

Test Tech:	Date:	Sales Order	WP Model #	WP Serial #
JC	12/28/16	SO-12482	2000	1361

Test Equipment Required

Device	S/N	Cal Due Date	Remarks	Pass/Fail
Fluke DVM	79190369	2/28/17		Pass
AT RH ref sensor			N/A	
Barometric pressure ref	PDB 0016	10/26/17		Pass
Wind speed calibrator			N/A	
Wind direction table	N/A	N/A		
Compass table	N/A	N/A		
RF wattmeter w/10W 400-1000 MHz element			N/A	
Configuration file: WP_1361_RMA-6783_1.cfg	ZENOS3200 (ZENOSOFT) Software version, date and C.S. V2.02 Sept 10 2002 CS:B97B			

1. HIGH CURRENT DRAIN TEST (ALL SENSORS AND RADIO CONNECTED, NO TERMINAL)

Current W/Radio	Limit	Current No Radio	Limit	Pass/Fail	Remarks
N/A mA	750ma to 1000ma	157 mA	<120 mA Average	Pass	Active COMs

2. WIND SPEED TEST For 2a or 2b attach wind test to back of test form.

2c. Speed in measured in units of: m/s mph kts

Calibrator RPM	Wind Speed	Limit RMY 05103 RMY 05203	Limit RMY 05305	Pass/fail	Remarks
200		0.0 - 1.2 m/s 0.0 - 2.6 mph 0.0 - 2.3 kts	0.8 - 1.2 m/s 1.8 - 2.8 mph 1.5 - 2.3 kts	SEE TEST FORM : 09470040_GILL-Windsonic_RMA-6783_1	
6400		30.7 - 32.0 m/s 68.8 - 71.6 mph 59.7 - 62.2 kts	32.0 - 33.3 m/s 71.6 - 74.5 mph 62.2 - 64.7 kts		

Wind Speed Threshold

Wind Monitor	Torque	Limit gm-cm	Pass/Fail	Remarks
5103		<2.4		
5305 (AQ)		<0.3		N/A
5701 (RE)		<0.3		

3. VANE TESTS

Table CW	Measured	Table CCW	Measured	Limit	Pass/Fail	Remarks
0		0		357-3		SEE TEST FORM : 09470040_GILL-Windsonic_RMA-6783_1
45		45		42-48		
90		90		87-93		
135		135		132-138		
180		180		177-183		
225		225		222-228		
270		270		267-273		
315		315		312-318		
355		355		352-1		

Wind Direction Threshold

Wind Monitor	Torque measured	Limit Torque gm-cm	Pass/Fail	Remarks
5103		30		
5305 (AQ)		9		N/A
5701 (RE)		7		

4. COMPASS TEST

TABLE	CLOCKWISE	Counter CW	LIMIT	Pass/Fail	Remarks
0	0	359	357 - 3	Pass	
60	62	SKIP THIS	57 - 63	Pass	
120	122	122	117 - 123	Pass	
180	182	SKIP THIS	177 - 183	Pass	
240	240	239	237 - 243	Pass	
300	300	SKIP THIS	297 - 303	Pass	
360	0	359	357 - 3	Pass	

5. Air Temperature

	LAB	WP	LIMIT	Pass/Fail	Remarks
WP400			±0.6°C		See Test Form : 1361_AT-RH_RMA-6783_1
WP2000			±0.2°C		

6. RELATIVE HUMIDITY

Lab	Wpak	Delta	Limit	Pass/Fail	Remarks
			SI057: 2% (Vaisala HMM22D) SI112: 2% (Vaisala HMP45D) SI276: 3% (Vaisala Humitter) SI113: 4% (Hygrometrix) SI276: 3% (Vaisala HMP50)	See Test Form : 1361_AT-RH_RMA-6783_1	

7. BAROMETER

LAB	WP	DELTA	Type of pressure sensor	Limit mB	Pass/Fail	Remarks
			SI233 Honeywell PPT (serial i/f)	±0.3		
1022.6	1022.5	0.1	SI233 Honeywell PPT (analog i/f)	±0.6	Pass	
			SI079 Setra 270 w' option 623 (12V)	±0.3		
			SI080 Setra 270 w' options 623, 703	±0.3		
			SI394 Setra 270 w' options 623, 707	±0.2		
			SI081 IC 1220A-015A-3L	±4.0		
			(N/A) Vaisala PTB 200	±0.2		
			SI082 Paroscientific 6016-B	±0.1		

8. RADIO TEST

Forward Power	Limit	Reflected Power	Limit	Pass/Fail	Remarks
	1.0 - 2.0 W		< 0.1W		N/A

9. RECIEVER AND TOWER TESTS

	Value	Limit	Pass/Fail	Remarks
9.a Rcvr software Ver.			N/a	
9.b Display operation	n/a	Data Present on Display		N/A
9.c Tower Battery Voltage		13.0 - 13.9Vdc		N/A
9.d Buzzer operation	n/a	Buzzer sounds		N/A
9.e Diode check		14.5 - 15.0Vdc		N/A
9.f Up-light Test On		Light on w/ wpak connected		N/A
9.g Up-light Test Off		Light off w/ wpak removed		N/A

PARAMETERS AS SHIPPED

System OK?	Decals OK?	Clean?	BP Offset	Compass Offset	Unit ID
X	X	X	N/A	0	1361

FINAL QUALIFICATION

QA by:	Date:	Pass/Fail	Remarks
P. GARNER	12/29/16	PASS	

Test Tech:	Date	Part Number	S/N	Applies to p/n's:
JC	12/28/16	2930-000-299	09470040	2930-000-292 2930-000-299 2930-000-321 2930-000-501

Test Equipment Required

Device	S/N	Cal Due Date	Remarks	Pass/Fail
Host System or test Power Supply	N/A	N/A		N/A
Terminal	N/A	N/A		N/A

Procedure**Bench test/Setup.**

Couple the GILL WINDSONIC to the **Host System / Power Supply / Terminal**, using known working cables. Use the terminal to check/modify/record the sensor configuration.

Enter the **Configuration-Mode** by typing '***Q<enter>**' ('Q' is default node address - See Users Manual Section 10.3 '**Checking the configuration**' for more information)

Finally, validate the configuration (type '**D3<enter>**') then 'cut-and-paste' the sensor setup response into the table below: (Type '**Q<enter>**' to exit setup)

(A typical config. looks like: M4,U1,O1,L1,P1,B3,H1,NQ,F1,E3,T1,S4,C2,G0,K50)

Validate this is the correct setup!

Configuration	Pass/Fail
M2,U1,O2,L1,P3,B3,H1,NQ,F1,E3,T1,S4,C2,G0,K50,	Pass

Output & Status.

Check for normal output data.

Cut and Paste a line of Output Data into the table below:

Validate the data is output correctly!

Output Data	Pass/Fail
Q,353,001.94,M,00,17	Pass

Validate the Status Code is OK - '00' or 'A' for NMEA format.

(Status Code appears just before last comma - If the status code is other than '00', refer to Manual Section 12.5 Status (error) codes for more information.)

Item	Value	Limit	Remarks	Pass/Fail
Status Code	00	OK		Pass

Functional Wind test.

Use an office fan or similar to check that the unit is sensing wind, turning the unit to simulate changing wind direction and to check that directional axes are functioning correctly.

(Note: There are no calibration adjustments; the unit is designed NOT to require re-calibration within its lifetime)

Position a floor/desk fan so as a constant flow of 'wind' blows through the Wind Sensor. Wait for Wind Data to stabilize then record the **Wind Speed** and **Direction** in the table below ('Speed' & 'Dir1').

Rotate the WINDSONIC CCW 90°(±5°) as viewed from above, wait for the Data to stabilize then record the **Wind Direction** in the table below ('Dir2').

Rotate the WINDSONIC another 90°(±5°) CCW as viewed from above, wait for the Data to stabilize then record the **Wind Direction** in the table below ('Dir3').

Calculate the '**Difference**' for Dir1/Dir2 and Dir1/Dir3 and record below.

Speed	Dir1	Dir2	Dir3	Diff Dir1/Dir2	Limit	Diff Dir1/Dir3	Limit	Pass/Fail
	34	126	215	92	80-100°	181	170-190°	Pass

Self-Test (Still Air). (This test checks Alignment, Gain and Checksums)

Alignment tests: The unit performs a transducer geometry check and compares the result with its factory setting.

Gain tests : The unit performs a check of its operating gain against its factory setting.

Checksum tests : The unit performs a check of its program and data memory.

Important This test is a stringent laboratory test which will only be passed if carried out under still air conditions at room temperature (17-23°C).

Use the original packing box (**inner and outer**) to enclose the unit. (The packaging was designed as a zero wind enclosure).

Go into Configuration Mode *Q<enter> . Carry out the Self-test by entering

'D6'<enter>. A message similar to that shown below in the table will be generated.

For each of the Alignment tests (and Gain - older units!) a 'PASS' or 'Refer to Manual message is generated'. (except the first message 'Alignment Limit:')

For each of the Checksum tests a 'PASS' or 'FAIL' message is generated

Cut & Paste the results into the table below and **validate all test 'PASS'!**

Example	Self Test Result	Remarks	Pass/Fail
ALIGNMENT LIMITS:0D97,0D33 ALIGNMENT U:0D61 *PASS* ALIGNMENT V:0D6B *PASS* CHECKSUM ROM:4651 4651 *PASS* CHECKSUM FAC:0A33 0A33 *PASS* CHECKSUM ENG:12B5 12B5 *PASS* CHECKSUM CAL:CC55 CC55 *PASS*	ALIGNMENT LIMITS:01DC,0178 ALIGNMENT U: TESTING.. 01AE *PASS* ALIGNMENT V: TESTING.. 01AE *PASS* CHECKSUM ROM:6E29 6E29 *PASS* CHECKSUM FAC:09F0 09F0 *PASS* CHECKSUM ENG:1828 1828 *PASS* CHECKSUM CAL:CC55 CC55 *PASS*		Pass

If any of the tests fail, reject the unit.

If a "refer to manual" message appears please see Section 12.3 Fault Finding.

(Note that it will only pass if the specified temperature and zero wind conditions are met. Check that there are no visible obstructions or damage to the unit before rejecting or fault finding the unit.)

<u>Evaluation:</u>	QA:	Date:	Remarks	Pass/Fail
All tests PASS with all values within limits.	P. GARNER	12/29/16		PASS

Rev	Date	By	Description
0	6/1/10	sjn	Release Test

Test Tech:	Date	Part Number	Model	S/N	Firmware
JC	12/28/16	2930-000-515	HMP60	N/A	V2.02

Test Equipment Required

Device	S/N	Cal Due Date	Remarks	Pass/Fail
FDCU / Data-logger	1361	N/A	WPAK	N/A
Terminal	N/A	N/A		N/A

Record the lab reference sensor information below

Lab Sensor serial number:	M3530361	Lab reference sensor	Accuracy @20°C
Lab Sensor model mfr:	Vaisala	Vaisala HM34C or F	±2%RH, ±0.3°C
Lab Sensor model #	HM40	Vaisala HM40	±1.5%RH, ±0.2°C
Lab Sensor cal due date:			

Procedure	Pass/Fail
File (copy) CERTIFICATE OF CONFORMANCE/CALIBRATION.	N/A
Locate the accuracy data for the sensor under test. Add these limits to the LAB instrument accuracy and enter the results into the ' Limits ' table below	
Position the sensor probe of the AT/RH test instrument into the air intake pipe of the blower unit. Wait at least 5 minutes for the data to stabilize then record the Temperature and Humidity data from the Test Instrument and the System Data Output . Record sensor type and data measurements in the table below.	

Readings must be within allowable difference specified

Sensor	Sensor Data	Ref. Data	Delta	Limits	Units	NOTE	Pass/Fail
AT	19.6	20.0	0.4	±0.8°C	°C	Add Sensor accuracy to the LAB instrument accuracy.	Pass
RH	30.9	34.3	3.4	±4.5%	%		Pass

Sensor Model	RH accuracy @°23C	TEMP accuracy @°23C
Rotronics HC2-S3	±1%	±0.1°C
YSI 44034RC	n/a	±0.2°C
Rotronics MP-601A	±2%	±0.2°C
Vaisala HMP60	±3%	±0.6°C
RMY 41382vc	±3%	±0.6°C
Vaisala HMP110	±1.7% (0-90%rh)	±0.2°C

*Aspirator Test (*if fitted with tachometer or flow switch)	
Ensure the aspirator fan is running.	N/A
Remove power to the aspirator motor. Observe the system data output and confirm the appropriate error message/BIT indicates the low air flow condition.	N/A
Re-connect the aspirator motor power. Observe the system data output and confirm the error message/BIT is cleared.	N/A
Remarks:	

Evaluation:	QA:	Date:	Remarks	Pass/Fail
All tests PASS with all values within limits.	P. GARNER	12/29/16		PASS

Rev	Date	By	Description
0	9/13/12	CH/SJN	New Form