



Certificate of Calibration

Illiana Instrumentation Service LLC

1831 Govert Drive
Schererville, IN 46375



Cert #: 15622 Rev. 1

Item # 1228

Certificate Date: 3/1/2024

CUSTOMER

ILLIANA INSTRUMENTATION SERVICE LLC
1831 GOVERT DRIVE
SCHERERVILLE, IN 46375

EQUIPMENT INFORMATION

Item # 1228 Calibration Result: PASS
Manufacturer FLUKE
Model Number 744
Serial Number 7607012
Equip. Location MOBILE
Description PROCESS CALIBRATOR

CALIBRATION INFORMATION

Date received: 3/1/2024
Technician: PAUL GROLLA

Cal Date: 3/1/2024
Temperature: 68 F

Cal. Interval 3 MONTHS
Humidity 30
Tag
Cal. Due Date: 6/1/2024
Cal location LAB

Department: LAB
Notes:
Problems: None
Adjustments None
Equipment Notes

Sensitivity OKAY
Initial modification offset 0
Final modification offset 0
Note: If the modification offset is not zero, readings reflect zero
Limitations NONE
Accuracy VARIES BY POINT



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Quality and traceability statements

This certifies that the above equipment was calibrated using appropriate Illiana Instrumentation technical procedures. At planned intervals, Illiana Instrumentation standards are calibrated by comparison to or measurement against standards which are traceable to the SI units through the NIST or other recognized national measurement institutes or international standard bodies. The results in this report relate only to the item(s) calibrated. If so indicated above, detailed calibration results are attached to this certificate. These results are part of this certificate and this certificate shall not be reproduced except in full, without the written approval of Illiana Instrumentation. Any number of factors not under the control of the calibration laboratory may cause the calibration of the above item(s) to drift before the recommended recalibration date. Supporting documentation relative to traceability and technical procedures used is on file and is available for examination upon request and approval of our quality assurance manager. The above uncertainties represent an expanded uncertainty expressed at approximately 95% confidence level using a coverage factor of k=2. The certificate date on this report constitutes the issue date. Pass/Fail criteria does not take into account measurement uncertainty. Add correction factor to as left to get corrected reading. Values are uncorrected for test instrument error.

Calibrated By:

Paul Grolla

Approved By:

Laura Grolla

Customer Approval

Calibration Data

Values found OOT and adjusted are indicated by "A" and items left OOT are indicated by "F"

Group	Description	Nominal	Lower Tol.	Upper Tol.	As Found	As Left	Units	Uncert.	OOT	Corr. Factor
MEASURE	TYPEK	-180.0	-180.6	-179.4	-179.9	-179.9	°C	0.19		-0.1
MEASURE	TYPEK	0.0	-0.6	0.6	0.0	0.0	°C	0.19		0.0
MEASURE	TYPEK	400.0	399.4	400.6	399.9	399.9	°C	0.19		0.1
MEASURE	TYPEK	800.0	799.2	800.8	799.9	799.9	°C	0.19		0.1
MEASURE	TYPEK	1000.0	999.0	1001.0	999.8	999.8	°C	0.19		0.2
MEASURE	TYPEK	1300.0	1298.7	1301.3	1299.8	1299.8	°C	0.19		0.2
										0
SIMULATE	TYPEK	-180.00	-180.60	-179.40	-179.80	-179.80	°C	0.16		-0.20
SIMULATE	TYPEK	0.00	-0.60	0.60	0.10	0.10	°C	0.16		-0.10
SIMULATE	TYPEK	400.00	399.40	400.60	400.10	400.10	°C	0.16		-0.10
SIMULATE	TYPEK	800.00	799.20	800.80	800.10	800.10	°C	0.16		-0.10
SIMULATE	TYPEK	1000.00	999.00	1001.00	1000.10	1000.10	°C	0.16		-0.10
SIMULATE	TYPEK	1300.00	1298.70	1301.30	1300.10	1300.10	°C	0.16		-0.10



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Group	Description	Nominal	Lower Tol.	Upper Tol.	As Found	As Left	Units	Uncert.	OOT	Corr. Factor
										0
MEASURE	TYPE J	-210.0	-210.6	-209.4	-210.1	-210.1	°C	0.17		0.1
MEASURE	TYPE J	0.0	-0.6	0.6	-0.1	-0.1	°C	0.17		0.1
MEASURE	TYPE J	300.0	299.4	300.6	299.8	299.8	°C	0.17		0.2
MEASURE	TYPE J	600.0	599.4	600.6	599.8	599.8	°C	0.17		0.2
MEASURE	TYPE J	900.0	899.1	900.9	899.8	899.8	°C	0.17		0.2
MEASURE	TYPE J	1200.0	1198.8	1201.2	1199.7	1199.7	°C	0.17		0.3
										0
SIMULATE	TYPE J	-210.00	-210.60	-209.40	-209.70	-209.70	°C	0.13		-0.30
SIMULATE	TYPE J	0.00	-0.60	0.60	0.10	0.10	°C	0.13		-0.10
SIMULATE	TYPE J	300.00	299.40	300.60	300.10	300.10	°C	0.13		-0.10
SIMULATE	TYPE J	600.00	599.40	600.60	600.10	600.10	°C	0.13		-0.10
SIMULATE	TYPE J	900.00	899.10	900.90	900.10	900.10	°C	0.13		-0.10
SIMULATE	TYPE J	1200.00	1198.80	1201.20	1200.20	1200.20	°C	0.13		-0.20
										0
MEASURE	TYPE S	0.0	-0.6	0.6	-0.1	-0.1	°C	0.67		0.1
MEASURE	TYPE S	400.0	399.4	400.6	399.9	399.9	°C	0.58		0.1
MEASURE	TYPE S	800.0	799.2	800.8	799.9	799.9	°C	0.58		0.1
MEASURE	TYPE S	1200.0	1198.8	1201.2	1199.8	1199.8	°C	0.58		0.2
MEASURE	TYPE S	1600.0	1598.4	1601.6	1599.9	1599.9	°C	0.58		0.1
MEASURE	TYPE S	1767.0	1765.2	1768.8	1766.6	1766.6	°C	0.58		0.4
										0.0
SIMULATE	TYPE S	0.00	-0.60	0.60	-0.10	-0.10	°C	0.66		0.10
SIMULATE	TYPE S	400.00	399.40	400.60	400.00	400.00	°C	0.55		0.00



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SIMULATE	TYPE S	800.00	799.20	800.80	799.90	799.90	°C	0.55		0.10
SIMULATE	TYPE S	1200.00	1198.80	1201.20	1200.00	1200.00	°C	0.55		0.00
SIMULATE	TYPE S	1600.00	1598.40	1601.60	1599.90	1599.90	°C	0.55		0.10
SIMULATE	TYPE S	1767.00	1765.20	1768.80	1767.00	1767.00	°C	0.55		0.00
										0
MEASURE	TYPE N	-100.0	-100.6	-99.4	-100.3	-100.3	°C	0.2		0.3
MEASURE	TYPE N	0.0	-0.6	0.6	-0.3	-0.3	°C	0.2		0.3
MEASURE	TYPE N	300.0	299.4	300.6	299.7	299.7	°C	0.2		0.3
MEASURE	TYPE N	600.0	599.4	600.6	599.7	599.7	°C	0.2		0.3
MEASURE	TYPE N	900.0	899.1	900.9	899.7	899.7	°C	0.2		0.3
MEASURE	TYPE N	1300.0	1298.7	1301.3	1299.6	1299.6	°C	0.2		0.4
										0
SIMULATE	TYPE N	-100.00	-100.60	-99.40	-99.70	-99.70	°C	0.18		-0.30
SIMULATE	TYPE N	0.00	-0.60	0.60	0.20	0.20	°C	0.18		-0.20
SIMULATE	TYPE N	300.00	299.40	300.60	300.20	300.20	°C	0.18		-0.20
SIMULATE	TYPE N	600.00	599.40	600.60	600.20	600.20	°C	0.18		-0.20
SIMULATE	TYPE N	900.00	899.10	900.90	900.20	900.20	°C	0.18		-0.20
SIMULATE	TYPE N	1300.00	1298.70	1301.30	1300.20	1300.20	°C	0.18		-0.20
										0.00
MEASURE	TYPE T	-200.0	-200.6	-199.4	-200	-200	°C	0.74		0
MEASURE	TYPE T	0.0	-0.6	0.6	0.1	0.1	°C	0.73		-0.1
MEASURE	TYPE T	100.0	99.4	100.6	100.0	100.0	°C	0.73		0.0
MEASURE	TYPE T	200.0	199.4	200.6	200	200	°C	0.73		0
MEASURE	TYPE T	300.0	299.4	300.6	300.0	300.0	°C	0.73		0.0



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MEASURE	TYPE T	400.0	399.4	400.6	400.0	400.0	°C	0.73		0.0
										0
SIMULATE	TYPE T	-200.00	-200.60	-199.40	-200.10	-200.10	°C	0.73		0.10
SIMULATE	TYPE T	0.00	-0.60	0.60	0.00	0.00	°C	0.33		0.00
SIMULATE	TYPE T	100.00	99.40	100.60	100.00	100.00	°C	0.33		0.00
SIMULATE	TYPE T	200.00	199.40	200.60	200.00	200.00	°C	0.33		0.00
SIMULATE	TYPE T	300.00	299.40	300.60	300.00	300.00	°C	0.33		0.00
SIMULATE	TYPE T	400.00	399.40	400.60	400.00	400.00	°C	0.33		0.00
										0
MEASURE	mVDC 110 RANGE	0.000	-0.017	0.017	0.000	0.000	mVDC	0.0033		0.000
MEASURE	mVDC	100.000	99.959	100.042	100.000	100.000	mVDC	0.0033		0.000
MEASURE	mVDC	-100.000	-100.042	-99.959	-99.990	-99.990	mVDC	0.0033		-0.010
										0.0
MEASURE	VDC 1.1 RANGE	0.00000	-0.00006	0.00006	0.00000	0.00000	VDC	0.000033		0.00000
MEASURE	VDC	1.00000	0.99970	1.00081	1.00008	1.00008	VDC	0.00045		-0.00008
										0
MEASURE	VDC 11 RANGE	0.0000	-0.0006	0.0006	0.0000	0.0000	VDC	0.000033		0.0000
MEASURE	VDC	10.0000	9.9970	10.0031	10.0007	10.0007	VDC	0.005		-0.0007
										0
MEASURE	mADC 30 mA RANGE	4.0000	3.9963	4.0037	4.0000	4.0000	maDC	0.0016		0.0000
MEASURE	mADC	20.0000	19.9947	20.0053	19.9980	19.9980	maDC	0.0016		0.0020
										0
MEASURE	OHMS 11 RANGE	0.000	-0.050	0.050	0.000	0.000	Ohm	0.042		0.000
MEASURE	OHMS 11 RANGE	10.000	9.945	10.055	10.000	10.000	Ohm	0.025		0.000



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MEASURE	OHMS 110 RANGE	0.00	-0.05	0.05	0.000	0.000	Ohm	0.042		0.000
MEASURE	OHMS 110 RANGE	100.00	99.90	100.10	100.000	100.000	Ohm	0.025		0.000
MEASURE	OHMS 1100 RANGE	0.00	-0.50	0.50	0.000	0.000	Ohm	0.042		0.000
MEASURE	OHMS 1100 RANGE	1000	999	1001	1000	1000	Ohm	0.34		0
										0
SOURCE	mVDC	100.000	99.985	100.016	100.002	100.002	mVDC	0.01		-0.002
SOURCE	mVDC	120.000	119.933	120.067	120.000	120.000	mVDC	0.062		0.000
SOURCE	mVDC	1000.00	999.85	1000.16	1000.04	1000.04	mVDC	0.53		-0.04
SOURCE	mVDC	14000.0	13997.9	14002.2	14000.0	14000.0	mVDC	5.8		0.0
										0
SOURCE	mADC	2.0000	1.9965	2.0035	2.0010	2.0010	maDC	0.01		-0.0010
SOURCE	mADC	4.0000	3.9963	4.0037	4.0010	4.0010	maDC	0.01		-0.0010
SOURCE	mADC	22.0000	21.9945	22.0055	22.0010	22.0010	maDC	0.012		-0.0010
										0
SOURCE	OHMS 11 RANGE	0.100	0.080	0.120	0.099	0.099	Ohm	0.02		0.001
SOURCE	OHMS 11 RANGE	1.000	0.980	1.020	0.999	0.999	Ohm	0.02		0.001
SOURCE	OHMS 11 RANGE	10.000	9.979	10.021	10.000	10.000	Ohm	0.02		0.000
SOURCE	OHMS 110 RANGE	20.000	19.958	20.042	20.001	20.001	Ohm	0.02		-0.001
SOURCE	OHMS 110 RANGE	100.000	99.950	100.050	100.001	100.001	Ohm	0.02		-0.001
SOURCE	OHMS 1100 RANGE	200.000	199.460	200.540	199.990	199.990	Ohm	0.11		0.010
SOURCE	OHMS 1100 RANGE	1000.00	999.30	1000.70	999.95	999.95	Ohm	0.11		0.05
SOURCE	K OHMS 11K RANGE	2.0000	1.9944	2.0056	1.9999	1.9999	kOhm	0.0011		0.0001
										0
MEASURE	RTD PLT 100 OHM	-180.0	-180.3	-179.7	-180.0	-180.0	DEG C.	0.63		0.0



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Calibration Laboratory
CERT#2230.01

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Group	Description	Nominal	Lower Tol.	Upper Tol.	As Found	As Left	Units	Uncert.	OOT	Corr. Factor
MEASURE	385 CURVE	100.0	99.5	100.5	100.0	100.0	DEG C.	0.049		0.0
										0
SOURCE	RTD OHMS 385	100.0	99.5	100.5	100.000	100.000	DEG C.	0.049		0.000

Standards Used

I.D.	Model	Description	Manufacturer	Serial No.
1546	525B	TEMP/PRESSURE CALIBRATOR	FLUKE	2041092
1731	34401A	DIGITAL MULTIMETER	HEWLETT PACKARD/AGILENT	3146A27542

Procedures Used

Name	Description
WI-523	CALIBRATION OF TEST CALIBRATORS