

**Paroscientific, Inc.**  
**Pressure Instrument Configuration**

**SN: 146582** Part Number: 1564-301 Model: MET4A Port:  
 Calibration Date: 25-Jan-23 Report No: 25894 Technician: RM  
 Pressure Range: 500 to 1100 hPa Temperature Range: -40 to 60 deg C

Customer: University Of Alaska Fairbanks Report Date: 27-Jan-23  
 Address : Po Box 757940 Sales Order: 38836  
 Fairbanks, AK 99775 USA S/R Number : 12702

Configuration		Calibration Coefficients	
BL: 0	PT: N	U0:	5.810645 $\mu$ sec
BR: 9600	QD: -	Y1:	-3898.677 deg C / $\mu$ sec
DD: -	QO: -	Y2:	-8714.596 deg C / $\mu$ sec <sup>2</sup>
DL: 0	SL: 0	Y3:	0 deg C / $\mu$ sec <sup>3</sup>
DM: 0	SN: 146582	C1:	96.26717 psi
DO: 0	ST: 10	C2:	4.313641 psi / $\mu$ sec
DP: 6	SU: 0	C3:	-106.196 psi / $\mu$ sec <sup>2</sup>
ID: 01	TI: 666	D1:	0.0315788
IM: -	TR: 952	D2:	0.0000000
LL: -	TU: 0	T1:	27.74710 $\mu$ sec
LH: -	UF: 1.000000	T2:	0.610670 $\mu$ sec / $\mu$ sec
MC: -	UL:	T3:	18.21239 $\mu$ sec / $\mu$ sec <sup>2</sup>
MD: 8	UM: user	T4:	0 $\mu$ sec / $\mu$ sec <sup>3</sup>
MN: MET4A	UN: 3	T5:	0.000 $\mu$ sec / $\mu$ sec <sup>4</sup>
OP: -	US: 0	TC:	0.6781684
PF: 1.103161	VR: M3.10	PA:	0.0000468
PI: 666	ZI: 0	PM:	1.0000000
PL: 19.00000	ZS: 0		
PO: 0	ZL: 0		
PR: 238	ZV: .000000		
PS: 0			

Met4/Met4A Coefficients	
GD: -	
GT: -	
PC: -	
HY: -	
H1:	
S1: -	
S2: -	
Z1:	
Z2:	

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](mailto:support@paroscientific.com)

Prepared by



Technology

**Service Report Number: 12702**

Rev. Initials:

Rev. Date

Serial Number	Part Number	Model Number	Warranty	NCR	Original Zero Date	Customer Comment/ Reason for Return
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146582	1564-301	MET4A	<input type="checkbox"/>		8/8/2019	For calibration.
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**Customer Supplied Box**

- YES
- NO

**External Condition**

- LIKE NEW
- FAIR
- POOR

Comments

Offset Error (ppm)

-25

Current Draw (mA)

174

Firmware Version

M3.10

**Accessories Returned**

- Cable
- Manual

Other: none

**Pressure Port**

- BLOCKED
- PARTIALLY BLOCKED
- CLEAR
- N/A-ACCELEROMETER

Comments

**Oil Level**

- FULL
- OIL VISIBLE
- LOW OIL
- NO OIL VISIBLE
- N/A

**Elec. Isolation:**

- PASS
- FAIL
- N/A

**MET Products**

RH 25.67

TEMP 18.69

**Analysis:**

The exterior surfaces have paint scratches and a label attached to the housing. The electrical connector pins and pin base have oxidations and the connector was cleaned during inspection. Incoming functional test was performed. Both RS-232/485 communications were established. The relative error of the pressure sensor was -25ppm when compared to a reference laboratory barometer. The unique status settings was MD=8. The aspirator fan was functional. The housing was opened to inspect the mainboard. No anomalies are found.

**Recommendations:**

S/N 146581 – Model MET4A

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

S/N 146582 – Model MET4A

Clean unit and connector. Replace warranty seal. Perform zero adjust calibration to the barometer which includes NIST certificate. Return with unique status setting of MD=8. \$1,050.00

**Date Analysis**

Completed:

1/5/2023

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

## CERTIFICATE OF CONFORMANCE

CUSTOMER: UNIVERSITY OF ALASKA FAIRBANKS

PURCHASE ORDER: \_\_\_\_\_  
EMAIL DT: 1/10/23

DIGIQUARTZ MODEL: \_\_\_\_\_  
MET4A

PART NUMBER: \_\_\_\_\_  
1564-301

SERIAL NUMBER(S): \_\_\_\_\_  
146581,146582

*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.*

*Louie Palencia*

AUTHORIZED SIGNATURE

Louie Palencia, Quality Assurance Supervisor

1/26/23

DATE



**Technology**

Precision Pressure Instrumentation

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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 1500238176 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 1500217685 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



**Technology**

**Precision Pressure Instrumentation**

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## CERTIFICATE OF CALIBRATION

DIGIQUARTZ MODEL: MET4A

SERIAL NUMBER(S): 146581, 146582

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

### DH Primary Pressure Standard

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

- 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

- 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

- 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
- 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: 1/26/23







**Paroscientific, Inc.**  
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PACKING SLIP # 38836-01  
 01/27/23  
 Page 1 of 1  
 SALES ORDER # 38836

SHIP TO:  
 UNIVERSITY OF ALASKA FAIRBANKS  
 GEOPHYSICAL INSTITUTE  
 CENTRAL RECEIVING  
 FAIRBANKS, AK 99775

BILL TO: 6699  
 UNIVERSITY OF ALASKA  
 A/P  
 PO BOX 757940  
 FAIRBANKS, AK 99775-7940

PO NUMBER.: EMAIL DT: 1/10/23

FOB.....: REDMOND, WA USA

ORDER DATE: 01/16/23

SHIPPED VIA : WILL CALL

SHIP CHARGES: .....

LINE\PART NBR.....\PICK..\WH LOC.....\SHIP..\REFN\#BOXES\WEIGHT  
 ITEM\DESCRIPTION.....\QTY.....LOT\QTY\QTY

1 9777 1 .....  
 SERVICE DEPT. -- NON WARRANTY REPAIR

INST: MODEL MET4A, P/N 1564-301, S/N 146581.  
 PERFORM ZERO ADJUST CALIBRATION PER SR# 12702.

2 9777-1 1 .....  
 SERVICE DEPT. -- NON WARRANTY REPAIR

INST: MODEL MET4A, P/N 1564-301, S/N 146582.  
 PERFORM ZERO ADJUST CALIBRATION PER SR# 12702.

CUSTOMER INSURES

ECCN: EAR99. NLR. THESE COMMODITIES, TECHNOLOGY, OR SOFTWARE WERE EXPORTED FROM THE UNITED STATES IN ACCORDANCE WITH THE EXPORT ADMINISTRATION REGULATIONS. DIVERSION CONTRARY TO U.S. LAW PROHIBITED COUNTRY OF ORIGIN: USA

PARO SHIPPING  
7

1/27/2023

PARO INSP  
9

WILL CALL

ENCLOSURES AS CHECKED:

- 1) BILL OF LADING \_\_\_\_\_
- 2) SCD \_\_\_\_\_
- 3) COEFFICIENTS AB \_\_\_\_\_

PACKAGED BY: Rick

CARTON \_\_\_\_\_ OF \_\_\_\_\_