

Calibration Certificate

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Date of Issue: August 3, 2024

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REQUEST NUMBER	:	By Mail	APPROVED BY LAB IN CHARGE QC
JOB NUMBER	:	QC/JN/24/00307	
CERTIFICATE NUMBER	:	QC240803-02	

CUSTOMER DETAILS

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

EQUIPMENT IDENTIFICATION AND SPECIFICATIONS

Description : **Multimeter**
 Type of Indication : Digital
 Manufacturer : Fluke, USA
 Model : 771V
 Serial Number : 22870051
 SAP No. : 300147856



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 : In Tolerance

Calibrated By : Hussein Alaa

Calibration Date : **August 3, 2024**

Calibration Due : **August 2, 2025**

Last Calibration : August 16, 2023

ENVIRONMENTAL CONDITIONS DURING TEST

Ambient Temperature	:	22 °C	±	2 °C
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	8/25/2023	8/24/2024
Ref Multimeter	Fluke, USA	8508A	276568089	8/25/2023	8/24/2024
Decade Resistance Box	Corpico	RBB6-B	18F-1093	8/25/2023	8/24/2024
Programmable Inductance substitutor	IET Labs	PLS-1492	J1-1419517	8/25/2023	8/24/2024



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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	$\pm$ (mV)
1	1.01	-0.01	0.1
10	10.05	-0.05	0.1
100	100.06	-0.06	0.1
500	501.28	-1.28	0.1
600	602.50	-2.50	0.1
V	V	V	$\pm$ (V)
1.00	1.03	-0.03	0.1
-1.00	-1.05	0.05	0.1
10	10.02	-0.02	0.1
100	100.56	-0.56	0.1
300	300.04	-0.04	0.1
500	500.16	-0.16	0.2
900	900.05	-0.05	0.2
999	999.25	-0.25	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	$\pm$ (mV)
1	0.901	0.099	0.1
10	10.004	-0.004	0.1
100	100.000	0.000	0.1
500	499.998	0.002	0.1
600	599.598	0.402	0.1
V	V	V	$\pm$ (V)
1.00	0.99450	0.005500	0.1
10.01	9.91400	0.09600	0.1
100.0	100.0130	-0.0130	0.1
300.0	300.018	-0.018	0.1
500	500.018	-0.018	0.1
901	900.080	0.920	0.2
1000	1000.075	-0.075	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	$\pm$ (mV)
0.9	0.911	-0.011	0.1
9.8	10.003	-0.203	0.1
100	100.005	-0.005	0.1
499	500.000	-1.000	0.1
600	602.500	-2.500	0.1
V	V	V	$\pm$ (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	299.980	0.02000	0.1
501	499.970	1.03000	0.2
901	899.930	1.07000	0.2
1000	1001.270	0.001	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	$\pm$ (mA)
0.9	0.905	-0.005	0
9.8	9.885	-0.085	0.1
100	99.980	0.020	0.1
500	499.982	0.018	0.1
900	900.010	-0.010	0.1
A	A	A	$\pm$ (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
5.005	4.997500	0.007500	0.06
9.002	8.828800	0.173200	0.06

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Measurement Data for AC Current @ 50 Hz

Zero or Offset Readings of UUC

Before Adjustment μA	After Adjustment μA
0	0

Before Adjustment μA	After Adjustment μA
0	0

Before Adjustment μA	After Adjustment μA
0	0

Readings on UUC mA	Readings on Ref. Standard mA	Error mA	Uncertainty (95 % C.L.) $\pm$ (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	$\pm$ (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
9.001	9.001000	0.000000	0.06

Measurement Data for AC Current @ 1 kHz

Zero or Offset Readings of UUC

Before Adjustment μA	After Adjustment μA
0	0

Before Adjustment μA	After Adjustment μA
0	0

Before Adjustment μA	After Adjustment μA
0	0

Measurement Data for AC Current @ 1 kHz

Readings on UUC mA	Readings on Ref. Standard mA	Error mA	Uncertainty (95 % C.L.) $\pm$ (mA)
0.9	1.000	-0.100	0
9.8	10.000	-0.200	0.1
100	100.020	-0.020	0.1
500	500.045	-0.045	0.1
900	900.070	-0.070	0.2
A	A	A	$\pm$ (A)
1.002	0.988950	0.013050	0.01
3.002	2.994770	0.007230	0.01
5.001	4.999760	0.001240	0.06
9.001	9.001020	-0.000020	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
$k\Omega$	$k\Omega$
0	0

Before Adjustment	After Adjustment
$M\Omega$	$M\Omega$
0	0

Readings on UUC	Readings on Ref. Standard	Error	Uncertainty (95 % C.L.)
Ω	Ω	Ω	$\pm (\Omega)$
1.1	1.00010	0.09990	0.08
10.1	9.99984	0.10016	0.10
100.2	99.9410	0.2590	0.08
900.2	900.0586	0.1414	0.08
$k\Omega$	$k\Omega$	$k\Omega$	$\pm (k\Omega)$
1.000	1.005000	-0.005000	0.01
10.002	9.99850	0.00350	0.01
100.0	100.0580	-0.0580	0.06
500.0	499.9984	0.0016	0.05
900.0	899.971	0.029	0.08
$M\Omega$	$M\Omega$	$M\Omega$	$\pm (M\Omega)$
1.000	1.000001	-0.000001	0.12
10.000	10.00028	-0.00028	0.01
30.00	29.9410	0.0590	0.02
50.00	49.9983	0.0017	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	REVIEWED & APPROVED BY LAB INCHARGE	CLIENT
 Mahdi Halim	 LAB INCHARGE Asjad Rafiq	

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