

Model 1249-A Wind Direction Calibrator

User's Manual



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INTRODUCTION

The Model 1249-A Wind Direction Calibrator is a mechanical device that provides four calibration points (each 90° apart) for testing the Micro Response and Low Threshold Wind Vanes (Models 2020 and 2005). The assembly is ideal for stabilizing the vane's tail during initial installation and orientation, and also provides a 90° change when calibrating a system with a standard deviation module.

The calibrator is made of anodized aluminum and stainless steel to resist against corrosion and provide durable, long term use.

SPECIFICATIONS

Type	Wind direction
Calibration points	4 at 90° increments
Operations	Manual
Power requirements	None
Accuracy	± 2 degrees
Size	5" dia. x 3.25" high (127 mm x 83 mm)
Weight/Shipping	2.0 lbs./3.0 lbs. (.91 kg/1.36 kg)

INSTALLATION

This instrument is thoroughly tested and fully calibrated at the factory and is ready for installation. Please refer to the return authorization card included in the packing box if damage has occurred. Also, notify All Weather Inc. NOTE: The calibrator can be installed onto the vane without any alteration to the vane assembly.

- 1 Separate the two halves of the calibrator by pulling apart on the two discs.
- 2 Two plastic bushings are provided with the calibration. One bushing (Part Number T800272) fits the Low Threshold Vane, Model 2005; the other (Part Number T800271) fits the Micro Response Vane, Model 2020. (See Drawing No. 1249-AO3 for identification) To change bushings, unscrew the 3 Phillips screws holding the 2 thin plates together. The plates will then separate and the bushing will slip out. Replace with correct bushing and reinstall the plate, making sure the knurled knob assembly is in position.
- 3 Take the half of the calibrator with the knurled knob, and slip the unit onto the stationary portion of the vane's housing near the rotating cap. Loosen the knob, if necessary, to do this; then tighten the knob until the unit is secured.
- 4 Hold the tail shaft and place the top half of the calibrator onto the shaft and sensor cap. Notice that the top half is recessed to accommodate the counter weight, and that there is a groove for the tail shaft and a cut out for the top of the vane cap.

- 5 Rotate the top plate until the four pins are aligned with the holes in the bottom plate. The bottom half of the calibrator may require adjusting if it is too high or too low on the vane housing. Loosen the knurled knob and position the bottom half as needed.
- 6 Locate the alignment grooves inscribed onto the housing and cap of the vane. These two grooves must be aligned prior to proceeding with calibration. Loosen the knurled knob slightly and rotate the entire calibration unit along with the sensor tail until the two marks are aligned. Securely tighten the knurled knob.
- 7 Take a reading of the sensor output. Since the transducer is a shorting potentiometer, the vanes exhibit an output of either 0 or 5000 ohms at the alignment position. Any modules or indicators should show either zero or full scale at this position.
- 8 Lift the top half of the calibrator and rotate it and the vane tail 90° to the next position. Take the next reading.
- 9 Continue Step 8 until calibration is complete.
- 10 Remove the calibrator by lifting off the top half and loosening the knurled knob to remove the lower half.

THEORY OF OPERATION

The wind direction calibrator is designed to provide a 4 point cardinal calibration with accuracy and repeatability.

The plates of the calibrator are machined and drilled on a precision mill giving a location accuracy of the pins and holes of ± 1 degrees. The tolerances of the shaft grooves and cap cut out increase the error of the alignment to give an overall accuracy of ± 2 degrees.

CALIBRATION

The Model 1249-A is not adjustable other than as described in Section 3.0. If a unit is out of calibration due to damage or to faulty construction, it should be returned for repair or replacement.

MAINTENANCE

Maintenance of the calibrator is limited to cleaning and occasional lubrication of rotating points. Store the calibrator in a dry location to reduce the possibility of corrosion.

WARRANTY

Unless specified otherwise, All Weather Inc. (the Company) warrants its products to be free from defects in material and workmanship under normal use and service for one year from date of shipment, subject to the following conditions:

- (a) The obligation of the Company under this warranty is limited to repairing or replacing items or parts which have been returned to the Company and which upon examination are disclosed, to the Company's satisfaction, to have been defective in material or workmanship at time of manufacture.
- (b) The claimant shall pay the cost of shipping any part or instrument to the Company. If the Company determines the part to be defective in material or workmanship, the Company shall prepay the cost of shipping the repaired instrument to the claimant. Under no circumstances will the Company reimburse claimant for cost incurred in removing and/or reinstalling replacement parts.
- (c) This warranty shall not apply to any Company products which have been subjected to misuse, negligence or accident.
- (d) This warranty and the Company's obligation thereunder is in lieu of all other warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, consequential damages and all other obligations or liabilities.

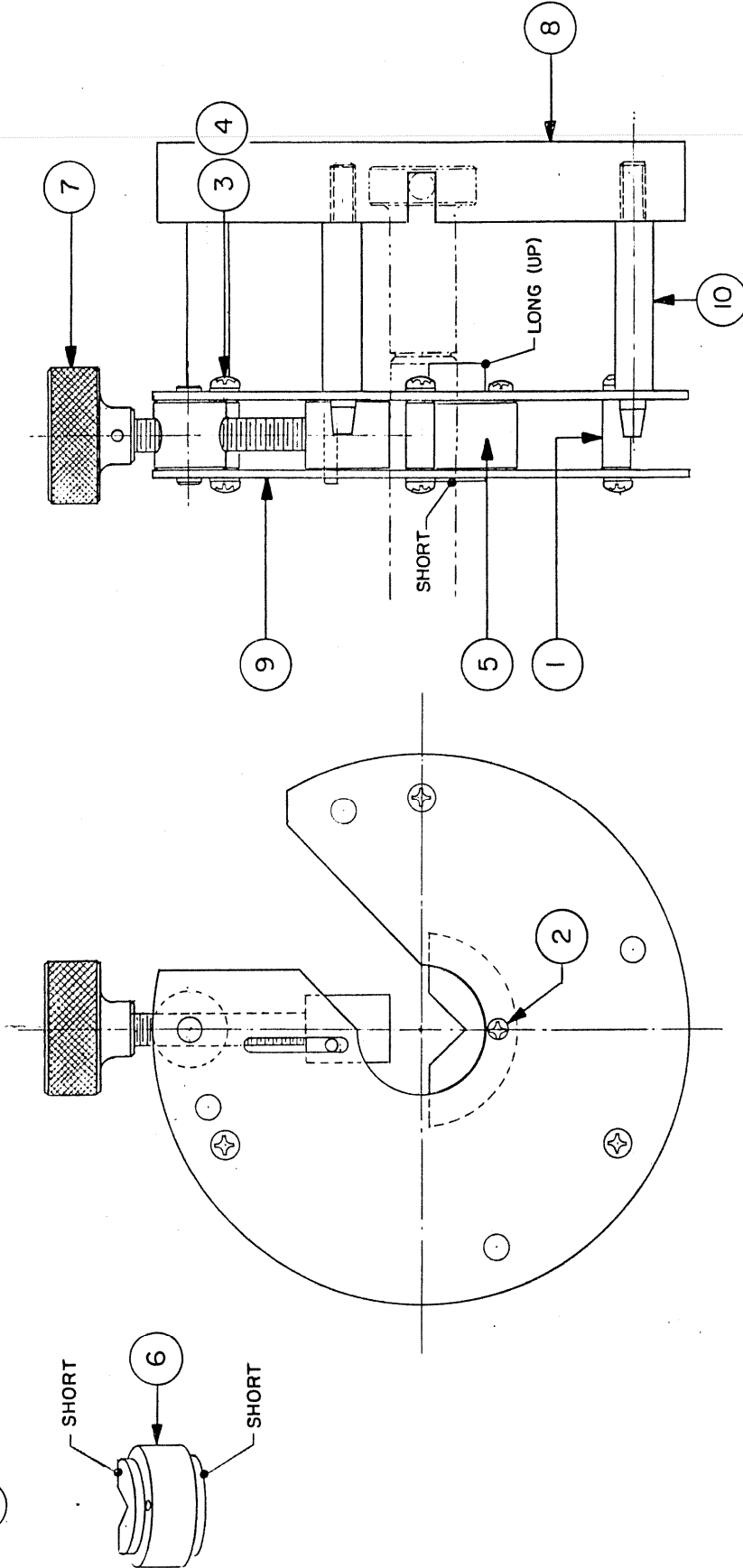
No other person or organization is authorized to give any other warranty or to assume any additional obligation on the Company's behalf, unless made in writing and signed by an authorized officer of the Company.

DRAWINGS & PARTS LIST

The following pages include drawings and a parts list for this instrument. Please note that the parts list is arranged in assembly/subassembly form. Each subassembly is on its own page. Subassemblies and parts are listed in the smallest economical size available from All Weather Inc.

5 SHOWN INSTALLED FOR WEATHERTRONICS MODEL 2020 MICROVANE

6 SHOWN BELOW FOR WEATHERMEASURE MODEL 2005 WINDVANE



REV	ECN	DATED	QTY	NEXT ASM	END ITEM	TOLERANCES UNLESS OTHERWISE NOTED: XXX = ± .005 XX = ± .010 FRACTIONS = ± .02 ANGLES ± 1/2° CONCENTRICITY = .003 TIR	
A	1994	6-13-83				MATL	SEE BILL OF MATERIALS
						FINISH	AS ISSUED
						ENGR	DT
						APPRO	DT

WEATHERMEASURE / WEATHERTRONICS Incorporated 3713 Oranville Grove Avenue Sacramento, California 95660 U.S.A.		QUALIMETRICS, Inc.	
NOMENCLATURE		MODEL 1249-A	
VANE CALIBRATION DEVICE			
MOD. USAGE	1249-A	SHEET	1 OF 1
BY GEARHEART	SCALE	DWG	
DT 5-10-83	1X	NO.	1249-A03
			B

QUALIMETRICS, INC.
BILL OF MATERIALS LISTING

PAGE 1

MASTER PART # 1249-A
DESCRIPTION WIND DIRECTION CALIBRATOR

COMPONENT PART # \ DESCRIPTION	QTY	REFERENCE
ASM- ASSEMBLY DRAWING	0	1249-A03
ECN- ENGR. CHANGE NOTICE	0	ECN #1994
M408006- STANDOFF 6-32 X 5/8 8344	3	1
T720835- SCREW 4-40X1/4 PHMS SS	1	2
T720847- SCREW 6-32X1/4 PHMS SS	6	3
T723221- WASHER LOCK #6 SS	6	4
T800271- BUSHING, CENTERING, 2020 FOR 1249-A	1	5
T800272- BUSHING, CENTERING 2005 FOR 1249-A	1	6
T800336- CLAMP ASM, 1249-A	1	7
T800816- HUB, CARDINAL POINT	1	8
T801725- PLATE, ALIGNMENT 1249-A	2	9
T801726- PIN, ALIGNMENT 1249-A	4	10

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MASTER PART # T800336-
DESCRIPTION CLAMP ASM, 1249-A

COMPONENT PART # \ DESCRIPTION	QTY	REFERENCE
M026003- PIN SPRING 1/16 X 1/2 STL	1	1
M026011- PIN SPRING 1/8 X 3/4 STL	1	2
T801409- NUT, CLAMP 1249-A	1	3
T801410- KNOB, CLAMP FOR 1249-A	1	4
T801727- PRESSURE PAD, CLAMP 1249-A	1	5
T801981- SCREW, CLAMP 1249-A	1	6



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