

Model 1230/1231/1232/1233 Wind Speed Calibrator

User's Manual



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INTRODUCTION

The All Weather Inc. Model 1230, 1231, 1232, and 1233 Wind Speed Calibrators are designed to allow the user to perform sensor-recorder/display calibration. All four models use synchronous motors, with the only difference between them being the rpm of the motors.

The Wind Speed Calibrators are housed in a portable case with a carrying handle for easy field use. The four models all require 115 VAC/60 Hz power for operation.

SPECIFICATIONS

Motor speed	
Model 1230	300 rpm
Model 1231	1800 rpm
Model 1232	1200 rpm
Model 1233	600 rpm
Shaft rotation	Clockwise and counterclockwise
Input power	115 VAC/60 Hz*
Line fuse	½ Amp
Case size	6" W x 4" H x 5" D (152 x 102 x 127 mm)
Weight/Shipping	3.5 lbs/5 lbs (1.5 kg/2.2 kg)

* For 50 Hz operation, reduce rpm to 5/6 of stated value.

INSTALLATION

GENERAL

This instrument is thoroughly tested and fully calibrated at the factory and is ready for installation. Please follow the instructions in the next two sections if any damage has occurred.

RECEIVING INSTRUCTIONS

Upon receipt, all items must be carefully inspected to assure no damage has occurred during shipment. Do not discard any packing materials until you are certain no freight damage exists and all items are accounted for, including any cables, small parts, and accessories.

FREIGHT DAMAGE

If any items have been damaged during shipment, contact a representative of the freight company that delivered the merchandise and file a claim for loss. The claim must be filed at the receiving location. Keep instruments in "as received" condition until the freight handler has finished the inspection.

If damage has occurred, notify All Weather Inc. for repair. We will provide a return authorization number to expedite your repair. When returning the instrument, please enclose complete details of damage, name, address, and return authorization number.

Installation of Wind Speed Calibrators is not required. The case is designed for use on a work bench; however, the unit can be used on a tower or near the installed equipment. The user must provide a suitable support stand or must hold the case in place while making the calibration measurements for field-installed equipment.

THEORY OF OPERATION

The synchronous motor rotates at a constant, accurate rate. The accuracy of the motor rotation allows it to be used for wind sensor calibration, since the output of the sensor will not vary, and accurate electronic readings and adjustments of electronic equipment can thus be made.

The speed of the motor shaft is related to the wind speed through the use of calibration curves made under stringent test conditions. Each model or style of wind sensor will have a different output at a given rpm due to the sensor's design. Therefore, the user must refer to the calibration curves to calibrate the sensor accurately.

CALIBRATION

There is no calibration required of the Wind Speed Calibrator. If there is doubt as to the accuracy or the rate of rotation of the motor shaft, compare it to another calibrator by connecting each separately to a single wind sensor and comparing the output data of each. If an error does exist, return the defective unit to the factory for repair.

The Wind Speed Calibrator shaft is connected to the sensor by removing the sensor propeller or cups and attaching a short section of rubber tubing to each shaft. Use neoprene rubber tubing that is flexible to prevent damaging the sensor bearings. Surgical tubing is an excellent material for wind speed calibration. Select a size with the proper inside diameter to match the sensor shaft. Two pieces with different diameters may be used to match one shaft to another by nesting one piece inside the other.

The clockwise/counterclockwise switch is located on the left side of the case when viewed from the rear. The switch is labeled "CW" on top and "CC" on the bottom. The switch reverses the rotation of the motor shaft. The direction of rotation (clockwise or counterclockwise) refers to the direction when viewed from the front of the case. Observe the rotation of the sensor cups or propeller prior to connecting the calibrator to assure proper rotation of the sensor during calibration.

MAINTENANCE

Under normal use, there is no maintenance required. To prevent overheating of the motor, switch it off when not in use.

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.

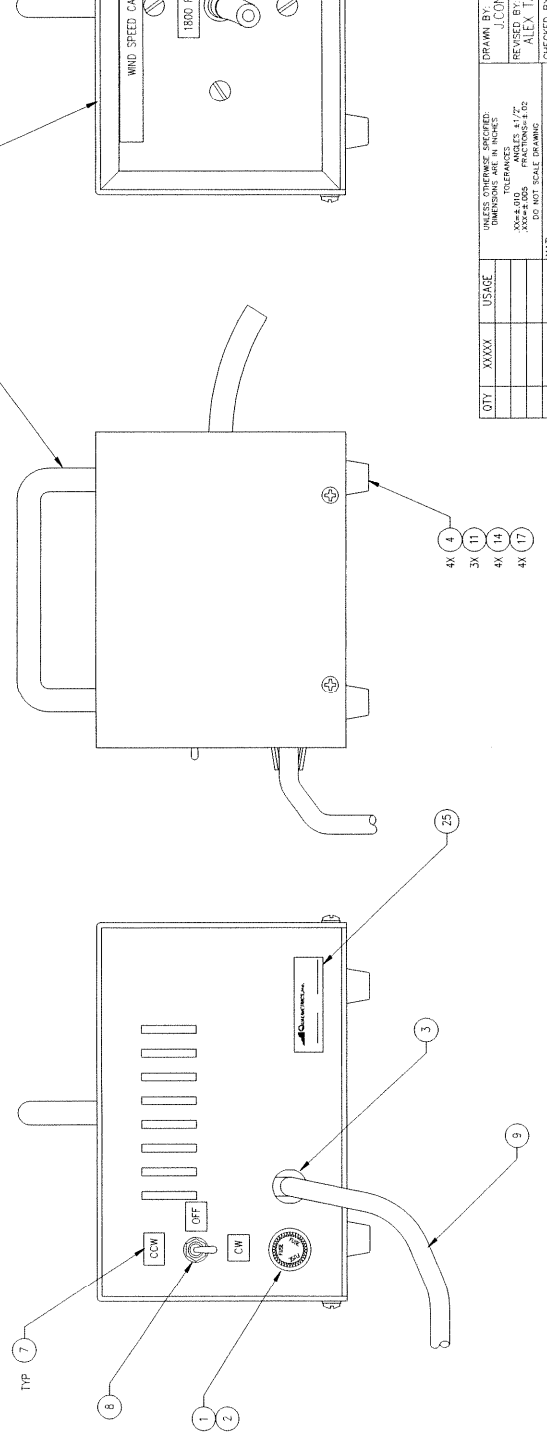
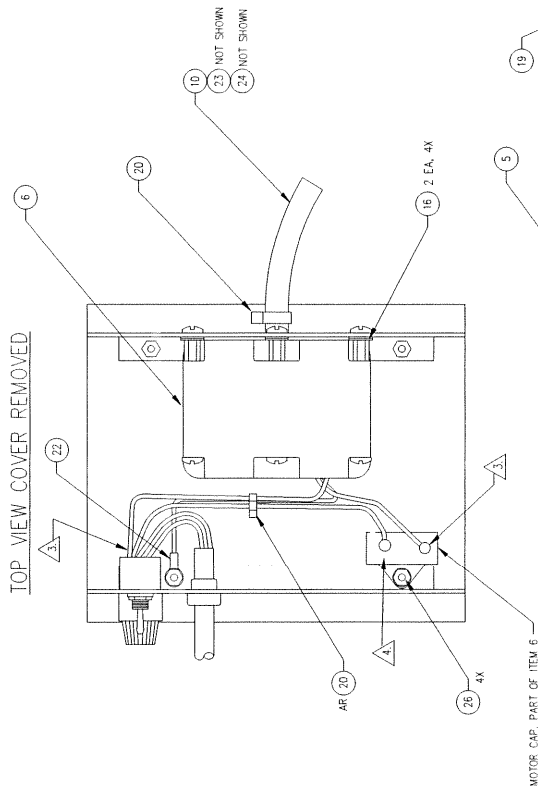
No other person or organization is authorized to give any other warranty or to assume any additional obligation on the Company's behalf, unless made in writing and signed by an authorized officer of the Company.

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.

REV. NO.	1231-003
DATE	
APPROVED	
REVISIONS	
DESCRIPTION	
INITIAL RELEASE	
REV. NO.	1231-003
DATE	
APPROVED	
REVISIONS	
DESCRIPTION	
INITIAL RELEASE	

TOP VIEW COVER REMOVED



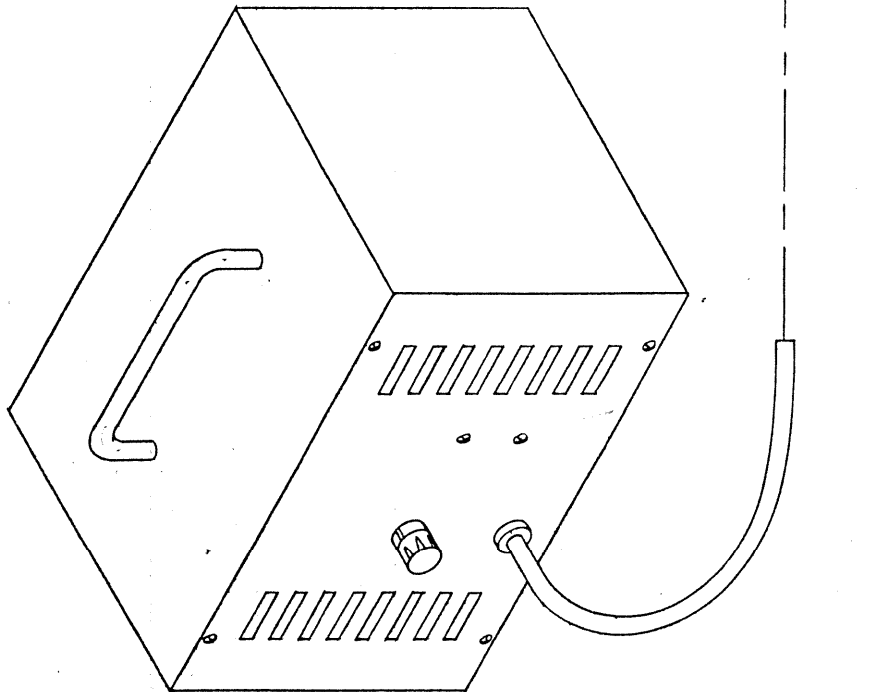
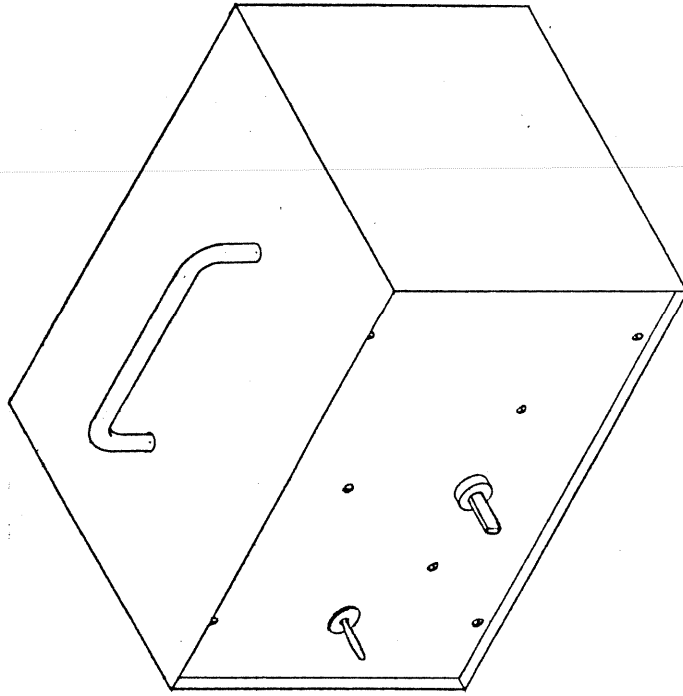
- NOTES:**
- INTERPRET DRAWING PER ANSI Y14.5M-1982.
 - ENCLOSURE COLOR: BLUE OR SAND WITH BLACK FRONT PANEL.
 - HEAT SHRINK CONNECTIONS AS REQUIRED OR DISCONNECTS WITH SQUARE CAPACITOR.
 - IF CAPACITOR IS ROUND USE CABLE TIE (M434033) TO SECURE CAPACITOR TO ASSEMBLY.

QTY	XXXX	USAGE		UNLESS OTHERWISE SPECIFIED: DIMENSIONS IN INCHES ANGLES ±1/2 DEG XX±.000 TOLERANCES PER ASME Y14.5M-1982 DO NOT SCALE DRAWING
				MATERIAL
				FINISH
				TREATMENT
				APPLICATIONS
				AS ISSUED
				NONE
				SEE BILL OF MATERIALS
				DESIGN ENGINEER
				PROJECT MANAGER
				APPROVALS
				DATE
				RELEASE DATE
				SHEET
				1 OF 1

EXCEPT AS MAY OTHERWISE BE SPECIFIED BY CONTRACT, THIS DOCUMENT AND THE DATA DISCLOSED HEREIN AND HEREWITH, IS NOT TO BE USED, REPRODUCED OR DISCLOSED, IN WHOLE OR IN PART, TO ANYONE WITHOUT THE WRITTEN PERMISSION OF QUALIMETRICS, INC.

ASSEMBLY DWG,
CALIBRATOR
ASSEMBLY,
1800 RPM

DATE: 8-30-94
DRAWN BY: JOONNER
REVISED BY: ALEX TACKETT
CHECKED BY:
DESIGN ENGINEER:
PROJECT MANAGER:
APPROVALS:
DATE:
RELEASE DATE:
SHEET: 1 OF 1



ITEM	PART NO	SUFFIX	QTY.	UNIT	DESCRIPTION	REVISION NO.
					BILL OF MATERIALS	
					TITLE	
					8771 Del Monte St Weathertronics West Sacramento, CA 95691 Telephone (916) 271-2060	
					OUTLINE DRAWING	
					WIND SPEED CALIBRATOR	
					SCALE	
					NONE	
					REL. DATE	
					3-28-79	
					DESIGNED BY	
					223 H	
					CHK'D BY	
					J.G.	
					DATE	
					05-C	

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4.28.3

** QUALIMETRICS, INC. **
BILL OF MATERIAL INQUIRY - 1230

11/10/97 PAGE 1
8:25 AM (R0701Z)

LINE NO	RUN/SLT UP	COMPONENT	QTY EACH	UOM
10		ECN ENGR CHANGE NUMBER ECN @ 4423 LAST CHG AS OF 06NOV97	.0000	EA
20		1230-001 MANUAL USERS 1230	1.0000	EA
30		M419003 LUG RING NO.8 22-18 IT-22	1.0000	EA
40		M440002 FUSEHOLDER 3AG SOLDER LITTLEFU IT-1	1.0000	EA
50		M442003 FUSE 125V 3AG 1/2 AMP REG BLO IT-2	1.0000	EA
60		T280001 STRAIN RELIEF IT-3	1.0000	EA
70		T280028 BUMPER WITH BRASS INSERT IT-4	4.0000	EA
80		T280047 HANDLE IT-5	1.0000	EA
90		T350004 MOTOR 300RPM SYNC 115VAC 60HZ IT-6	1.0000	EA
110		T510026 SWITCH LG. TOGGLE IT-8	1.0000	EA
120		T600001 CABLE PWR CORD 3 COND 18GA STRP IT-9	1.0000	EA
130		T703323 TUBING 1/8 LATEX 2IN IT-23	2.0000	IN
140		T703324 TUBING 5/16 LATEX IT-10	2.0000	IN

(PART NO)=A4\$ OR A4\$(1,3)="ALL"

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** QUALIMETRICS, INC. **
BILL OF MATERIAL INQUIRY - 1230

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8:25 AM (R0701Z)

LINE NO	RUN/SET UP	COMPONENT	QTY EACH	UOM
150		T703325 TUBING 1/4 LATEX 2IN IT-24	2.0000	IN
220		T725220 WASHER LOCK #4 SS STAR INT IT-17	4.0000	EA
240		T800511 ENCL WS CALIBRATOR IT-19	1.0000	EA
250		T430021 LABEL MULTI I.O.RPM IN-OUT S IT-7	1.0000	EA
260		M004052 SCR 4-40 X .625 PAN SS PHIL IT-11	3.0000	EA
270		M008022 SCR 3-32 X .250 BND SS IT-13	4.0000	EA
280		M009502 NUT HEX 4-40 SS .25HX .09TK IT-14	4.0000	EA
290		M009016 WASHER FLAT #6 SS .3800 .03T IT-16	8.0000	EA
300		M434001 CABLE TIE 3.9X.09 (0.87 DIA) IT-20	3.0000	EA
310		T430043 SERIAL TAG 0.5X1.7 QUALIMETRI IT-25	1.0000	EA
320		M004010 SCR 4-40 X .750 PAN SS PHIL IT-26	4.0000	EA
330		T430020 LABEL WS CALIBRATOR IT-27	1.0000	EA
340		M419045 LUG DISCONNECT FEM 22-18 .25	2.0000	EA

(PART NO)=A4\$ OR A4\$(1,3)="ALL"

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** QUALIMETRICS, INC. **
BILL OF MATERIAL INQUIRY - 1230

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LINE NO	RUN/SET UP	COMPONENT	QTY EACH	UOM
350		M434033 CABLE TIE 14.5X.30 (4.00 DIA	1.0000	EA
9020	2.0000 ----- .1000	MECHANICAL ASSEMBLY	1.0000	EA
9030	.3000 ----- .1000	MANUFACTURING	1.0000	

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** QUALIMETRICS, INC. **
BILL OF MATERIAL INQUIRY - 1231

11/10/97 PAGE 1
8:26 AM (R0701Z)

LINE NO	RUN/ SET UP	COMPONENT	QTY EACH	UOM
10		ECN ENGR CHANGE NUMBER ECN @ 4423 LAST CHG AS OF 06NOV97	.0000	EA
20		1230-001 MANUAL USERS 1230	1.0000	EA
30		M419003 LUG RING NO.8 22-18 IT-22	1.0000	EA
40		M440002 FUSEHOLDER 3AG SOLDER LITTLEFU IT-1	1.0000	EA
50		M442003 FUSE 125V 3AG 1/2 AMP REG BLO IT-2	1.0000	EA
60		T280001 STRAIN RELIEF IT-3	1.0000	EA
70		T280028 BUMPER WITH BRASS INSERT IT-4	4.0000	EA
80		T280047 HANDLE IT-5	1.0000	EA
90		T350003 MOTOR 1800RPM SYNC 115VAC 60HZ IT-6	1.0000	EA
110		T510026 SWITCH LG. TOGGLE IT-8	1.0000	EA
120		T600001 CABLE PWR CORD 3 CND 18GA STRP IT-9	1.0000	EA
130		T703323 TUBING 1/8 LATEX 2IN IT-23	2.0000	IN
140		T703324 TUBING 3/16 LATEX IT-10	2.0000	IN

(PART NO)=A4\$ OR A4\$(1,3)="ALL"

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4.28.3

** QUALIMETRICS, INC. **
BILL OF MATERIAL INQUIRY - 1231

11/10/97 PAGE 2
8:26 AM (R070IZ)

LINE NO	RUN/SET UP	COMPONENT	QTY EACH	UOM
150		T703325 TUBING 1/4 LATEX 2IN IT-24	2.0000	IN
220		T723220 WASHER LOCK #4 SS STAR INT IT-17	4.0000	EA
240		T800511 ENCL WS CALIBRATOR IT-19	1.0000	EA
250		T430021 LABEL MULTI I.O.RPM IN-OUT S IT-7	1.0000	EA
260		M004052 SCR 4-40 X .625 PAN SS PHIL IT-11	3.0000	EA
270		M008022 SCR 8-32 X .250 BND SS IT-13	4.0000	EA
280		M009502 NUT HEX 4-40 SS .25HX .09TK IT-14	4.0000	EA
290		M009016 WASHER FLAT #3 SS .3800 .03T IT-16	8.0000	EA
300		M434001 CABLE TIE 3.9X.09 (0.87 DIA) IT-20	3.0000	EA
310		T430043 SERIAL TAG 0.5X1.7 QUALIMETRI IT-25	1.0000	EA
320		M004010 SCR 4-40 X .750 PAN SS PHIL IT-26	4.0000	EA
330		T430020 LABEL WS CALIBRATOR IT-27	1.0000	EA
340		M419045 LUG DISCONNECT FEM 22-18 .25	2.0000	EA

(PART NO)=A4\$ OR A4\$(1,3)="ALL"

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** QUALIMETRICS, INC. **
BILL OF MATERIAL INQUIRY - 1231

11/10/97 PAGE 3
8:26 AM (R0701Z)

LINE NO	RUN/SET UP	COMPONENT	QTY EACH	UOM
350		M434033 CABLE TIE 14.5X.30 (4.00 DIA	1.0000	EA
9020	2.5000 ----- .1000	ASSEMBLE-----	1.0000	EA
9030	.3000 ----- .1000	MANUFACTURING	1.0000	

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** QUALIMETRICS, INC. **
BILL OF MATERIAL INQUIRY - 1232

11/10/97 PAGE 1
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LINE NO	RUN/ SET UP	COMPONENT	QTY EACH	UOM
10		ECN ENGR CHANGE NUMBER ECN # 4423 LAST CHG AS OF 06NOV97	.0000	EA
20		1230-001 MANUAL USERS 1230	1.0000	EA
30		M419003 LUG RING NO.8 22-18 IT-22	1.0000	EA
40		M440002 FUSEHOLDER 3AG SOLDER LITTLEFU IT-1	1.0000	EA
50		M442003 FUSE 125V 3AG 1/2 AMP REG BLO IT-2	1.0000	EA
60		T280001 STRAIN RELIEF IT-3	1.0000	EA
70		T280028 BUMPER WITH BRASS INSERT IT-4	4.0000	EA
80		T280047 HANDLE IT-5	1.0000	EA
90		T350006 MOTOR 1200 RPM W/CAP IT-6	1.0000	EA
110		T510026 SWITCH LG. TOGGLE IT-8	1.0000	EA
120		T600001 CABLE PWR CORD 3 CND 18GA STRP IT-9	1.0000	EA
130		T703323 TUBING 1/8 LATEX 2IN IT-23	2.0000	IN
140		T703324 TUBING 3/16 LATEX IT-10	2.0000	IN

(PART NO)=A4\$ OR A4\$(1,3)="ALL"

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** QUALIMETRICS, INC. **
BILL OF MATERIAL INQUIRY - 1232

11/10/97 PAGE 2
8:26 AM (R0701Z)

LINE NO	RUN/SET UP	COMPONENT	QTY EACH	UOM
150		T705325 TUBING 1/4 LATEX 2IN IT-24	2.0000	IN
220		T723220 WASHER LOCK #4 SS STAR INT IT-17	4.0000	EA
240		T800515 ENCLOSURE 1232 IT-19	1.0000	EA
250		T430021 LABEL MULTI I.O.RPM IN-OUT S IT-7	1.0000	EA
260		M004052 SCR 4-40 X .625 PAN SS PHIL IT-11	3.0000	EA
270		M008022 SCR 8-32 X .250 BND SS IT-13	4.0000	EA
280		M009502 NUT HEX 4-40 SS .25HX .09TK IT-14	4.0000	EA
290		M009016 WASHER FLAT #3 SS .380D .03T IT-16	8.0000	EA
300		M434001 CABLE TIE 3.9X.09 (0.87 DIA) IT-20	3.0000	EA
310		T430043 SERIAL TAG 0.5X1.7 QUALIMETRI IT-25	1.0000	EA
320		M004010 SCR 4-40 X .750 PAN SS PHIL IT-26	4.0000	EA
330		T430020 LABEL WS CALIBRATOR IT-27	1.0000	EA

(PART NO)=A4\$ OR A4\$(1,3)="ALL"

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** QUALIMETRICS, INC. **
BILL OF MATERIAL INQUIRY - 1232

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8:26 AM (R0701Z)

LINE NO	RUN/ SET UP	COMPONENT	QTY EACH	UOM
340		M419045 LUG DISCONNECT FEH 22-18 .25	2.0000	EA
350		M434033 CABLE TIE 14.5X.30 (4.00 DIA	1.0000	EA
9020	2.5000 .1000	ASSEMBLE	1.0000	EA
9030	.3000 .1000	MANUFACTURING	1.0000	



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1230-001

ECN 4423

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