



kintech
engineering



DATASHEET

K360V

WIND VANE

The wind vane is designed for use in wind resource assessment and is built from high strength anodized aluminium.

The K360V sensor is a high precision wind vane with no dead band, a resolution of just 0.35° and accuracy of $\pm 1.4^\circ$.

DESCRIPTION

The K360V sensor is a high precision wind vane with continuous 360° rotation and no dead band and a resolution of just 0.35°. Repeatability is a key factor in the production process of a wind vane meant to be used in wind resource assessment. The K360V wind vane has such a high repeatability that no individual calibration is required for each individual wind vane which means that data logger settings can be left with the factory slope and offset. The wind vane is designed for use in wind resource assessment, solar resource assessment as well as meteorology and environmental monitoring.

The K360V wind vane features a very low starting threshold of less than 0.4 m/s, an accuracy of +/- 1.4° and is built from high strength anodized aluminium and stainless steel. The wind vane is designed for mounting on a 25 mm (or 1") diameter tube.

Optional two per box packages to reduce the transpost costs.

Main characteristics:

- No dead band
- High resolution of 0.35°
- Threshold < 0.4 m/s
- High accuracy of +/- 1.4°
- High quality materials
- High manufacturing repeatability

APPLICATIONS

Wind resource assessment, solar resource assessment as well as meteorology and environmental monitoring.

FEATURES

Electrical characteristics

| | |
|--------------------|---------------------------|
| Sensor type | Tunnel Magneto Resistance |
| Output signal | Analog |
| Output range | 0...5 V (0...360°) |
| Supply voltage | 6...22 V |
| Power consumption | < 0.75 mA |
| Dead band | None |
| Resolution | 0.35° |
| Accuracy | +/- 1.4° |
| Miswire protection | Temperature fuse |

Response characteristics

| | |
|--------------------|--|
| Starting threshold | < 0.4 m/s according to ASTM standards D5366-96 |
| Delay distance | < 1.7 m/s |

Sensor compatibility

| | |
|-----------------|---|
| Compatible with | Orbit 360, EOL Zenith, all NRG loggers, Ammonit, Campbell |
|-----------------|---|

Operating range

| | |
|-------------------|--------------|
| Measurement range | 0 - 360° |
| Temperature | -40...+60 °C |
| Humidity | 0...100 % RH |
| Survival speed | 60 m/s |

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Physical dimensions

| | |
|----------------|----------|
| Weight | 0.250 kg |
| Height | 265 mm |
| Body diameter | 39.5 mm |
| Rotor diameter | 330 mm |

Materials

| | |
|---------|--|
| Wing | Anodized aluminium |
| Body | Corrosion resistant anodized aluminium |
| Bearing | Highly resistant ball bearings |

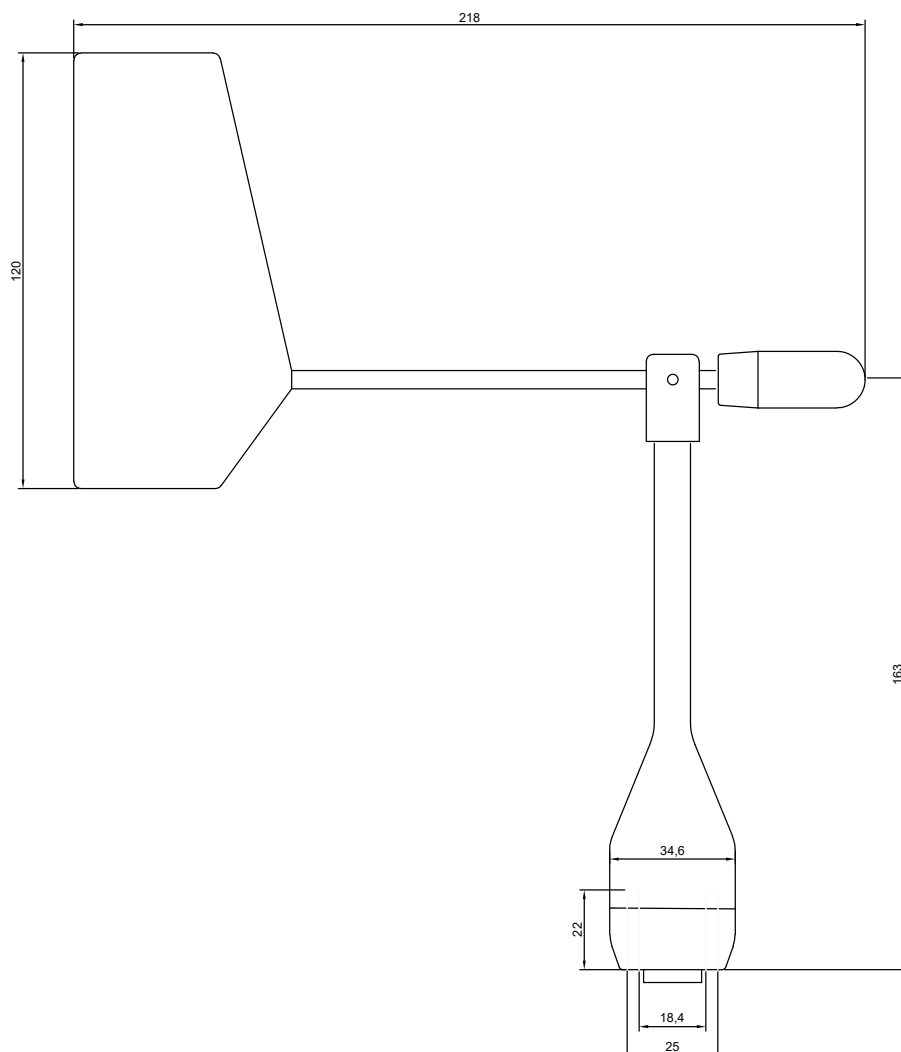
Installation



| | |
|----------------------|---|
| Mounting | Onto a 25 mm tube |
| Connection | 4 pin aviation plug |
| Cable recommendation | Signal cable 4x0.5 mm ² + shield |
| Tools required | 3 mm allen wrench, electrical tape |

Note: Male to Female Aviation Connector Socket.

SENSOR DIMENSIONS

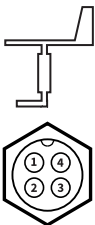













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CABLE RECOMMENDATION

Signal cable up to 150m: **4x0.5 mm² + shield**. For longer cable, please consult sensor manufacturer.

SENSOR WIRING TABLE

| Sensor Model | Sensor Pin | | Kintech Colors | | Orbit 360 | | | EOL Zenith | |
|---|------------|--------|---|--------------|-----------------|---|--------|------------|---|
| | | | | | Section | Terminal | Type | Section | Terminal |
|  <p>Base sensor view / Soldering connector view.</p> | 1 | REF |  | Yellow | Analog Channels | <div>47 51 55 59 64</div> <div>68 72 76 80 87</div> | (-) | DIR |  |
| | 2 | SIG |  | White | Analog Channels | <div>48 52 56 60 65</div> <div>69 73 77 81 84</div> <div>85 86 90 91 92</div> | Signal | DIR |  |
| | 3 | Us (+) |  | Green | Analog Channels | <div>49 53 57 61 66</div> <div>70 74 78 82 88</div> | * (+) | BAT |  |
| | 4 | GND |  | Brown | Analog Channels | <div>47 51 55 59 64</div> <div>68 72 76 80 87</div> | (-) | BAT |  |
| | Shield | |  | Yellow-Green | Power Input |  | | BAT |  |

Note:

Data logger hardware version < 3, (+) = Bat+ with current limited (12mA). Only 1 sensor must be powered on each output terminal.
Data logger hardware version ≥ 3, (+) = Bat+ with current limited (50mA). Only 1 sensor must be powered on each output terminal.

Remember maximum power supply of this sensor is 22V.

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REQUIRED DATA LOGGER VERSION

Minimum data logger required: **ORBIT 360 BASIC PLUS**.

Minimum **firmware** required: **any**

HOW TO CONFIGURE IN ATLAS

Start Atlas and open the data logger you are working on. Now go to *Site settings* and scroll down to the *Channels* section and select the following type and model:

- Group: Analog channels
- Sensor Type: Windvane
- Sensor Model: **Output 0-5V: Thies TMR / K360V**

Important! Please make sure you are working with the latest version of Atlas. To check for new updates click the *Check for updates* button in the left-hand menu located in the main dashboard.

HOW TO CONFIGURE THIS SENSOR ON SITE

We recommend performing the entire sensor configuration using Atlas at the office before installing sensors onsite. Once the sensor is correctly setup in Atlas, use the *Upload settings* tool, to upload the sensor configuration to the data logger.

In case you are already on site and need to configure the sensor directly on the data logger, follow these steps:

1. Turn on the data logger.
2. Using the keypad on the data logger, navigate the menu until you see *Sensor model*, then click the “right arrow” on the keypad.
3. Now scroll down to the channel you are going to connect the sensor to, and click the “right arrow” on the keypad.
4. Now click “Set” on the keypad and scroll up in the menu to set the sensor model type according to the table here below. Once you have found the correct sensor model, click the “right arrow” key twice to select it and save.
5. Click the “left arrow” several times to go back to the main menu.

| Data logger model | Firmware version | Sensor model type on data logger | | |
|-------------------|------------------|----------------------------------|--------|------------------|
| | | Magnitude | Number | Name |
| ORBIT 360 | any | Wind direction | 18 | VANE Output 0-5V |
| EOL ZENITH | any | Wind direction | 08 | Output 0-5V |

HOW TO CONFIGURE IN EOL MANAGER

Open EOL Manager and go to *Settings* of the data logger you are working on. Open the *Inputs* tab and select the following type and model:

- Group: Wind Vanes / Analog Inputs
- Sensor Type: Windvane
- Sensor Model: **Output 0-5V**

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