

INSTRUMART

CERTIFICATE OF CALIBRATION

Date of Issue 6/25/2021

Due Date 6/25/2022


Certificate

INS19007

Page 1 of 6

Laboratory Address :

35 Green Mountain Drive
South Burlington, VT 05403



Approved Signatory

R. Hammond

A. Cota

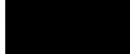
M. Francis

R. Chandler

M. Dion

Customer :



Instrument - System ID : D0G007833
Description : Pressure Calibrator
Manufacturer : Druck
Model Number : DPI620G
Serial Number : 
Procedure Version

Environmental Conditions

Temperature : 20°C ± 0°C

Mains Voltage : 120V ± 20V


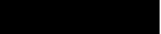
Relative Humidity 50%RH ± 50%RH

Mains Frequency 60Hz ± 0Hz

Comments

Instrument was placed in lab and allowed to stabilize before calibration.

Traceability Information

Instrument Description	Serial Number	Certificate Number	Cal. Date	Period [Weeks]
3010A Precision Multi-Product Calibrator		AC-26100	11/4/20	52
8081 Multimeter		AC-26105	11/4/20	52

Calibrated By : A. Cota

Date of Calibration : 6/25/2021

This certificate provides traceability of measurement to recognized National Standards, and to the units of measurements realized at the National Physical Laboratory (NPL), National Institute of Standards & Technology (NIST) or other recognized National standards laboratories.

Copyright of this certificate is owned by the issuing laboratory and may not be reproduced except with the prior written approval of the issuing laboratory.

INSTRUMART

CERTIFICATE OF CALIBRATION

Certificate

INS19007

Page 2 of 6

Test Title	Tolerance	Applied Value	Reading	Pass / Fail
DC Voltage Measure ± 30V				
-30 to 30 VDC Range	5.6mV	-30.00000V	-29.9996V	PASS
-30 to 30 VDC Range	4.2mV	-21.00000V	-20.9996V	PASS
-30 to 30 VDC Range	3.3mV	-20.000000V	-19.99977V	PASS
-30 to 30 VDC Range	1.9mV	-10.000000V	-9.99982V	PASS
-30 to 30 VDC Range	1.1mV	-5.000000V	-4.99985V	PASS
-30 to 30 VDC Range	400uV	0.000000V	0.00002V	PASS
-30 to 30 VDC Range	1.1mV	5.000000V	4.99987V	PASS
-30 to 30 VDC Range	1.9mV	10.000000V	9.99982V	PASS
-30 to 30 VDC Range	3.3mV	20.000000V	19.99985V	PASS
-30 to 30 VDC Range	4.1mV	21.00000V	20.9999V	PASS
-30 to 30 VDC Range	5.6mV	30.00000V	29.9999V	PASS
DC Millivolt Measure ± 2000 mV				
2000 mVDC Range	290uV	-2000.000mV	-2000.00mV	PASS
2000 mVDC Range	195uV	-1000.000mV	-999.99mV	PASS
2000 mVDC Range	12uV	-200.0000mV	-199.998mV	PASS
2000 mVDC Range	11uV	-100.0000mV	-100.000mV	PASS
2000 mVDC Range	10uV	0.0000mV	-0.002mV	PASS
2000 mVDC Range	11uV	100.0000mV	99.998mV	PASS
2000 mVDC Range	12uV	200.0000mV	199.996mV	PASS
2000 mVDC Range	195uV	1000.000mV	999.99mV	PASS
2000 mVDC Range	290uV	2000.000mV	2000.00mV	PASS
AC Voltage Measure 0 to 20 V				
0 to 20 VAC Range	40mV	5.0000V	5.003V	PASS
0 to 20 VAC Range	50mV	10.0000V	10.002V	PASS
0 to 20 VAC Range	70mV	20.0000V	19.996V	PASS
AC Millivolt Measure 0 to 2000 mV				
0 to 2000 mVAC Range	3mV	10.00mV	10.0mV	PASS
0 to 2000 mVAC Range	4mV	500.00mV	499.3mV	PASS
0 to 2000 mVAC Range	5mV	1000.00mV	999.8mV	PASS
0 to 2000 mVAC Range	7mV	2000.00mV	1999.9mV	PASS
DC Voltage Source 0to 20 V				
0 to 20 VDC Range	400uV	0.000V	-0.0002V	PASS
0 to 20 VDC Range	1.1mV	5.000V	4.9996V	PASS
0 to 20 VDC Range	1.9mV	10.000V	9.9998V	PASS
0 to 20 VDC Range	2.6mV	15.000V	14.9997V	PASS
0 to 20V VDC Range	3.3mV	20.000V	20.0000V	PASS

INSTRUMART

CERTIFICATE OF CALIBRATION

Certificate

INS19007

Page 3 of 6

Test Title	Tolerance	Applied Value	Reading	Pass / Fail
DC Millivolt Source 0 to 2000 mV				
0 to 2000 mVDC Range	10uV	0.0mV	0.00mV	PASS
0 to 2000 mVDC Range	20uV	100.0mV	100.00mV	PASS
0 to 2000 mVDC Range	30uV	200.0mV	200.00mV	PASS
0 to 2000 mVDC Range	190uV	1000.0mV	1000.01mV	PASS
0 to 2000 mVDC Range	280uV	2000.0mV	2000.00mV	PASS
Cold Junction Temperature				
Cold Junction	100m°C	0.00°C	-0.07°C	PASS
DC Current Measure ±55 mA				
55mA D.C. Range	11.5uA	-55.00000mA	-54.9957mA	PASS
55mA D.C. Range	6.7uA	-25.00000mA	-24.9983mA	PASS
55mA D.C. Range	3.6uA	-20.00000mA	-19.9996mA	PASS
55mA D.C. Range	2.4uA	-10.00000mA	-9.9998mA	PASS
55mA D.C. Range	1.8uA	-5.00000mA	-4.9999mA	PASS
55mA D.C. Range	1.2uA	0.00000mA	0.0000mA	PASS
55mA D.C. Range	1.8uA	5.00000mA	4.9998mA	PASS
55mA D.C. Range	2.4uA	10.00000mA	9.9998mA	PASS
55mA D.C. Range	3.6uA	20.00000mA	19.9998mA	PASS
55mA D.C. Range	6.7uA	25.00000mA	24.9977mA	PASS
55mA D.C. Range	11.5uA	55.00000mA	54.9949mA	PASS
Resistance Measure 0 to 4000 Ohms				
0 to 4K R	24m	0.0000	0.013	PASS
0 to 4K R	39mΩ	100.1081Ω	100.124Ω	PASS
0 to 4K R	54mΩ	200.0773Ω	200.094Ω	PASS
0 to 4K R	84mΩ	400.2711Ω	400.297Ω	PASS
0 to 4K R	150.2mΩ	1000.745Ω	1000.75Ω	PASS
0 to 4K R	540mΩ	2000.281Ω	2000.23Ω	PASS
0 to 4K R	840mΩ	4000.431Ω	4000.48Ω	PASS
Resistance Measure 0 to 4000 Trueohms				
0 to 4K R	4.8mΩ	0.0000Ω	0.004Ω	PASS
0 to 4K R	13.8mΩ	100.1081Ω	100.117Ω	PASS
0 to 4K R	22.8mΩ	200.0773Ω	200.092Ω	PASS
0 to 4K R	40.8mΩ	400.2711Ω	400.287Ω	PASS
0 to 4K R	138mΩ	1000.745Ω	1000.76Ω	PASS
0 to 4K R	228mΩ	2000.281Ω	2000.40Ω	PASS
0 to 4K R	408mΩ	4000.431Ω	4000.54Ω	PASS
DC Current Source 0 to 24 mA				
DC Current 0 to 24mA	1.5uA	0.200mA	0.2000mA	PASS
DC Current 0 to 24mA	3.1uA	6.000mA	6.0000mA	PASS
DC Current 0 to 24mA	6uA	12.000mA	11.9996mA	PASS
DC Current 0 to 24mA	6.9uA	18.000mA	17.9999mA	PASS
DC Current 0 to 24mA	7.8uA	24.000mA	24.0000mA	PASS

INSTRUMART

CERTIFICATE OF CALIBRATION

Certificate

INS19007

Page 4 of 6

Test Title	Tolerance	Applied Value	Reading	Pass / Fail
Resistance Source 0to 4000 Ohms				
Resistance 0 to 4k Ω	112m Ω	0.00 Ω	0.008 Ω	PASS
Resistance 0 to 4k Ω	109.2m Ω	100.00 Ω	100.010 Ω	PASS
Resistance 0 to 4k Ω	328m Ω	200.00 Ω	200.005 Ω	PASS
Resistance 0 to 4k Ω	344m Ω	400.00 Ω	400.002 Ω	PASS
Resistance 0 to 4k Ω	841m Ω	1000.00 Ω	999.993 Ω	PASS
Resistance 0 to 4k Ω	1.4 Ω	2000.00 Ω	1999.840 Ω	PASS
Resistance 0 to 4k Ω	2 Ω	3000.00 Ω	2999.987 Ω	PASS
Resistance 0 to 4k Ω	2.6 Ω	4000.00 Ω	3999.959 Ω	PASS
Frequency Measurement 0 to 50 kHz				
50 kHz Range	5mHz	100.00000Hz	99.9998Hz	PASS
50 kHz Range	32mHz	1000.00000Hz	999.9980Hz	PASS
50 kHz Range	340mHz	10.00000kHz	9.99998kHz	PASS
50 kHz Range	1.7Hz	50.00000kHz	49.99990kHz	PASS
Frequency Source 0 to 50 kHz				
50 kHz Range	1Hz	100.0Hz	100.00Hz	PASS
50 kHz Range	42.3mHz	1000.0Hz	1000.00Hz	PASS
50 kHz Range	5.3Hz	10.000kHz	10.0000kHz	PASS
50 kHz Range	6.5Hz	50.000kHz	50.0000kHz	PASS
Thermocouple Measure -10 to 100 mV				
TC MV Measure	10.7uV	-10.0000mV	-9.994mV	PASS
TC MV Measure	10uV	0.0000mV	0.000mV	PASS
TC MV Measure	10.7uV	10.0000mV	10.003mV	PASS
TC MV Measure	11.8uV	25.0000mV	25.003mV	PASS
TC MV Measure	13.5uV	50.0000mV	50.003mV	PASS
TC MV Measure	8uV	100.0000mV	100.002mV	PASS
Thermocouple Source-10 to 100 mV				
TC mV Source	11.4uV	-10.000mV	-9.9964mV	PASS
TC mV Source	10uV	0.000mV	0.0037mV	PASS
TC mV Source	11.4uV	10.000mV	10.0025mV	PASS
TC mV Source	13.5uV	25.000mV	25.0024mV	PASS
TC mV Source	17uV	50.000mV	50.0033mV	PASS
TC mV Source	24uV	100.000mV	100.0054mV	PASS
DC Voltage Measure \pm 30V (Channel2)				
-30 to 30 VDC Range	5.6mV	-30.00000V	-29.9996V	PASS
-30 to 30 VDC Range	4.2mV	-21.00000V	-20.9994V	PASS
-30 to 30 VDC Range	3.3mV	-20.000000V	-20.00002V	PASS
-30 to 30 VDC Range	1.9mV	-10.000000V	-9.99990V	PASS
-30 to 30 VDC Range	1.1mV	-5.000000V	-4.99992V	PASS
-30 to 30 VDC Range	400uV	0.000000V	0.00000V	PASS
-30 to 30 VDC Range	1.1mV	5.000000V	4.99988V	PASS
-30 to 30 VDC Range	1.9mV	10.000000V	9.99985V	PASS
-30 to 30 VDC Range	3.3mV	20.000000V	19.99998V	PASS

INSTRUMART

CERTIFICATE OF CALIBRATION

Certificate

INS19007

Page 5 of 6

Test Title	Tolerance	Applied Value	Reading	Pass / Fail
-30 to 30 VDC Range	4.2mV	21.00000V	21.0000V	PASS
-30 to 30 VDC Range	5.6mV	30.00000V	30.0000V	PASS
DC Millivolt Measure ± 2000 mV (Channel 2)				
2000 mVDC Range	290uV	-2000.000mV	-2000.02mV	PASS
2000 mVDC Range	195uV	-1000.000mV	-1000.00mV	PASS
2000 mVDC Range	30uV	-200.0000mV	-200.002mV	PASS
2000 mVDC Range	20uV	-100.0000mV	-100.002mV	PASS
2000 mVDC Range	10uV	0.0000mV	-0.002mV	PASS
2000 mVDC Range	20uV	100.0000mV	99.997mV	PASS
2000 mVDC Range	30uV	200.0000mV	199.994mV	PASS
2000 mVDC Range	195uV	1000.000mV	999.99mV	PASS
2000 mVDC Range	290uV	2000.000mV	2000.00mV	PASS
DC Current Measure (Channel 2)				
55mA D.C. Range	9.3uA	-55.0000mA	-54.9949mA	PASS
55mA D.C. Range	6.7uA	-25.0000mA	-24.9975mA	PASS
55mA D.C. Range	3.6uA	-20.0000mA	-19.9992mA	PASS
55mA D.C. Range	2.4uA	-10.0000mA	-9.9997mA	PASS
55mA D.C. Range	1.8uA	-5.0000mA	-4.9998mA	PASS
55mA D.C. Range	1.2uA	0.0000mA	0.0000mA	PASS
55mA D.C. Range	1.8uA	5.0000mA	4.9999mA	PASS
55mA D.C. Range	2.4uA	10.0000mA	9.9998mA	PASS
55mA D.C. Range	3.6uA	20.0000mA	19.9997mA	PASS
55mA D.C. Range	6.7uA	25.0000mA	24.9967mA	PASS
55mA D.C. Range	11.5uA	55.0000mA	54.9932mA	PASS
DC Current Source 0to 24 mA (Channel 2)				
DC Current 0 to 24mA	1.3uA	0.2000mA	0.19987mA	PASS
DC Current 0 to 24mA	2.2uA	6.0000mA	5.99979mA	PASS
DC Current 0 to 24mA	3.3uA	12.0000mA	11.99963mA	PASS
DC Current 0 to 24mA	4.2uA	18.0000mA	18.00012mA	PASS
DC Current 0 to 24mA	5.1uA	24.0000mA	23.99980mA	PASS

INSTRUMART

CERTIFICATE OF CALIBRATION

Certificate

INS19007

Page 6 of 6

Test Title	Tolerance	Applied Value	Reading	Pass / Fail
------------	-----------	---------------	---------	-------------

******END OF TEST DATA******

Uncertainties

D.C. Voltage : 0 to 1000V: 0.002% ± 1digit

A.C. Voltage : 0 to 1000V: 0.01% ± 1digit

D.C. Current : 0 to 10A: 0.008% ± 1digit

Resistance : 0 to 10MOhms 0.005% ± 1digit: 10Mohms to 1Gohm 0.4% ± 1 digit

Frequency : 0.1ppM ± 1digit

Sim. Temperature : -100°C to 1700°C : 0.1°C