

# OPERATION MANUAL

# MODEL 034

Wind Speed Wind  
Direction Sensor  
034-9800  
Rev. A



**Met One  
Instruments**

POWERED BY ACOEM

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# 1 INTRODUCTION

## 1.1 About this manual

This document is organized with the most important information towards the front of the manual, such as specifications, installation, alignment, and wiring, which all 034 owners and operators should read and understand.

## 1.2 Technical Service

This manual is structured by customer feedback to provide the required information for setup, operation, testing, maintaining, and troubleshooting the 034. If service support is required consulting the documentation, contact a Technical Service representatives during normal business hours of 7:00 a.m. to 4:00 p.m. Pacific Time, Monday through Friday. Product warranty information is available at <https://metone.com/met-one-warranty>. In addition, technical information and service bulletins are often posted on Met One Instruments website. Please contact us and obtain a Return Authorization (RA) number before sending any equipment back to the factory. This allows us to track and schedule service work and to expedite customer service.

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Please have the instrument serial number available when contacting the manufacturer. On most models manufactured by Met One Instruments, it will be located on a silver product label on the unit and also printed on the calibration certificate. The serial number will begin with a letter(s) and be followed by a unique five-digit number such as U15915.

### 1.3 About the 034 Wind Sensor

The Met One Instruments Model 034 Wind Sensor consists of a wind speed sensor and wind direction sensor. The wind speed sensor uses a three cup anemometer to produce a series of contact closures in a magnetic reed switch. The frequency of the closures is proportional to wind speed. The wind direction sensor uses a balanced anodized aluminum vane assembly and a Hall effect encoder to produce an analog voltage output proportional to wind direction. The sensor has isolated signal and power grounds to prevent voltage offsets.



Figure 1-1 034 Sensor

## 1.4 Sensor Updates

The Model 034 Wind Sensor features upgraded internal electronics, replacing the mechanical potentiometer found in legacy 034 models with a solid-state Hall Effect Encoder (PCBA 84230). This design update eliminates the friction and physical wear associated with contacting wipers, significantly increasing the sensor's operational lifetime and long-term reliability in harsh environments.

Due to active electronics, the electrical interface differs from the Model 034E. Please observe the following requirements for power and signal wiring.

### 1.4.1 Power Requirement Changes

Unlike passive potentiometer versions, the 034 requires active power to operate the Hall Effect circuitry.

- **Input Voltage Range: 10 to 18 VDC**
- **Connection: Connect the White Wire to a continuous power source (Refer to 3013 Cable Wiring).**
- **Current draw 70 mA**

#### **CRITICAL POWER WARNINGS:**

- **Over-Voltage (>18 VDC): Do not connect this sensor to a 24 VDC industrial supply. Exceeding 18 VDC will permanently damage the internal DC-DC regulator and destroy the sensor electronics.**
- **Under-Voltage (<10 VDC): Do not use the legacy 2.5 VDC or 5VDC excitation reference. Providing less than 10 VDC will fail to power the 84230 PCBA, resulting in no output signal.**
- **No Pulsed Power: Ensure the logger is set to provide Continuous power, not "intermittent power" or "Pulsed" excitation. Continuous vs. Pulsed Power:**
  - **CORRECT: Connect to a "12 VDC Power" or "Battery" terminal that provides constant voltage.**
  - **INCORRECT: Do not use "Pulsed Excitation" or "Measurement Excitation" channels. These ports apply power for only a fraction of a second, which is insufficient for the sensor to stabilize.**

## 1.4.2 Wind Speed Wiring

The 034 utilizes a simplified internal grounding scheme that differs from the legacy 2-wire isolated design. In this new configuration, the wind speed signal return is internally tied to the system **Power Ground**, leaving a single wire for the wind speed pulse detection signal.

**Required Component:** Because of this grounding change, the user must install a **10 K $\Omega$  pull-up resistor** between the Wind Speed Signal wire and a **+5 VDC** source.

**Note:** Met One Instruments 580 Logger provides a pullup resistor for wind speed, and Cambell CR1000 can be configured for this.

**Why is this necessary?** The reed switch acts as a simple contact closure to Ground; it does not generate voltage itself.

- **Switch Closed (Pulse):** The magnet closes the switch, connecting the signal wire directly to Ground (0 VDC).
- **Switch Open (Idle):** When the magnet moves away, the switch opens.
  - *Without the resistor:* The wire becomes electrically "floating" (disconnected). The data logger will read random noise or 0 Hz.
  - *With the resistor:* The resistor connects the wire to +5 VDC, ensuring the signal snaps to a clean **"High" state (+5 VDC)** whenever the switch is open.

**Resulting Signal:** This configuration creates a clean **0V to +5V square wave** frequency that standard data loggers can accurately count.

## 1.4.3 Wind Direction Output

The 84230 PCBA conditions the Hall effect reading into a linear analog voltage output proportional to the wind vane's azimuth (0° to 360°).

- **Output Range:** The sensor provides a selectable **0 to 5 VDC** "default", or **0 to 2.5 VDC** output signal "selectable" (Refer to Figure 3-3 for wiring).

**⚠ WARNING:** Before connecting the Wind Direction signal, verify the data logger's analog input specifications. Ensure the input channel is configured to accept a **0–5 VDC** signal. If not, refer to Figure 3-3 for configuring to 0–2.5 VDC output. Connecting a 5V signal to a logger restricted to 2.5 VDC or lower (common in some low-power meteorology stations) may result in signal clipping (flat-line data) or damage to the logger input.

## 2 SPECIFICATIONS

Table 2-1 Wind Speed Specifications

Wind Speed Specifications	
Range	0-167 mph (0-269 Kph, 0 - 75 m/s)
Starting Threshold	0.9 mph
Accuracy (Less than 40 mph)	+ -0.4 mph
Accuracy (greater than 40 mph)	+ - 1% of true mph
Resolution	2 Pulses per Revolution (360°)

Table 2-2 Wind Direction Specifications

Wind Direction Specifications	
Range	Mechanical 0-360 Degrees
	Electrical 0-357 Degrees
Starting Threshold	0.9 mph
Accuracy	+ - 3 Degrees
Damping Ratio	0.25 Std.
Resolution	0.5 Degrees
Temperature Range (non-icing Conditions)	-50 Degrees C to +70 Degrees C

### 2.1 Electrical Characteristics

Wind Direction Input Power	10-18 VDC, 50 mA Typical, 70mA max
Wind Speed	Pulsed contact closure Maximum current 5mA (5V with 10KΩ pullup)
Wind Direction Output	a. 0-5 volts for 0-360°(default) b. 0-2.5 volts for 0-360°(user selectable)
Wind Direction Load Impedance	50K Ohms minimum (Logger input impedance)

**Load Impedance:** The data logger input impedance must be at least **50 KΩ**. If the logger's resistance is lower than 50 KΩ, the signal voltage will drop, causing inaccurate wind direction readings

Maximum Cable Length	300 feet
Weight	2 lb. 0.2 oz.
Dimensions	18" x 17" (Refer to Figure A- 3)

### 3 INSTALLATION

Save all sensor packaging. During future maintenance, it will be very handy for supporting the sensor and avoiding handling damage. Also, use during shipment for recommended factory servicing.

#### 3.1 Install Vane

- A. Align the flat spot on the hub to the screw at the center of the vane.
- B. Maintaining the hub alignment, slide the vane on so it is completely seated onto the hub.
- C. Tighten the set screw using the 5/64" Allen wrench (provided) to secure the vane to the hub.

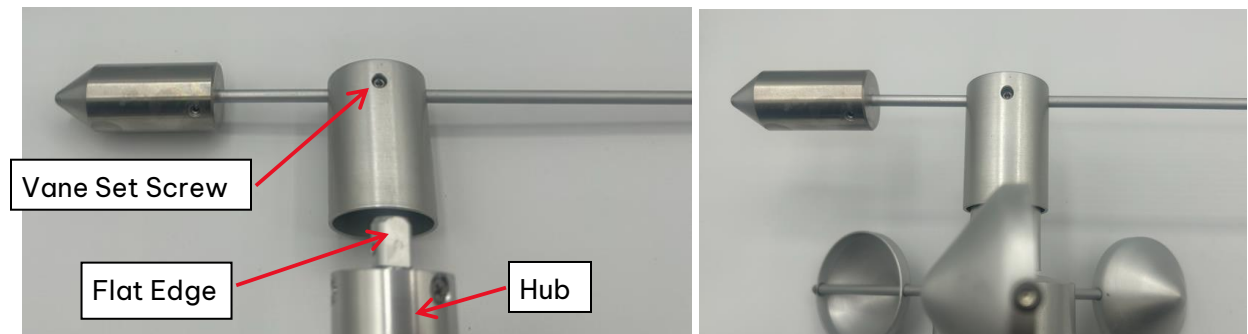


Figure 3-1 Vane Installation

## 3.2 Sensor Installation & Orientation

- A. Install the sensor into the alignment adapter. The socket head screw will pass through the adapter and will tighten into the sensor housing.
- B. Place the sensor with adapter onto top of the tripod mast or in the fitting on the cross arm.
- C. Rotate the entire sensor until the vane points to “TRUE NORTH”. The use of transit/compass will ensure accurate alignment when the magnetic correction to true has been established.
- D. When the sensor is properly aligned, tighten the adapter set screw using the 5/32” Allen wrench. By removing the socket head screw in the adapter, the sensor may be removed and replaced without realignment.
- E. Remove and retain the alignment adaptor screw from the vane hub. Check to see that the vane assembly rotates freely.
- F. Connect the cable to the sensor. Route the cable to the data recording device. Secure the cable with cable ties or tape. The cable assembly contains 5 wires. Typical wiring hookup shown in Section 3.3, and Appendix A Wiring Examples.

### 3.3 Sensor Wiring

The sensor wiring consists of two components: the external **3013 Cable** and the internal **84230 PCBA** connections. The following section details the pinout for the 3013 cable, followed by the internal wiring instructions for the 84230 PCBA. The sensor typically is wired to a datalogger, or the analog signal is translated to digital for Instruments to log the data.

#### 3.3.1 3013 Cable Wiring

When connecting the 3013 cable to a logger, make sure the sensor has constant 10 to 18V DC power, and the supply can provide a minimum of 100mA. When connecting the wind speed signal, use a 10K ohm pull up resistor to 5V (or equivalent, some loggers can provide this).

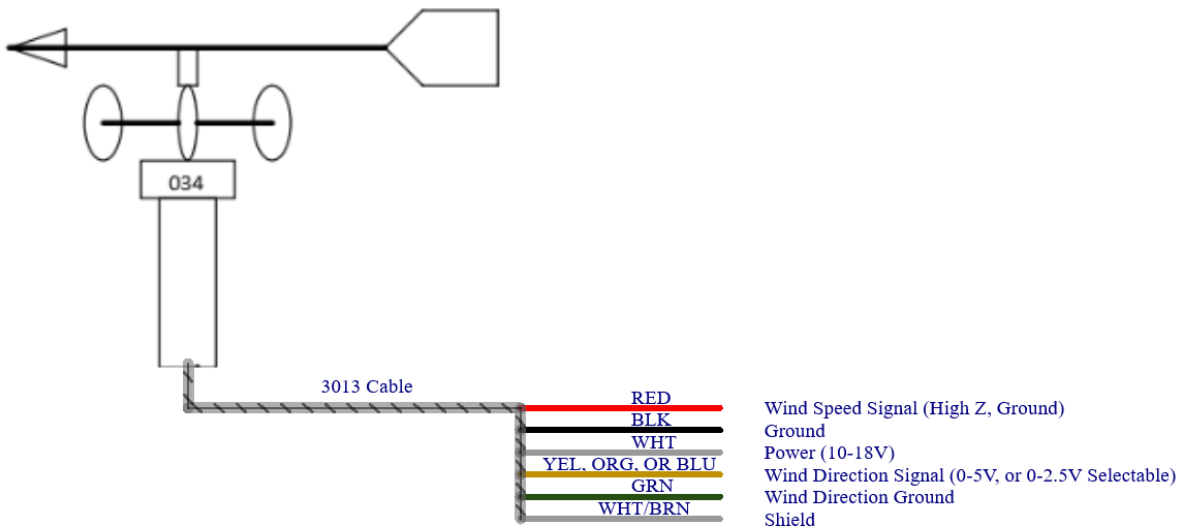


Figure 3-2 3013 Cable wiring

### 3.3.2 034 Internal Wiring to 84230 PCBA

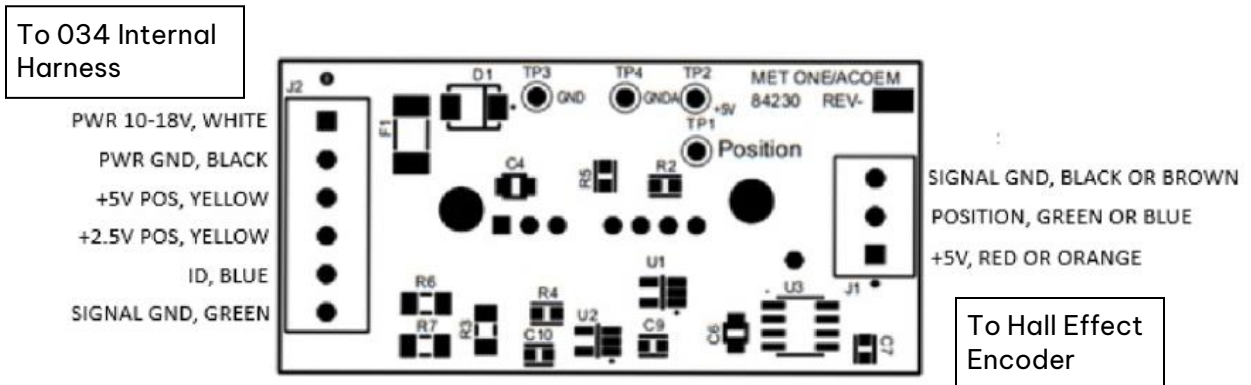


Figure 3-3 84230 PCBA Pinout

Table 3-1 034 Internal Harness Colors and Signal Type

034 Internal Harness	Signal Type
RED	Wind Speed Signal (Terminal Block)
BLK	Power GND (J2 Pin 2, and Terminal Block) *
WHT	Wind Direction Power (J2 Pin 1)
GRN	Wind Direction Signal GND (J2 Pin 6)
YEL	Wind Direction Signal (J2 Pin 3, or J2 Pin 4) **
BLU	ID, Not Used

*\* Wind Speed Note: The wind speed has a red (signal) wire that connects to the terminal block located on the top stem assembly. The Black wire (Power Ground) has a two-way splice, one going to the 84230 PCBA, and the other going to a different terminal block. This black wire provides the ground state when the magnet passes the reed switch (closing the circuit).*

*\*\* Wind Direction Note: Connecting Yellow (Blue or Orange) to J2 Pin 3 provides 0-5V output range (default), and Pin 4 provides 0-2.5V output range (selectable) for wind direction position.*

### 3.3.3 Connecting a 034 To a Logger

There are a variety of loggers this sensor may be connected to for sampling digital signals. Ensure the logger can accept 0-5 VDC inputs or 0-2.5 VDC (Wind Direction), pulsed input counting (Wind Speed), and supply a voltage between 10-18V capable of supplying **at least 100 mA**. Refer to Appendix A Wiring Examples for Logger wiring diagram, and wiring information.

### 3.4 Lightning Protection

Weather sensors are sensitive to direct or nearby lightning strikes. A well-grounded metal rod or frame should be placed above the sensor installation. In addition, the shield on the signal cable leading to the translator must be connected to a good earth ground at the translator end. The cable route should not be vulnerable to lightning.

## 4 OPERATIONAL CHECK-OUT

### 4.1 Wind Speed and Direction Sensor Check-Out

Rotating the vane in a clockwise direction as viewed from above will increase the output up to the 360 Degree point and it will start over at 0 Degrees.

Spinning the anemometer cup assembly will produce a series of pulses. To verify sensor output, monitor this signal with either a translator module, data logger or an ohmmeter. Refer to Frequency vs. Wind Speed Table **2-1** Wind Speed Specifications. Spin slowly and monitor output signal. A wind speed calibrator may be used to check operation at various RPM points (e.g. spin the cups slowly then try spinning faster and confirm the increase in RPM). The vane and counterweight must both be removed for connection to the calibrator motor drive.

The 034 wind sensor should be inspected periodically for physical damage to the vane assembly and cable connections. Inspect all vane assembly parts for security and damage. Inspect the cup assembly for loose cup arms or other damage. The cup assembly will affect calibration if a mechanical part has loosened or has been bent or broken.

Table 4-1 Wind Speed Sensor Calibration

WIND VELOCITY VS OUTPUT FREQUENCY

CALIBRATION EQUATIONS

$$V \text{ mph} = \frac{\text{RPM}}{16.787} + 0.63$$

$$V \text{ mps} = \frac{\text{RPM}}{37.547} + 0.28$$

$$V \text{ mph} = \frac{\text{FHZ}}{0.5596} + 0.63$$

$$V \text{ mps} = \frac{\text{FHZ}}{1.2517} + 0.28$$

SPEED IN MILES/HR		
V (mph)	RPS	F Hz
10.00	2.62	5.24
20.00	5.42	10.84
30.00	8.22	16.43
40.00	11.02	22.03
50.00	13.81	27.63
60.00	16.61	33.22
70.00	19.41	38.82
80.00	22.21	44.41
90.00	25.00	50.01
100.00	27.80	55.60
110.00	30.60	61.20
120.00	33.40	66.80
130.00	36.20	72.39
140.00	38.99	77.99
150.00	41.79	83.58
160.00	44.59	89.18
170.00	47.39	94.77

SPEED IN METERS PER SECOND		
V (mps)	RPS	F Hz
2.50	1.39	2.78
5.00	2.95	5.91
7.50	4.52	9.04
10.00	6.08	12.17
12.50	7.65	15.29
15.00	9.21	18.42
17.50	10.78	21.55
20.00	12.34	24.68
22.50	13.90	27.81
25.00	15.47	30.94
27.50	17.03	34.07
30.00	18.60	37.20
32.50	20.16	40.33
35.00	21.73	43.45
37.50	23.29	46.58
40.00	24.86	49.71
42.50	26.42	52.84
45.00	27.99	55.97
47.50	29.55	59.10
50.00	31.11	62.23
52.50	32.68	65.36
55.00	34.24	68.49
57.50	35.81	71.61
60.00	37.37	74.74
62.50	38.94	77.87
65.00	40.50	81.00
67.50	42.07	84.13
70.00	43.63	87.26
72.50	45.19	90.39
75.00	46.76	93.52

### RPM VS WIND SPEED

RPM	MPS	MPH	F Hz
100.00	2.94	6.59	3.33
200.00	5.61	12.54	6.67
300.00	8.27	18.50	10.00
400.00	10.93	24.46	13.33
500.00	13.60	30.41	16.67
600.00	16.26	36.37	20.00
700.00	18.92	42.33	23.33
800.00	21.59	48.29	26.67
900.00	24.25	54.24	30.00
1000.00	26.91	60.20	33.34
1100.00	29.58	66.16	36.67
1200.00	32.24	72.11	40.00
1300.00	34.90	78.07	43.34
1400.00	37.57	84.03	46.67
1500.00	40.23	89.98	50.00
1600.00	42.89	95.94	53.34
1700.00	45.56	101.90	56.67
1800.00	48.22	107.86	60.00
1900.00	50.88	113.81	63.34
2000.00	53.55	119.77	66.67
2100.00	56.21	125.73	70.00
2200.00	58.87	131.68	73.34
2300.00	61.54	137.64	76.67
2400.00	64.20	143.60	80.00
2500.00	66.86	149.55	83.34
2600.00	69.53	155.51	86.67
2700.00	72.19	161.47	90.01
2800.00	74.85	167.43	93.34

## 5 MAINTENANCE AND TROUBLESHOOTING

### 5.1 General Maintenance Schedule

#### 6-12 month intervals:

- A. Inspect the sensor for proper operation per Section 4.1.
- B. Replacement of wind speed sensor bearing in extremely adverse environments.

#### 12-24 month intervals:

- C. Replacement of wind speed Sensor bearings.

#### 24-36 month intervals:

- D. Recommended complete factory overhaul of sensor.

\*Schedule is based on average to adverse environments.

Table 5-1 Troubleshooting Table

<u>Symptom</u>	<u>Probable Cause</u>	<u>Remedy</u>
No WS Sensor output	Faulty bearings	Replace bearings (Section 5.2)
No WD Sensor output	Faulty Hall effect encoder	Replace assy. (Section 5.3)
No WS Sensor output	Faulty reed switch	Replace reed switch (REF 5.5)
No WS or WD output	Faulty cable	Check cable and connections

## 5.2 Wind Speed Bearing Replacement

- A. Remove the alignment screw that fixes the wind vane so it cannot move, if not already removed.
- B. Loosen the wind vane setscrew using a 5/64" Allen key, remove the wind vane.

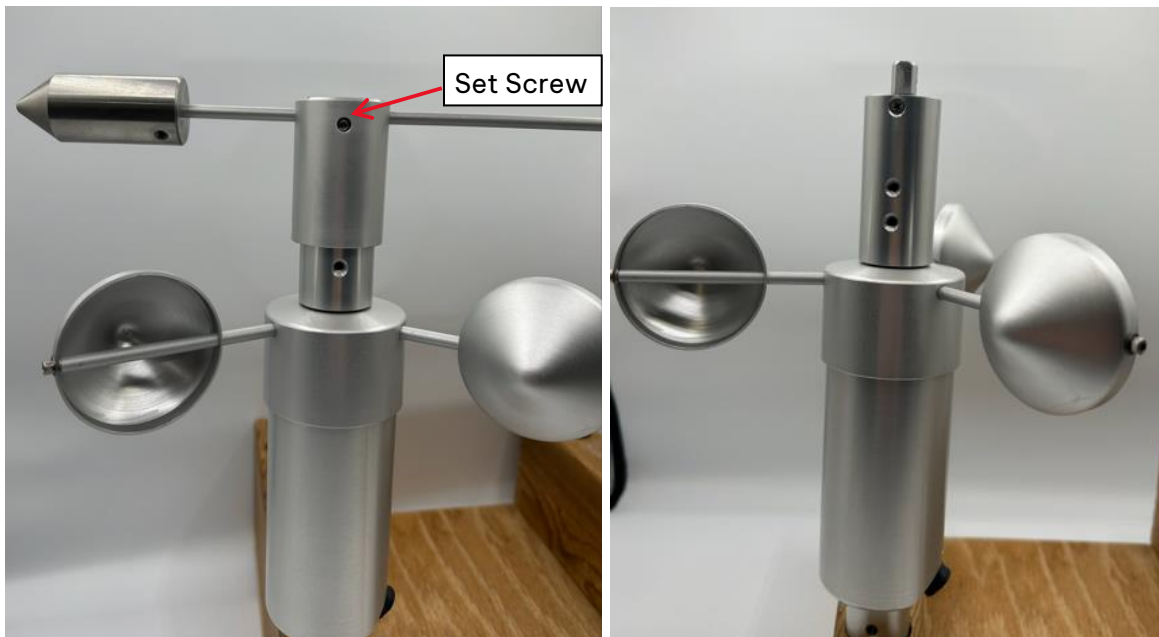


Figure 5-1 Wind Vane Removal

- C. Remove the bottom assembly by removing the screw on the lower section of the 034. Then pull the cup assembly away from the lower chassis.

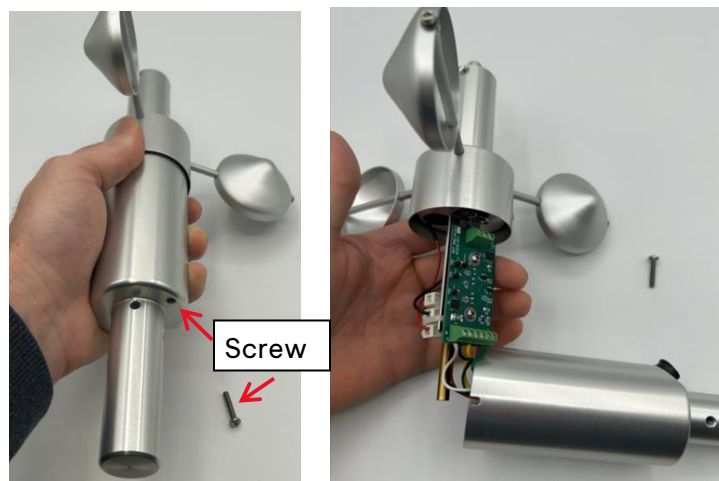


Figure 5-2 Cup assembly Removal

- D. Remove all wires from the terminal block connecting to J2, and red and black wires on the internal harness side of the white terminal block.

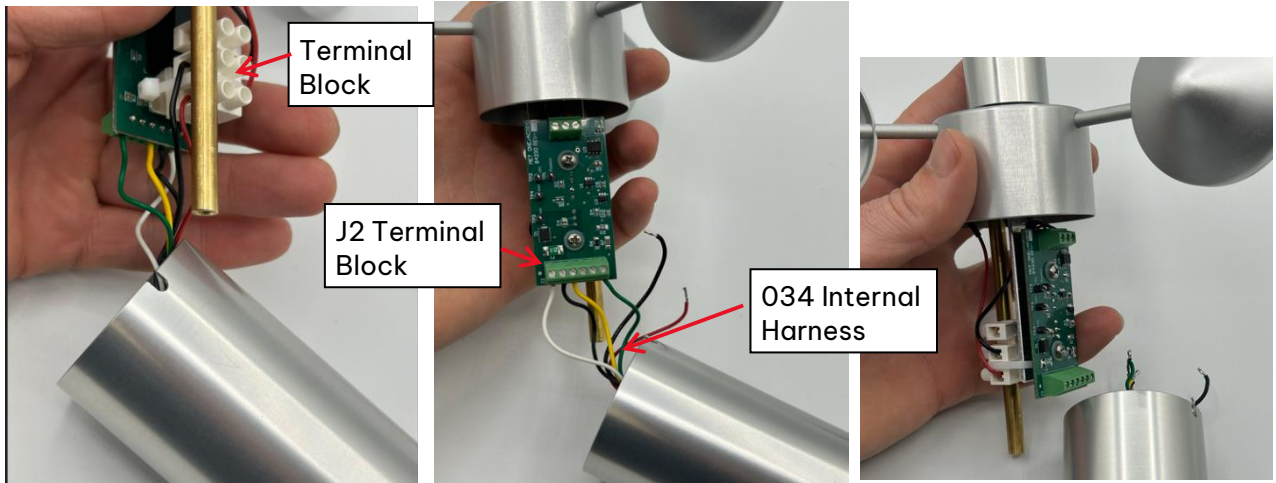


Figure 5-3 Disconnecting internal Signal Harness

- E. Remove wires from terminal block connecting to J1 on the 84230 PCBA. Followed by removing the PCBA from the PEMs standoffs.

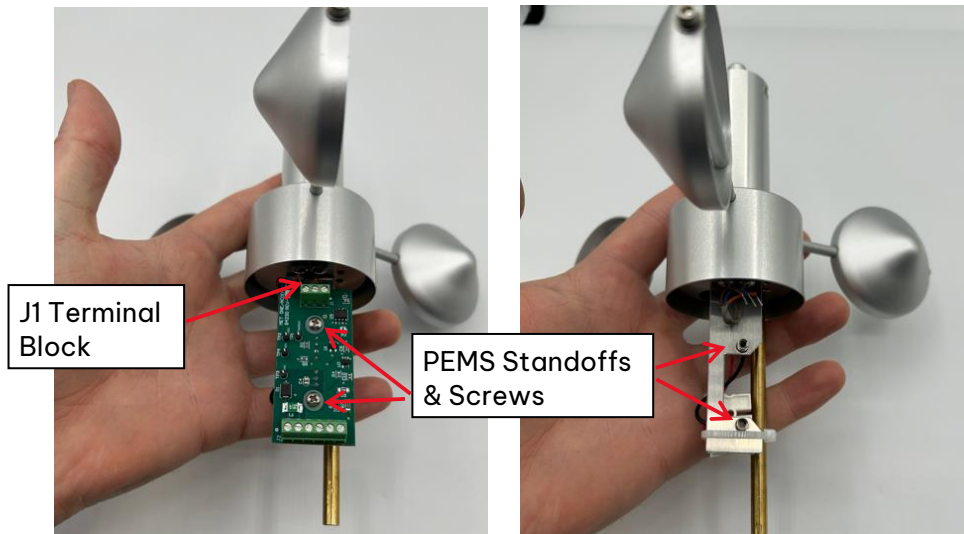


Figure 5-4 Removing 84230 PCBA

- F. Loosen the screw as shown in Figure 5-5 to get access to the cup assembly. Pull the Hall effect encoder assembly off (3786-2).

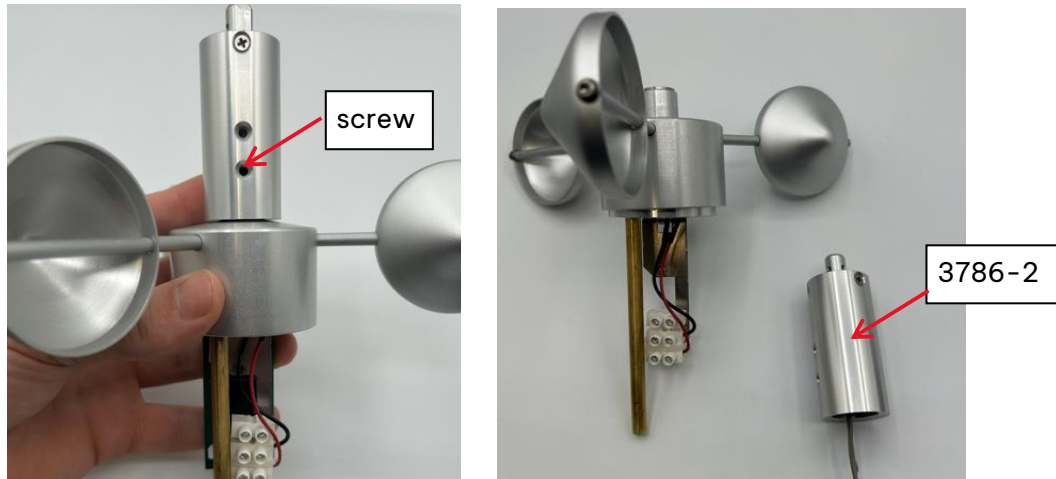


Figure 5-5 Wind Direction Encoder Removal

- G. Remove the cup assembly from the top plate stem assembly. Simply lift the cups and the two pieces will separate.
- H. Replace the old bearings (x2) with new ones (601254).
- I. Slide the cup assembly on to the stem assembly.

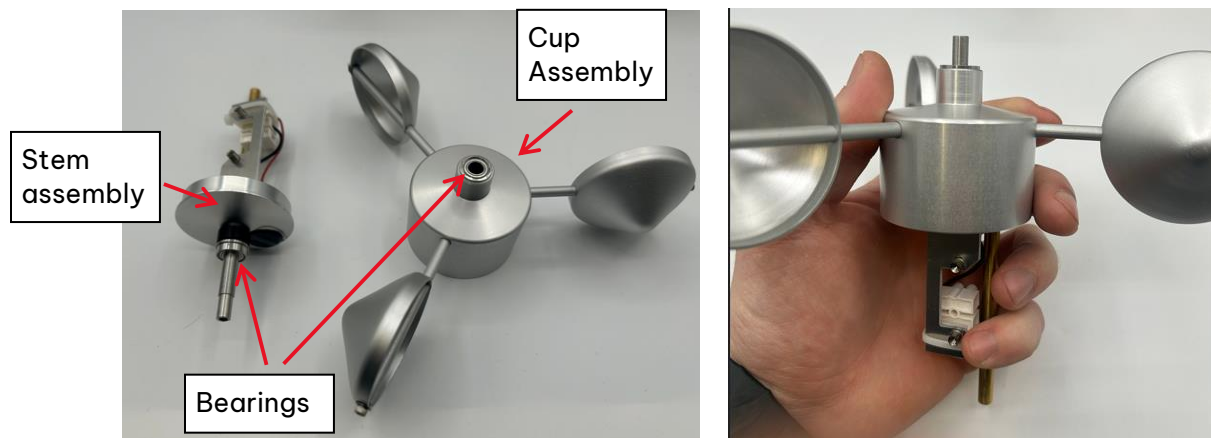


Figure 5-6 Replace Bearings Reference

- J. Feed the 3786-2 Sensor cable down the top cup stem assembly.
- K. Place the 3786-2 Sensor cable on the board mounting side of the bracket.
- L. Align the 3786-2 setscrew to the flat portion on the top stem assembly, slide onto the shaft, and tighten set screw.

*Note: this should be compressed lightly so the cups are secure, but spin freely*

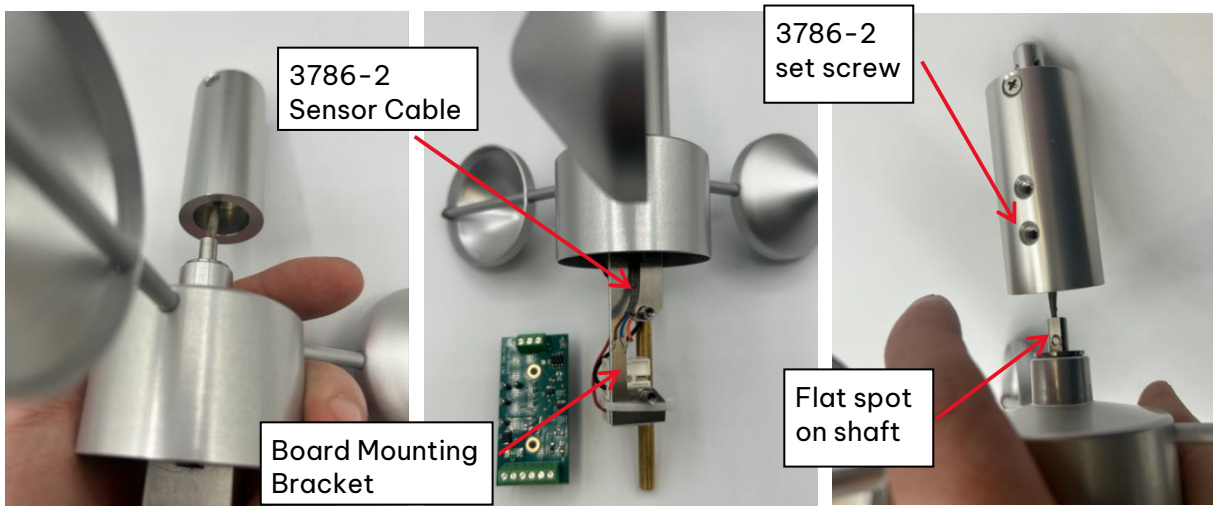


Figure 5-7 Mounting 3786-2 Sensor Assembly

- M. Wire the 3786-2 sensor cable to the 84230 PCBA (J1).  
 e.g. Orange or Red (Pin 1), Blue or Green (Pin 2), Brown or Black (Pin 3).

*Note: The 84230 PCBA has a Pin 1 indicator located on the silkscreen "this is a white dot".*

- N. Mount the 84230 PCBA to the board mounts on the O34 using screws and nylon washers.

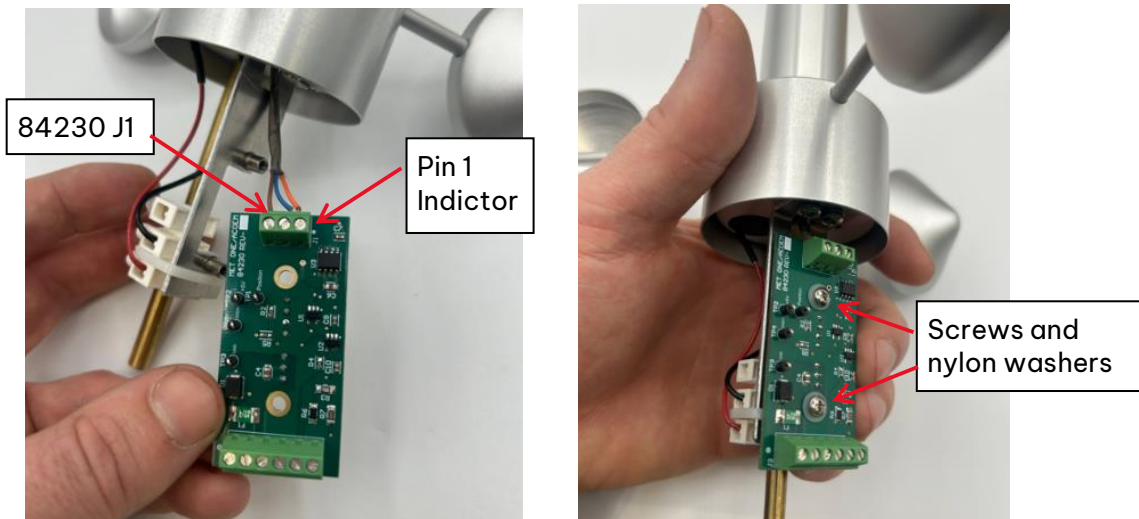


Figure 5-8 3786-2 Wiring, and Board Mounting

- O. Wire the lower sensor mount internal harness to the white terminal block on the top stem assembly by connecting the Reed switch red wire to the 034 internal harness Red wire. Connect the Reed switch black wire to the 034 internal harness black wire.
- P. Wire the lower sensor mount internal harness to 84230 (J2). e.g. White (Pin 1), Short Black (Pin 2), Yellow or Orange (Pin 3 for 0-5V Output, or Pin 4 for 0-2.5V Output), and Green (Pin 6).
- Q. Double check wire connections before proceeding.

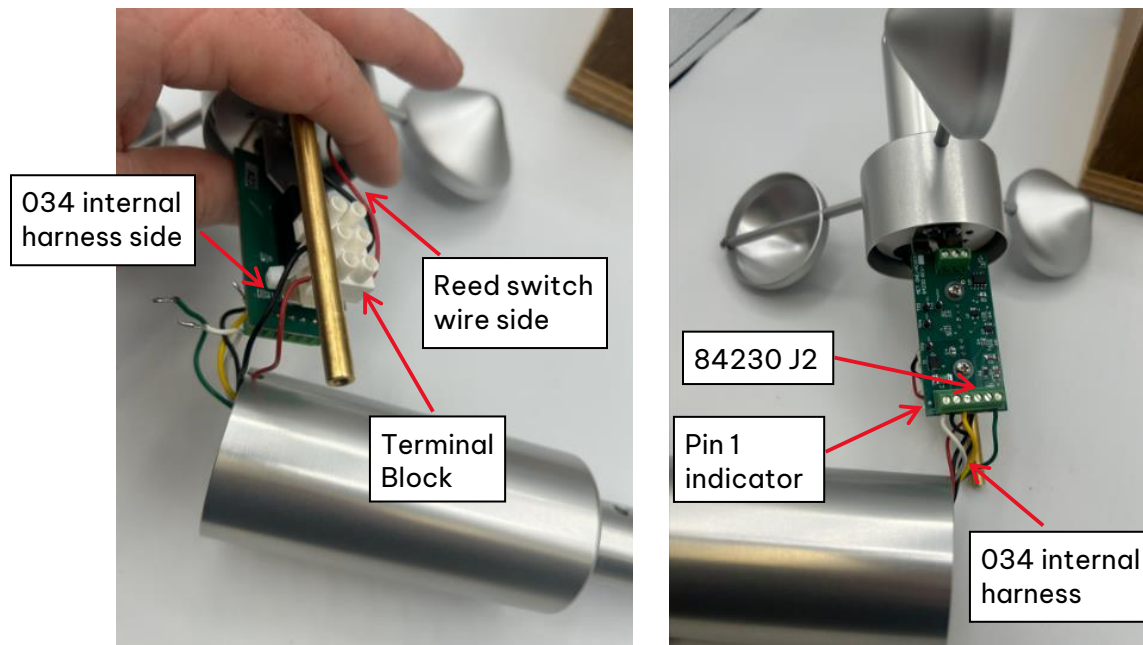


Figure 5-9 Internal harness wiring

- R. Slide the upper assembly to the bottom assembly.

*Note: keep internal harness twisted to keep it from getting between the brass stand off and the outer housing*

- S. Tighten down the screw to secure the top assembly to the bottom assembly.

**⚠ Warning:** The brass rod can easily be cross threaded, never force the screw to tighten

- T. Install the Vane assembly on the sensor and tighten set screw so it is facing the flat section on the 3786-2 Assembly (top of the sensor assembly).



Figure 5-10 Upper and Lower Sensor

### 5.3 Wind Direction Hall Effect Encoder Replacement

- A. Follow Steps A through F in Section 5.2.
- B. Replace the 3786-2 Hall effect encoder assembly with the new one.
- C. Re-assemble the sensor. Follow Steps J through T in Section 5.2.
- D. Check wind direction, and wind speed sensor outputs. Follow Section 4.1.

*Note: All 3786-2 Assemblies are calibrated before delivery, Contact Service if any issues arise. Follow Section 4.1 Operational Checkout*

## 5.4 Hall Effect Encoder Harness Replacement (84019)

- A. Follow Steps A through F in Section 5.2.
- B. Remove the three screws that secure the Hall effect sensor to the 3786-2 assembly.



Figure 5-11 Accessing the 84019 Harness

- C. Slide the Hall effect encoder out to separate the Hall effect encoder from the 3786-2 housing.
- D. Unclip and remove the 84019 cable from the Hall effect encoder.
- E. Connect the new 84019 cable to the Hall effect encoder.
- F. Re-assemble the 3786-2 by aligning the machine mark with the three holes on the 3786-2 housing. Once aligned, install the three setscrews to secure the encoder in place.

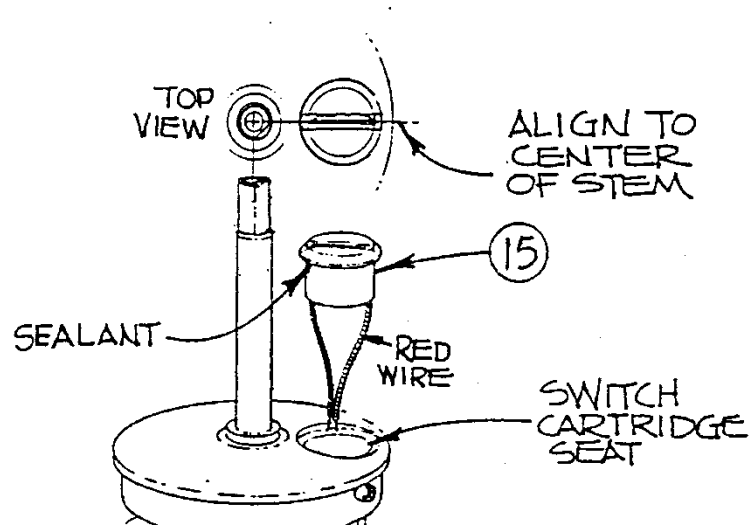


Figure 5-12 Aligning the Hall Effect Encoder

- G. Reassemble the sensor. Follow Steps J through T in Section 5.2.
- E. Check wind direction, and wind speed sensor outputs. Follow Section 4.1.

## 5.5 Wind Speed Reed Switch Cartridge Replacement

- A. Follow Steps A through G in Section 5.2.
- B. From the terminal block located on the Top Stem Assembly, disconnect the black and red wires coming from the Reed Switch Cartridge (Figure 5-13, item 15).
- C. Push switch cartridge out of its seat. Clean off any old sealant from the Top Plate Assembly.
- D. Refer to Figure 5-13. Apply a small bead of RTV silicone sealant under cartridge flange. Noting proper orientation, push into hole.
- E. Wipe away excess sealant. Allow for overnight curing before reassembly.
- F. Using care to avoid stressing switch leads while routing, connect the switch wires in the terminal strip. Match wire colors with sensor connector harness. Refer to Figure 5-9.
- G. Follow steps J through O in Section 5.2 for re-assembly.



**Figure 5-13 Reed Switch Replacement (Item 15)**

## 5.6 Vane Assembly Replacement and Balance Procedure

Vanes and counterweight are matched and balanced at the factory, but if customer vane replacement is performed, the balance of the assembly must be verified prior to returning the sensor to service.

### 5.6.1 Replacement Vane Installation

1. Insert the vane tail shaft into the hub. Make sure the shaft is fully seated at the bottom of its hole.
2. Rotate vane to align axis to sensor body and tighten set screw to secure vane assembly.

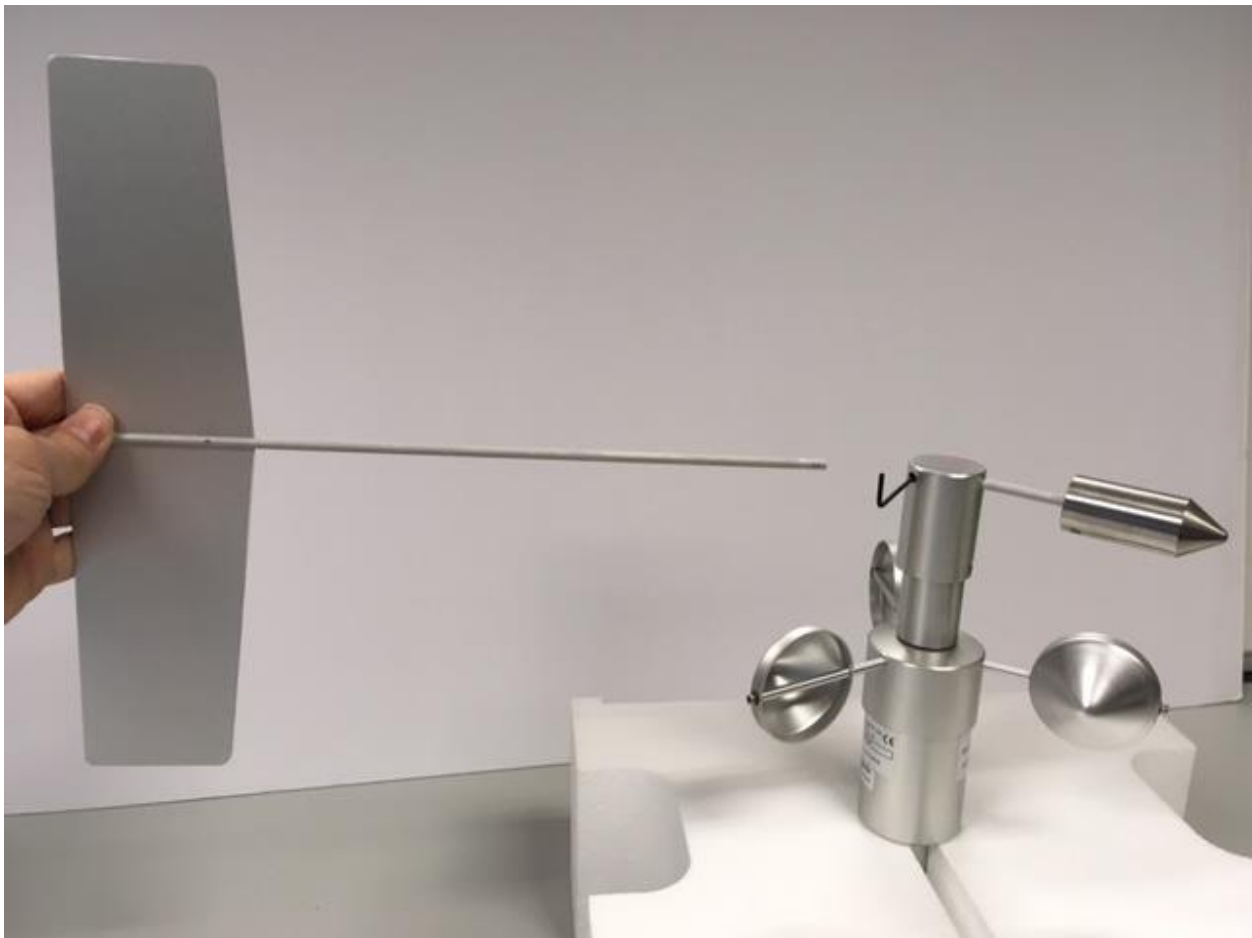


Figure 5-14 Vane Installation

### 5.6.2 Vane Assembly Balancing:

1. Hold or clamp sensor so that its axis is horizontal. Make sure the orientation shoulder is removed from the hub.
2. Rotate the vane shaft to level and gently release. If vane and counterweight remain level, assembly is already in proper balance and no further adjustment is required.
3. If balancing is required, loosen both counterweight set screws (using a 5/64" hex key) and move the counterweight on the shaft as required to establish balance. Do NOT remove the shaft from the hub.

**NOTE:** Position the counterweight on the stem so that the set screw holes face towards the sensor base. This will prevent moisture from collecting in the screw holes during sensor operation.

4. Tighten the set screws and recheck balance. Readjust as required and return the sensor to service.

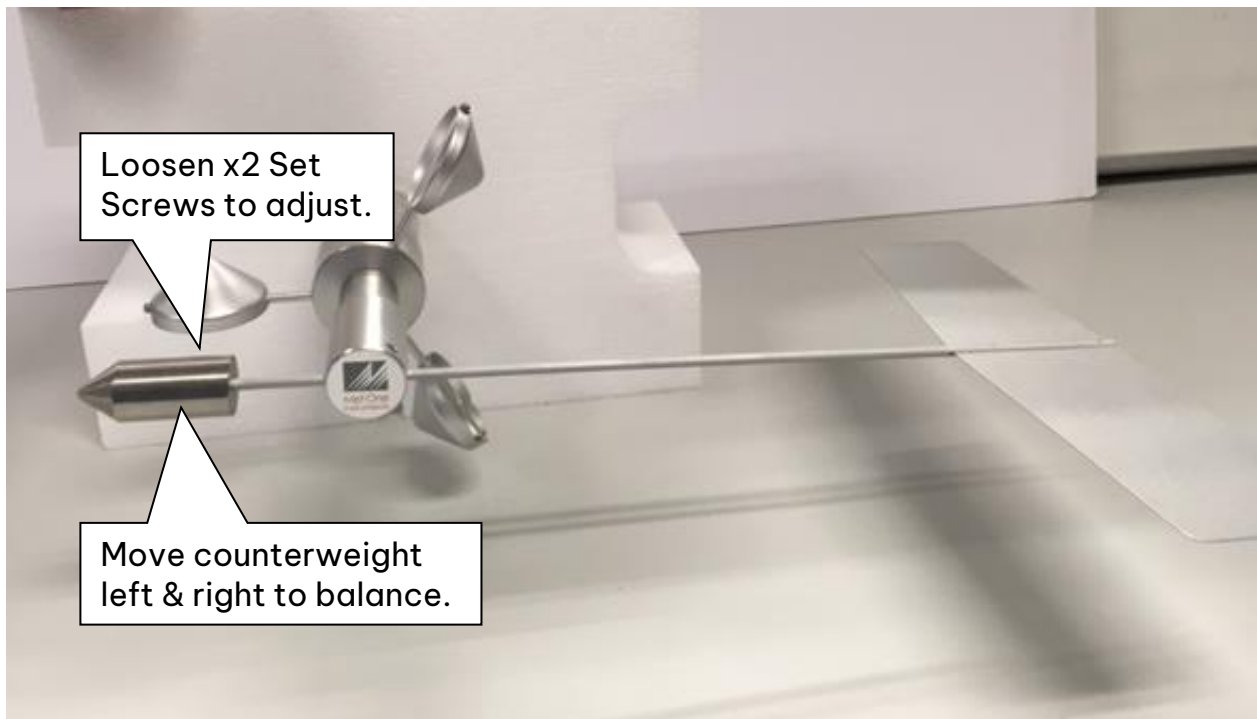


Figure 5-15 Balancing Vane

# 6 Accessories and Parts

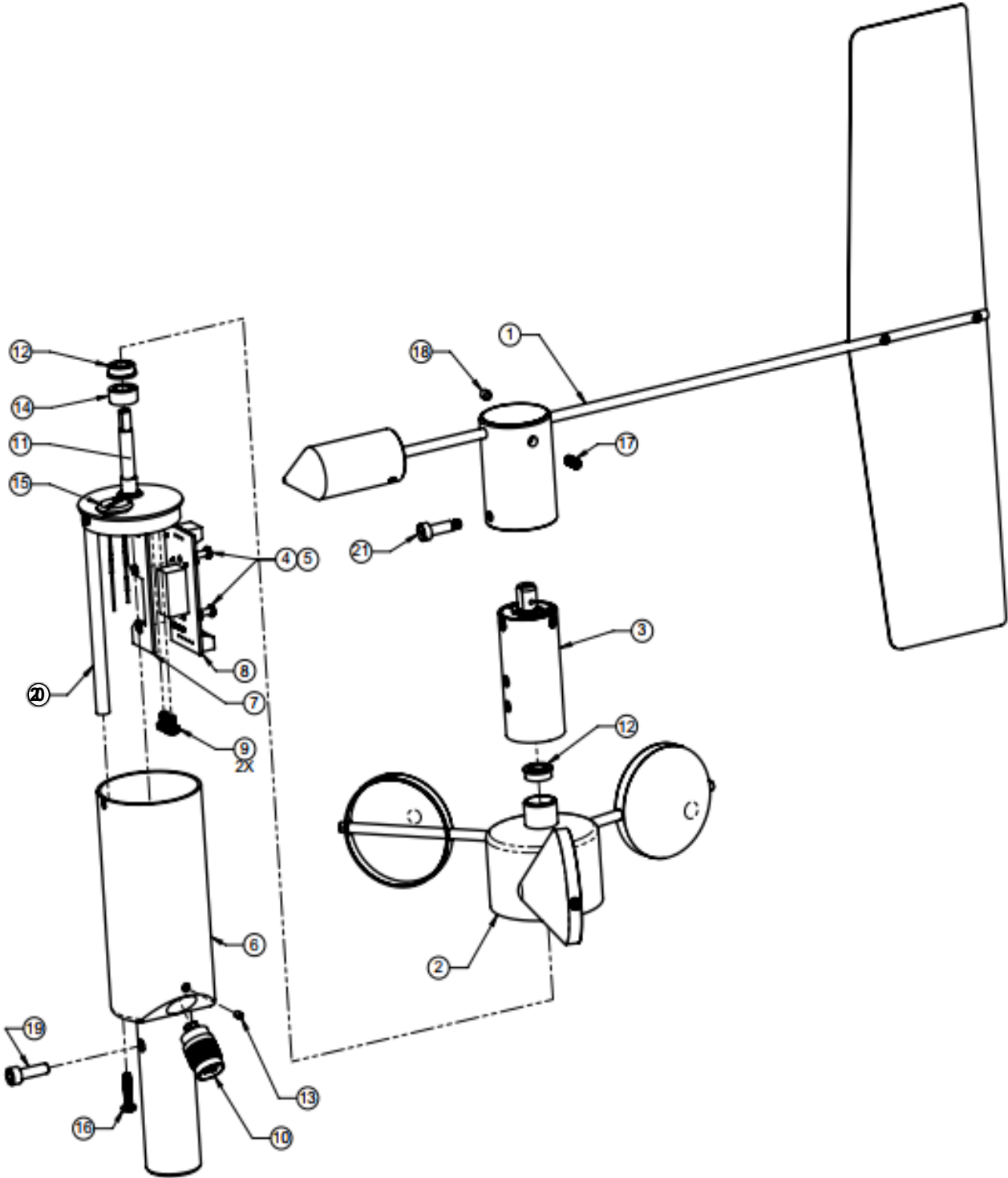


Figure 6-1 Exploded Parts View of 034

Table 6-1 Replacement Parts

item #	part #	description
1	3387	VANE ASSEMBLY, 034B/E WIND SENSOR
2	10986	CUP ASSY
3	3786-2	034 HALL EFFECT ENCODER ASSEMBLY
4	601240	SCREW, PAN HD, PHIL, 4-40 X 1/4, SST 18-8
5	602110	WASHER, FLAT, #4,NYLON
6	11163	SENSOR HOUSING MOUNT
7	11164	PCB MOUNT
8	84230	HALL EFFECT POSITION ANALOG PCBA
9	601478	SCREW, PH, CR, SEMS, 6-32 X 1/4, ILW, SS
10	82172	034 INTERNAL WIRING HARNESS
11	3369	SVC ONLY - TOP PLATE STEM ASSEMBLY
12	1898	SVC ONLY - BEARING
13	601254	SCREW, SET, AHCP, 4-40 X 3/16",SS
14	3366	SPACER SLEEVE
15	6838	REED SWITCH CARTRIDGE (ASSY)
16	601580	SCREW, CR, PH, 6-32 X 5/8 SS
17	601645	SCREW, SET, 8-32 X 3/8", SS W/BRASS TIP
18	601650	SCREW, SET, AHCP,8-32 X 3/16", SS
19	601850	SCREW, SOC HD CAP, 10-32 X 5/8, SS
20	3368-2	SPACER (BRASS), 034
21	860015	SHOULDER SCREW, SLOTTED HEAD, 3/16" DIA., #8-32 X 1/2" LG.

(Refer To Figure 6-1)

Table 6-2 Accessories

Part Number	Description
053	CALIBRATOR, WS, MOTOR-DRIVEN, DIGITAL RPM DISPLAY, 120-220VAC
6871-3	ADAPTER, CALIBRATOR (034 W/S) ASSY

## Appendix A Wiring Examples

There are a variety of loggers this sensor may be connected to. Ensure the logger can accept 0-5V inputs or 0-2.5V (Wind Direction), pulsed input counting (Wind Speed), and a voltage supply between 10-18V.

- Wind Direction: ADC inputs for sampling wind direction should be 0-5V, or 0-2.5V. The sample voltage limit of the logger should be noted to prevent damage to the logger (refer to Figure 3-3 84230 PCBA Pinout for switching between 0-5V, and 0-2.5V position output).
- Power Input: 10-18V Continuous power is necessary to power the wind direction encoder. Exceeding 18V will permanently damage the 84230 PCBA. Minimum current requirement is 100mA.
- Wind Speed: Pulsed Counting input is required for sampling the wind speed. A pull up resistor to a sample voltage is required to detect the reed switch signal (high when open, low when closed). Some loggers come with this available.

To protect from nearby lightning strikes it is recommended the shielded wire connected to earth ground. This should be the same grounding rod the power supply to the sensor and logger use, as well as the tower the sensor is placed on to prevent ground loops.

If 0-1V for wind speed and wind direction is desired, the 534 converter is available. Ensure the 034 5V wind direction is selected and follow the wiring diagram in Figure A- 2 534 Wiring Diagram.

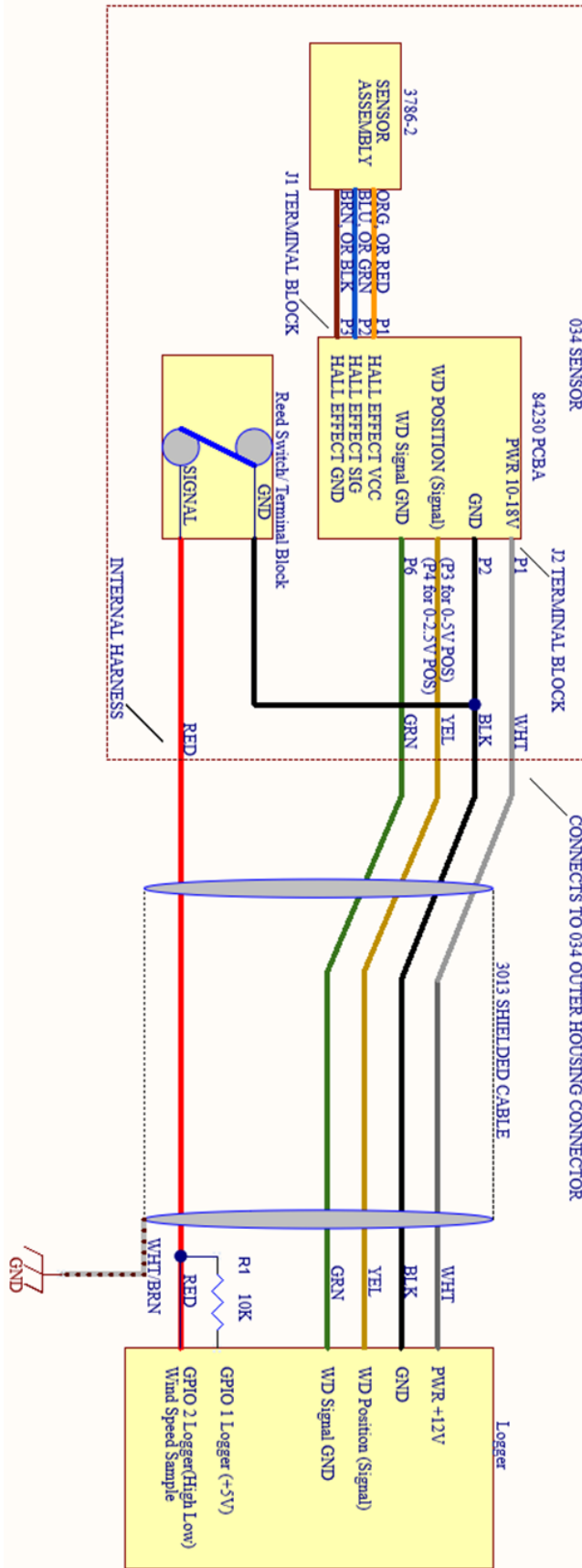


Figure A - 1 Logger Wiring Diagram

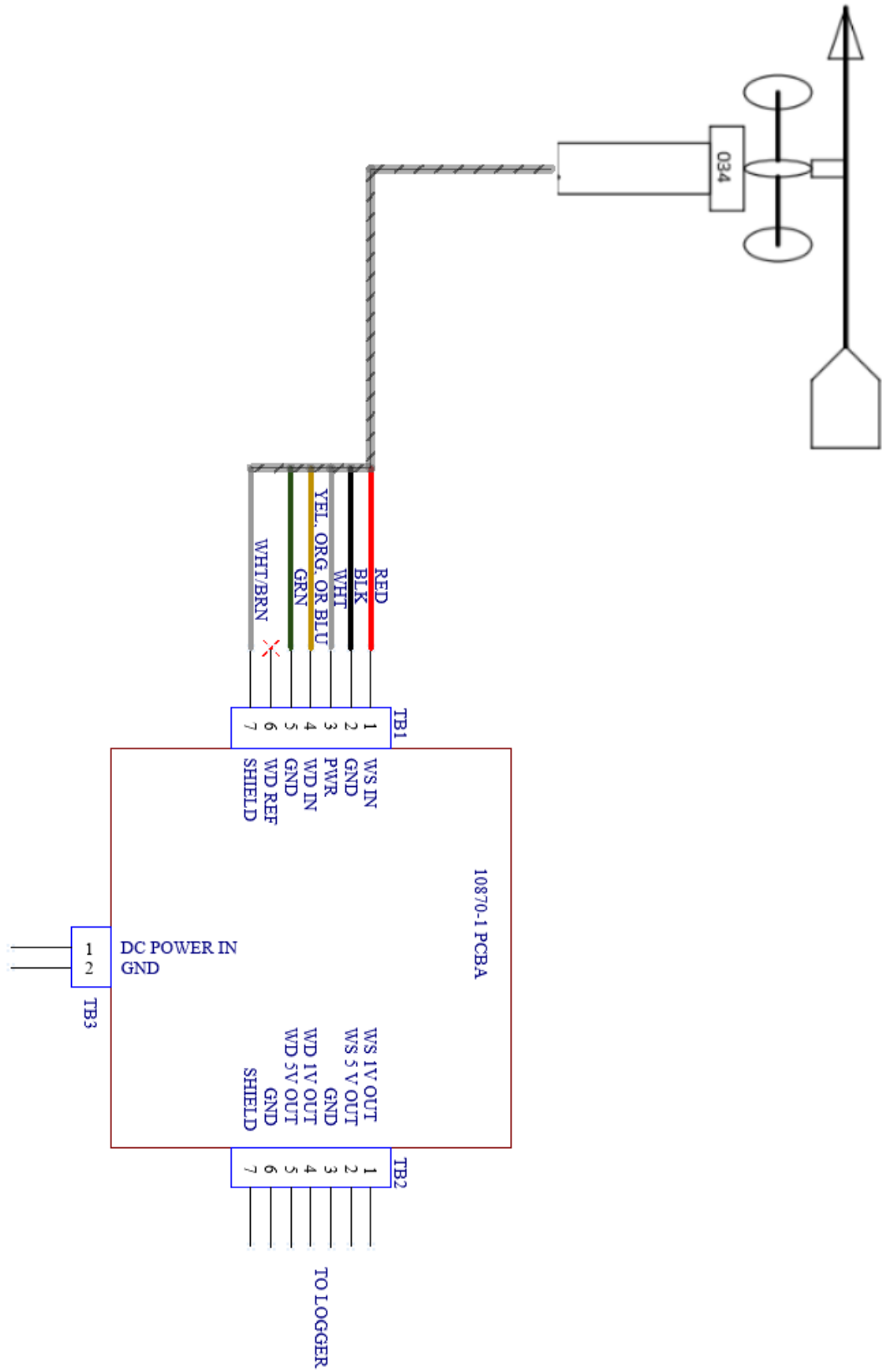


Figure A - 2 534 Wiring Diagram

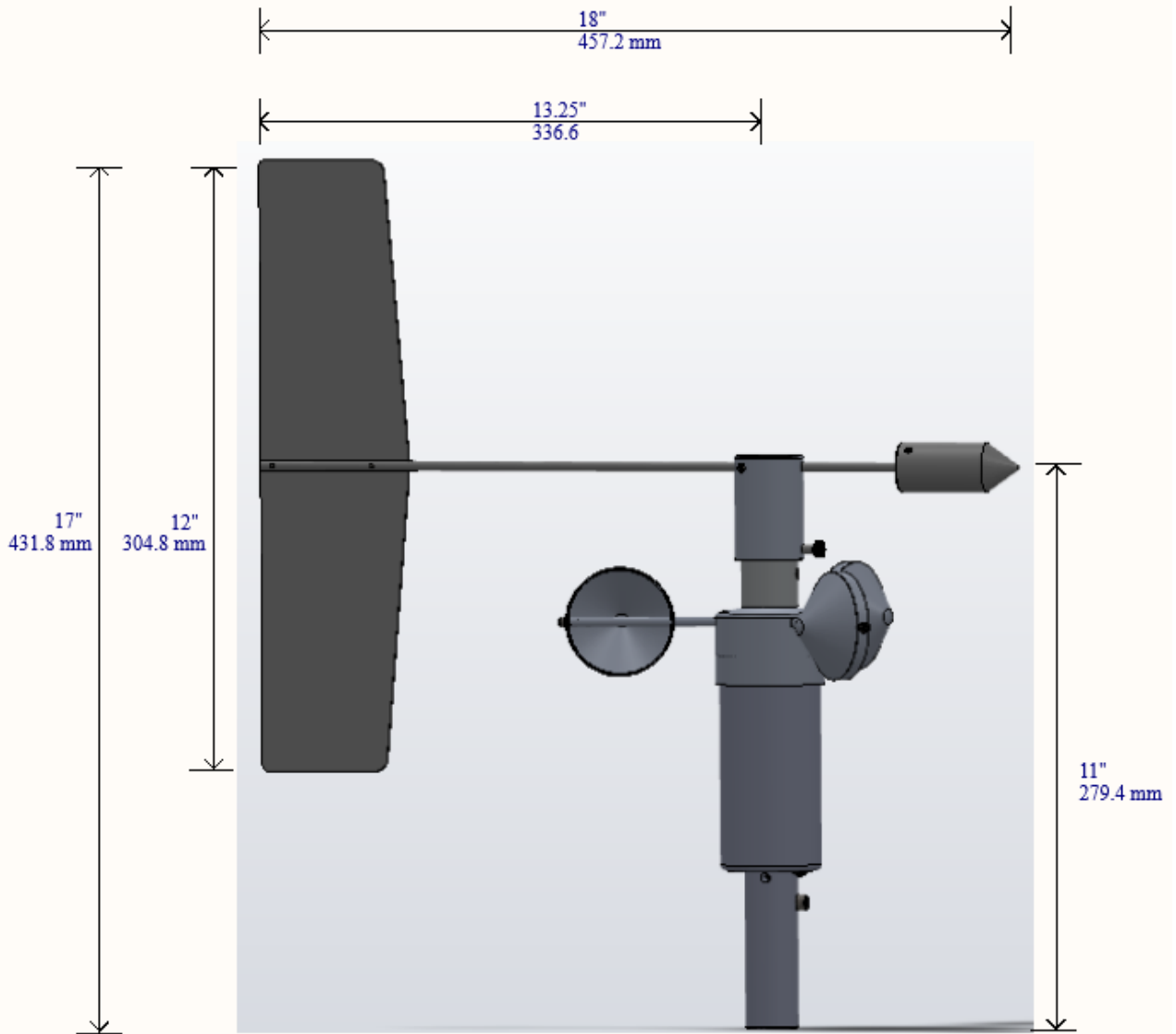


Figure A- 3 034 Dimensions