

ILLIANA INSTRUMENTATION

1831 Govert Drive Schererville, IN 46375 Phone (219)227-8788 Fax (219)515-6161

CERTIFICATE OF CALIBRATION

CUSTOMER:	MISCELLANEOUS DETAILS:
Illiana Instrumentation Service 1831 Govert Drive Schererville, IN 46375	Date Received 7/12/19 Certification Date: 7/12/19 Recalibration Date: 10/12/19 Cal. Number: 1468-071219 P.O. Number: Location of Calibration: Lab Detailed Results Attached: YES Procedure Used: Fluke Procedure

EQUIPMENT CALIBRATED
MANUFACTURER: Fluke
MODEL: 725
SERIAL NUMBER: 1100083
ITEM NUMBER: 1468
DESCRIPTION: Calibrator
CONDITION AS FOUND: In tolerance

STANDARDS USED
Item 1546, Fluke 525B; Item 1205 HP34401A

TEST CONDITIONS
TEMPERATURE 77 Deg F.
HUMIDITY 32% rH

CERTIFIED BY: Paul Kroll TITLE: ISA CCST III DATE 7/12/19
 APPROVED BY: Spina Brosia TITLE: Deputy Quality Mgr. DATE 7/12/19

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.

Item	1468 Fluke 725									
Accuracy:	Varies By Range									
Date:	7/12/2019									
Intentional Offset as Found	None									
Intentional Offset as Left	None									
Limitations	None									
Input range	Eng. Units	Cal Pt	Upper	lower	Initial	Final	Sensitivity	STD	Unc.	
							Check			
Meas VDC Upper Display	VDC	0	0.002	-0.002	0	0	OK	1546	0.0000033	
		15	15.005	14.995	15	15	OK	1546	0.005	
		30	30.008	29.992	30	30	OK	1546	0.005	
Meas mVDC on lower display	mDVC	0	0.02	-0.02	0	0	OK	1546	0.0033	
		45	45.03	44.97	44.99	44.99	OK	1546	0.0033	
		90	90.04	89.96	89.99	89.99	OK	1546	0.0033	
Lower display voltage measure	VDC	0	0.002	-0.002	0	0	OK	1546	0.0000033	
		10	10.004	9.996	9.998	9.998	OK	1546	0.005	
		20	20.006	19.994	19.996	19.996	OK	1546	0.005	
Meas mADC 30 mADC upper display	mADC	4	4.003	3.997	3.999	3.999	OK	1546	0.0016	
		12	12.005	11.995	12	12	OK	1546	0.0016	
		24	24.007	23.993	23.999	23.999	OK	1546	0.0057	
Meas mADC 30 mADC lower display	mADC	4	4.003	3.997	3.999	3.999	OK	1546	0.0016	
		12	12.005	11.995	11.998	11.998	OK	1546	0.0016	
		24	24.007	23.993	23.998	23.998	OK	1546	0.0057	
Frequency source lower display	kHz	10	10.025	9.975	9.9998	9.9998	OK	1205	0.0033	
Lower display 4 wire resistance measure	Ohms	15	15.1	14.9	15.04	15.04	OK	1546	0.025	
		350	350.1	349.9	350.07	350.07	OK	1546	0.025	
		500	500.5	499.5	499.9	499.9	OK		0.049	
Lower display 3 wire RTD measure	Ohms	350	350.2	349.8	350	350	OK	1546	0.049	
Measure K	C	-180	-179.4	-180.6	-180.2	-180.2	OK	1546	0.17	
Measure K	C	0	0.6	-0.6	-0.1	-0.1	OK	1546	0.17	
Measure K	C	400	400.6	399.4	399.9	399.9	OK	1546	0.17	
Measure K	C	800	800.8	799.2	799.8	799.8	OK	1546	0.17	
Measure K	C	1000	1001	999	999.8	999.8	OK	1546	0.17	
Measure K	C	1300	1301.3	1298.7	1299.8	1299.8	OK	1546	0.17	
Simulate K	C	-180	-179.4	-180.6	-179.8	-179.8	OK	1546	0.16	
Simulate K	C	0	0.6	-0.6	0	0	OK	1546	0.16	
Simulate K	C	400	400.6	399.4	400.1	400.1	OK	1546	0.16	
Simulate K	C	800	800.8	799.2	800	800	OK	1546	0.16	
Simulate K	C	1000	1001	999	1000	1000	OK	1546	0.16	
Simulate K	C	1300	1301.3	1298.7	1300	1300	OK	1546	0.16	
Measure J	C	-200	-199.4	-200.6	-200.4	-200.4	OK	1546	0.15	
Measure J	C	0	0.6	-0.6	-0.2	-0.2	OK	1546	0.15	
Measure J	C	300	300.6	299.4	299.8	299.8	OK	1546	0.15	
Measure J	C	600	600.6	599.4	599.7	599.7	OK	1546	0.15	
Measure J	C	900	900.9	899.1	899.8	899.8	OK	1546	0.15	
Measure J	C	1200	1201.2	1198.8	1199.8	1199.8	OK	1546	0.15	
Simulate J	C	-200	-199.4	-200.6	-199.4	-199.4	OK	1546	0.13	
Simulate J	C	0	0.6	-0.6	0.2	0.2	OK	1546	0.13	
Simulate J	C	300	300.6	299.4	300.2	300.2	OK	1546	0.13	
Simulate J	C	600	600.6	599.4	600.2	600.2	OK	1546	0.13	
Simulate J	C	900	900.9	899.1	900.2	900.2	OK	1546	0.13	
Simulate J	C	1200	1201.2	1198.8	1200.2	1200.2	OK	1546	0.13	

Input range	Eng. Units	Cal Pt	Upper	lower	Initial	Final	Sensitivity	STD	Unc.
							Check		
Measure S	C	1000	1001	999	999	999	OK	1546	0.67
Measure S	C	1150	1151.5	1148.5	1149	1149	OK	1546	0.58
Measure S	C	1300	1301.3	1298.7	1299	1299	OK	1546	0.58
Measure S	C	1450	1451.5	1448.5	1449	1449	OK	1546	0.58
Measure S	C	1600	1601.6	1598.4	1599	1599	OK	1546	0.58
Measure S	C	1750	1751.75	1748.25	1749	1749	OK	1546	0.58
Simulate S	C	1000	1001	999	1000.5	1000.5	OK	1546	0.67
Simulate S	C	1150	1151.5	1148.5	1150.6	1150.6	OK	1546	0.58
Simulate S	C	1300	1301.3	1298.7	1300.5	1300.5	OK	1546	0.58
Simulate S	C	1450	1451.5	1448.5	1450.6	1450.6	OK	1546	0.58
Simulate S	C	1600	1601.6	1598.4	1600.4	1600.4	OK	1546	0.58
Simulate S	C	1750	1751.75	1748.25	1750.5	1750.5	OK	1546	0.58
Measure N	C	0	0.6	-0.6	-0.4	-0.4	OK	1546	0.2
Measure N	C	200	200.6	199.4	199.6	199.6	OK	1546	0.2
Measure N	C	500	500.6	499.4	499.7	499.7	OK	1546	0.2
Measure N	C	800	800.8	799.2	799.6	799.6	OK	1546	0.2
Measure N	C	1100	1101.1	1098.9	1099.6	1099.6	OK	1546	0.2
Measure N	C	1300	1301.3	1298.7	1299.6	1299.6	OK	1546	0.2
Source N	C	0	0.6	-0.6	0.5	0.5	OK	1546	0.18
Source N	C	200	200.6	199.4	200.4	200.4	OK	1546	0.18
Source N	C	500	500.6	499.4	500.4	500.4	OK	1546	0.18
Source N	C	800	800.8	799.2	800.3	800.3	OK	1546	0.18
Source N	C	1100	1101.1	1098.9	1100.3	1100.3	OK	1546	0.18
Source N	C	1300	1301.3	1298.7	1300.4	1300.4	OK	1546	0.18
Measure T	C	-200	-199.4	-200.6	-200	-200	OK	1546	0.74
Measure T	C	0	0.6	-0.6	0	0	OK	1546	0.35
Measure T	C	100	100.6	99.4	100	100	OK	1546	0.35
Measure T	C	200	200.6	199.4	200	200	OK	1546	0.35
Measure T	C	300	300.6	299.4	300	300	OK	1546	0.35
Measure T	C	400	400.6	399.6	399.9	399.9	OK	1546	0.35
Source T	C	-200	-199.4	-200.6	-199.9	-199.9	OK	1546	0.73
Source T	C	0	0.6	-0.6	0.1	0.1	OK	1546	0.33
Source T	C	100	100.6	99.4	100	100	OK	1546	0.33
Source T	C	200	200.6	199.4	200.1	200.1	OK	1546	0.33
Source T	C	300	300.6	299.4	300	300	OK	1546	0.33
Source T	C	400	400.6	399.6	400	400	OK	1546	0.33
Source mADC lower display	mADC	4	4.0028	3.9972	4.0018	4.0018	OK	1205	0.01
		12	12.0044	11.9956	12.003	12.003	OK	1205	0.01
		24	24.0068	23.9932	24.006	24.006	OK	1205	0.012
Source mVDC lower display	mVDC	0	0.02	-0.02	0	0	OK	1205	0.0045
		45	45.03	44.97	44.997	44.997	OK	1205	0.01
		100	100.04	99.96	99.997	99.997	OK	1205	0.01
Source VDC lower display	VDC	0	0.002	-0.002	0	0	OK	1205	0.0000045
		5	5.003	4.997	5.0001	5.0001	OK	1205	0.00053
		10	10.004	9.996	10.0003	10.0003	OK	1205	0.0058
Lower display ohm source	Ohms	15	15.1	14.9	15.1	15.1	OK	1205	0.0018
		360	360.1	359.9	360.1	360.1	OK	1205	0.016
		500	500.5	499.5	500.4	500.4	OK	1205	0.016
		1500	1500.5	1499.5	1500.3	1500.3	OK	1205	0.016
		3200	3201	3199	3200.2	3200.2	OK	1205	0.016