

Paroscientific, Inc.

4500 148th Ave. NE
Redmond, WA 98052
Tel: (425) 883-8700 Fax: (425) 867-5407

Service Report Number: 12885

Rev. Initials:

Rev. Date

Date Received: 12/11/2023

Tel: 858-232-1848

Company: UNIV. OF ALASKA

Fax/Email: ehroth@alaska.edu

Serial Number	Part Number	Model Number	Warranty	NCR	Original Zero Date	Customer Comment/ Reason for Return
155030	1564-301	MET4A	<input type="checkbox"/>		11/23/2021	For calibration

<p>Customer Supplied Box</p> <p><input type="checkbox"/> YES</p> <p><input checked="" type="checkbox"/> NO</p>	<p>External Condition</p> <p><input type="checkbox"/> LIKE NEW</p> <p><input checked="" type="checkbox"/> FAIR</p> <p><input type="checkbox"/> POOR</p> <p>Comments: <input type="text"/></p>	<p>Offset Error (ppm) <input type="text" value="150"/></p> <p>Current Draw (mA) <input type="text" value="184"/></p> <p>Firmware Version <input type="text" value="M3.10"/></p>
<p>Accessories Returned</p> <p><input type="checkbox"/> Cable</p> <p><input type="checkbox"/> Manual</p> <p>Other: <input type="text" value="none"/></p>	<p>Pressure Port</p> <p><input type="checkbox"/> BLOCKED</p> <p><input type="checkbox"/> PARTIALLY BLOCKED</p> <p><input checked="" type="checkbox"/> CLEAR</p> <p><input type="checkbox"/> N/A-ACCELEROMETER</p> <p>Comments: <input type="text"/></p>	<p>Oil Level</p> <p><input type="checkbox"/> FULL</p> <p><input type="checkbox"/> OIL VISIBLE</p> <p><input type="checkbox"/> LOW OIL</p> <p><input type="checkbox"/> NO OIL VISIBLE</p> <p><input checked="" type="checkbox"/> N/A</p>
<p>MET Products</p> <p>RH <input type="text" value="41.80"/></p> <p>TEMP <input type="text" value="18.00"/></p>		<p>Elec. Isolation:</p> <p><input type="checkbox"/> PASS</p> <p><input type="checkbox"/> FAIL</p> <p><input checked="" type="checkbox"/> N/A</p>

Analysis: The exterior surfaces of the unit have scratches and there is a label attached to the housing. The LED panel is covered with black adhesive tape. The solar radiation shield has a dent. Incoming functional test was performed. Both RS-232/485 communications were established. The relative error of the pressure sensor was 150ppm when compared to a reference laboratory barometer. The unique status setting is MD=8. The aspirator fan is functional. Unable to verify the functionality of the LED lamps on the panel due to the tape adhesive covering.

Recommendations: Option 1 - Perform zero adjust calibration to the barometer which includes NIST certificate. Return with unique status setting of MD=8. \$1,050.00

Option 2 - Perform zero and span calibration to the barometer which includes AS FOUND and AS LEFT data with NIST certificate. Return with unique status setting of MD=8. \$3,000.00

*Quotation is valid for one month from the "Date Analysis Completed." Products remaining at Paroscientific after 2 months will be returned and an evaluation fee will be charged for each product.

CUSTOMER COPY

Service Report Number: 12885

Rev. Initials:

Rev. Date

Date Analysis

Completed:

12/14/2023

Completed By:

M. Hao

Charges:*

*Quotation is valid for one month from the "Date Analysis Completed." Products remaining at Paroscientific after 2 months will be returned and an evaluation fee will be charged for each product.

CUSTOMER COPY

Paroscientific, Inc.
Pressure Instrument Configuration

SN: 155030 Part Number: 1564-301 Model: MET4A Port:
 Calibration Date: 20-Dec-23 Report No: 26510 Technician: WMR
 Pressure Range: 500 to 1100 hPa Temperature Range: -40 to +60 deg C

Customer: University Of Alaska Report Date: 26-Dec-23
 Address : 201 Railway Ave. Sales Order: 39432
 Seward, AK 99664 USA S/R Number : 12885

Configuration		Calibration Coefficients	
BL: 0	PT: N	U0: 5.803374	µsec
BR: 9600	QD: -	Y1: -3968.637	deg C / µsec
DD: -	QO: -	Y2: -11756.84	deg C / µsec ²
DL: 0	SL: 0	Y3: 0	deg C / µsec ³
DM: 0	SN: 155030	C1: 97.99536	psi
DO: 0	ST: 10	C2: 5.105974	psi / µsec
DP: 6	SU: 0	C3: -66.60543	psi / µsec ²
ID: 01	TI: 666	D1: 0.0306493	
IM: -	TR: 952	D2: 0.0000000	
LL: -	TU: 0	T1: 27.68529	µsec
LH: -	UF: 1.0000000	T2: 0.647786	µsec / µsec
MC: Y	UL:	T3: 20.80113	µsec / µsec ²
MD: 0	UM: user	T4: 0	µsec / µsec ³
MN: MET4A	UN: 3	T5: 0.000	µsec / µsec ⁴
OP: -	US: 0	TC: 0.6781689	
PF: 1.103161	VR: M3.10	PA: -0.0002344	
PI: 666	ZI: 0	PM: 1.0001140	
PL: 19.000000	ZS: 0		
PO: 0	ZL: 0		
PR: 238	ZV: .0000000		
PS: 0			

Met4/Met4A Coefficients		
GD: 0	JC: .00000000	LN: 0
GT: 0	JD: .0	LO: 00:00:00
PC: -	JE: 0	LT: .00000000
HY: 2	JF: .0	LW: 0
H1: 20409170	JG: 0	PX: 3
S1: 1.0000000	JJ: 0	
S2: 1.0000000	JK: 0	
Z1: 0	JS: .0	
Z2: 0	JU: 0	

Paroscientific, Inc.
 4500 148th Ave. N.E. Redmond, WA 98052
 Phone: (425)883-8700 Fax: (425)867-5407
 Web: <http://www.paroscientific.com>
 Email: support@paroscientific.com

Data as Left

Prepared by



CERTIFICATE OF CONFORMANCE

CUSTOMER: UNIVERSITY OF ALASKA SIKULIAQ

PURCHASE ORDER: EMAIL DT: 12/14/23

DIGIQUARTZ MODEL: MET4A

PART NUMBER: 1564-301

SERIAL NUMBER(S): 155030

PAROSCIENTIFIC INCORPORATED certifies that the part(s) identified above complies with the requirements of the above order and has been manufactured in accordance with engineering drawings, material and process specifications, testing procedures, and applicable specification drawing of Paroscientific Incorporated. The Digiquartz model(s) identified has been calibrated and tested over the specified pressure and temperature range and meets the requirements of the applicable specification drawing. Primary pressure, temperature standards and transfer standards used at Paroscientific Incorporated for calibration and testing have traceability to the National Institute of Standards and Technology and to the SI through recognized national measurement institutes, ratiometric techniques or natural physical constraints and are regularly checked and calibrated according to Paroscientific QA Procedure Q8521, Inspection Test and Measurement Equipment, in accordance with the requirements of ISO 9001:2015.

Paroscientific
QA/Shipping
Inspection

12-27-2023

AUTHORIZED SIGNATURE

DATE

QUALITY ASSURANCE REPRESENTATIVE

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CERTIFICATION OF TRACEABILITY
to
The SI and
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

Primary pressure and temperature standards used in the calibration and testing of Paroscientific Digiquartz Models have traceability to the National Institute of Standards and Technology and to the SI through the following documentation.

Bell and Howell Primary Pressure Standard:

Bell and Howell, Model 6-201-0001, Piston/Cylinder P2-919/C2-1523 via DH Calibration Report No. 15441, 16653 and 1500190591 traceable to NIST. Weight Set 1, P/N 6-002-0002, via DH Calibration Report No. 14481, 16654, 1284473284 and 1500190311 traceable to NIST. Weight Set 2, P/N 6-002-0002, via DH Calibration Report No. 31227, 39628, 68390, 1317389777, 1500156263, 1500195122 and 1500238176-1 traceable to NIST. Piston/Cylinder P2-652/C2-1378 via DH Instruments Calibration Report No. 31226, 39627, 68389, 1317739617, 1500156259, 1500195119 and 1500238175 traceable to NIST. Piston/Cylinder P1-231/C1-384 via DH Instruments Calibration Report No. 13170 and 1284475131 traceable to NIST. Piston/Cylinder P/N 6-201, No. P1-949/C1-922, via DH Instruments Calibration Report 17176 and 17445, traceable to NIST.

DH Primary Pressure Standard, Oil Operated Gauge:

DH Instruments, Model 5306, Piston/Cylinder S/N 3375, via DH Calibration Certificate Report No. 32354, 45306, 66563, 1305698573, 1500163455 and 1500217726 traceable to NIST and to the SI. Piston/Cylinder 3511 via DH Calibration Report No. 32353, 45307, 66562, 1305625084, 1500163363 and 1500217811 traceable to NIST and to the SI. Mass Set S/N 2032 via DH Calibration Report No. 45305, 45308, 1305538925, 1305530461, 150016339, 1500163394 and 150021768 traceable to NIST and to the SI.

DH Primary Pressure Standard, Pneumatic Operated Gauge:

DH Instruments, Model 5203, Piston/Cylinder S/N 4845, via DH Calibration Certificate No. 38275, 1300177141, 1500162809 and 1500217494 traceable to NIST and to the SI. Mass Set S/N 2032/3293 via DH Calibration Certificate No. 45305, 1300200369, 1500162832 and 1500217766 traceable to NIST and to the SI.

DH Primary Pressure Standard, Pneumatic Operated Gauge:

DH instruments, Model PG7601 via DH Instruments Calibration No. 69127, 1500172365 and 1500278487 traceable to NIST. Piston/Cylinder S/N 305 via DH Instruments Calibration No. 69125, 1500172367, 1500278543 traceable to NIST. DH Instruments 35 kg Mass Set No. 2052 and Bell No. 261A via DH Instruments Calibration Report No. 69126, 69124, 1500172362, 1500172363, 1500277884 and 1500277905 traceable to NIST.

Hygroclip S3 MET4/4A Part number 1560-XXX and 1561-XXX:

Humidity and Temperature calibrations are traceable to NIST through Rotronic Instrument Corporation; 160 E. Main Street, Huntington, NY 11743.

Hygroclip HC2-S3 MET4/4A Part number 1563-XXX and 1564-XXX Swiss Calibration Service (SCS)

Humidity and Temperature calibrations are traceable to SCS through Rotronic AG Grindelstrasse 6 8303 Bassersdorf Phone: 044-838-1111 E-mail: info@rotronic.ch



CERTIFICATE OF CALIBRATION

DIGIQUARTZ MODEL: MET4A

SERIAL NUMBER(S): 155030

The Paroscientific Digiquartz Model (s) identified above has been calibrated and tested with one or more of the following primary pressure standards. All have traceability to the National Institute of Standards and Technology and to the SI.

Bell and Howell Primary Pressure Standard

Pneumatic Absolute or Gauge Dead Weight Tester Part Number: 6-201-0001, S/N 4034 and S/N 1014

- | | | | |
|-------------------------------------|--|--------------------------|--|
| <input type="checkbox"/> | Piston/Cylinder: 6-001-0002, P2-919/C2-1523,
Weight Set 1: 6-002-0002
Range: 1.5 to 50 psi [10 to 345 kPa]
Accuracy: 0.010 percent of reading | <input type="checkbox"/> | Piston/Cylinder: 6-001-0001, P1-949/C1-922, Weight Set
2: 6-002-0002
Range: 0.3 to 5 psi [2 to 34 kPa]
Accuracy: 0.015 percent of reading |
| <input checked="" type="checkbox"/> | Piston/Cylinder: 6-001-0002, P2-652/C2-1378,
Weight Set 2: 6-002-0002
Range: 1.5 to 50 psi [10 to 345 kPa]
Accuracy: 0.010 percent of reading | | |

DH Primary Pressure Standard

Pneumatic Absolute or Gauge Dead Weight Tester Part Number: PG7601 S/N 161

- | | |
|--------------------------|---|
| <input type="checkbox"/> | Piston/Cylinder: S/N 305, Mass Set: S/N 2052
Range: 0.7 to 50 psi [5 to 345 kPa] absolute mode, 0.29 to 50 psi [2 to 345 kPa] gauge mode
Accuracy: 0.002 percent of reading |
|--------------------------|---|

DH Primary Pressure Standard

Pneumatic Gauge Dead Weight Tester, Model 5203, S/N 5557

- | | |
|--------------------------|---|
| <input type="checkbox"/> | Piston/Cylinder: S/N 4845, Mass Sets: S/N 2032, S/N 3293
Range: 20 to 1,600 psi [0.14 to 11 MPa]
Accuracy: 0.005 percent of reading |
|--------------------------|---|

DH Primary Pressure Standard

Oil Operated Gauge Dead Weight Tester, Model 5306, S/N 3505

- | | |
|--------------------------|--|
| <input type="checkbox"/> | Piston/Cylinder: S/N 3375, Mass Set: S/N 2032
Range: 40 to 20,000 psi [0.3 to 138 MPa]
Accuracy: 0.01 percent of reading above 200 psi [1.4 MPa]
or 0.02 psi [0.14 kPa] at lower pressure |
| <input type="checkbox"/> | Piston/Cylinder: S/N 3511, Mass Set: S/N 2032
Range: 145 to 72,500 psi [1 to 500 MPa]
Accuracy: 0.02 percent of reading above 725 psi [5 MPa]
or 0.145 psi [1 kPa] at lower pressure |



Tested By: 

DATE: 12/26/23



Paroscientific., Inc. Recalibration Program

SN155030

Date: 12-20-2023

S/N: 155030

Full scale pressure: 16

Pressure engineering units: psi

Data as found:

	Applied Pressure	Indicated Pressure	Difference % f.s.
1	6.99984	7.00236	0.0158
2	11.50209	11.50410	0.0126
3	16.00187	16.00332	0.0091
4	11.50195	11.50437	0.0151
5	6.99974	7.00230	0.0160

Offset error: 0.0213 percent of full scale

Span error: -0.0114 percent of full scale

Data as left (after offset and span adjustment):

	Applied Pressure	Corrected Pressure	Residual Error % f.s.
1	6.99984	6.99976	-0.0005
2	11.50209	11.50201	-0.0005
3	16.00187	16.00174	-0.0008
4	11.50195	11.50228	0.0021
5	6.99974	6.99970	-0.0003

RMS conformance: 0.0010 percent of full scale



Paroscientific., Inc. Recalibration Program

SN155030

Date: 12-20-2023

Calculate new PA,PM parameters

S/N: 155030

Pressure units: psi

Old PA: 0.000000

Old PM: 1.000000

Adjustment: offset and span

New PA: -0.003401

New PM: 1.000114

Calibration correction: install new PA,PM



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Tel: (425) 883-8700
Fax: (425) 867-5407

Customer: University of Alaska
201 Railway Ave.
Seward, AK 99664

Date: 12-20-2023

Sales Order: 39432 (Data as Found)

STATUS REPORT OF INTELLIGENT TRANSMITTER

Serial Number: 155030
Model: MET4A
Pressure Range: 500 to 1100 hPa

Configuration

Calibration Coefficients

VR: M3.10	SU: 0	PA: .0000000
SN: 155030	US: 0	PM: 1.000000
ID: 01	DO: 0	TC: .6781689
BR: 9600	PO: 0	
PT: N	PS: 0	U0: 5.803374
BL: 0		Y1: -3968.637
		Y2: -11756.84
		Y3: .0000000
	SL: 0	
MD: 8	DL: 0	
MC: Y	TU: 0	C1: 97.99536
	ZI: 0	C2: 5.105974
UN: 1	PI: 666	C3: -66.60543
UF: 1.000000	PL: 19.00000	
PR: 238	MN: MET4A	
		D1: .0306493
TR: 952	PF: 16.00000	D2: .0000000
	SP: 0	
	TI: 666	T1: 27.68529
ZS: 0	UL:	T2: .6477862
ZV: .00000	UM: user	T3: 20.80113
ZL: 0	ST: 10	T4: .0000000
	DM: 0	T5: .0000000
	SK: 0	



STATUS REPORT OF INTELLIGENT TRANSMITTER (Continuation)

Serial Number: 155030
Model: MET4A
Pressure Range: 500 to 1100 hPa

Configuration

DM: 0 DO: 0
PC: - PB: 0
PX: 3 RS: -
FM: 0 GD: 0
LW: 0 GT: 0
LD: 0 SE: 0
OI: 1 XM: 0
XR: - LV: 00:00:00
GR: 01/27/23 04:17:14 AM
LB: 01/19/04 02:58:50 PM
LC: 01/19/04 02:58:50 PM
OM1: -
OM2: HEAD, SPC, P, SPC, PU, COMMA, TEMP, "C", COMMA, RH, "%", END
OM3: S, "P3:", P, SPC, PU, COMMA, "TT:", TEMP, "C", COMMA, "R
H:", RH, "%", COMMA, TIME, SPC, DATE, E
JN: 0 JD: .0
JE: 0 JF: .0
JG: 0 JS: .0
JU: 0 JJ: 0
JK: 0 LZ: 0
JI: 0 RE: 0
JM: - LN: 0
JC: .0000000 LT: .0000000
LO: 00:00:00