

Calibration Date : **January 8, 2025**

Calibration Due : **January 7, 2026**

ENVIRONMENTAL CONDITIONS DURING TEST

Ambient Temperature	:	22 ℃	±	2 ℃
Relative Humidity	:	45 %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	November 5, 2024	November 4, 2025
Ref Mulitmeter	Fluke, USA	8508A	276568089	November 5, 2024	November 4, 2025
Decade Resistance Box	Corpico	RBB6-B	18F-1093	November 5, 2024	November 4, 2025
Programmable Inductance substitutor	IET Labs	PLS-1492	J1-1419517	November 5, 2024	November 4, 2025

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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)
99.9	100.00	-0.10	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)
1.002	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	301.85	-1.85	0.1
500	501.06	-1.06	1
600	602.00	-2.00	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)
1.002	0.998400	0.003600	0.1
10.01	9.99632	0.01368	0.1
100.0	100.0147	-0.0147	0.1
300.0	300.013	-0.013	0.1
500	500.015	-0.015	1
600	600.942	-0.942	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	100.001	-0.001	0.1
500	500.000	0.000	0.1
600	599.950	0.050	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	299.932	0.068	0.1
500	499.974	0.026	1
600	600.989	-0.989	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	499.994	0.006	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
10.003	9.999900	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)
1.002	1.000100	0.001900	0.01
3.002	3.000040	0.001960	0.01
5.001	5.008040	-0.007040	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	9.99990	0.10010	0.10
100.1	99.9918	0.1082	0.08
900.2	900.0000	0.2000	0.08
kΩ	kΩ	kΩ	± (kΩ)
1.002	1.000000	0.002000	0.01
10.002	9.99876	0.00324	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
2.000	2.00420	-0.00420	0.01
4.001	3.9970	0.0040	0.02
6.003	5.9450	0.0580	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.

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