kintech engineering

DATASHEET

THIES COMPACT

WIND VANE (TMR)

The Thies Compact TMR wind vane is designed for the acquisition of the horizontal wind direction.

4.3129.60.773 (heated)
4.3129.70.773
4.3129.60.173 (heated)
4.3129.70.173

THIES COMPACT TMR | WIND VANE

DESCRIPTION

The Thies Compact TMR wind vane is designed for the acquisition of the horizontal component of the wind direction and is one of the most common wind vanes used for wind & solar resource assessment. The wind vane is fully compatible with all the data loggers manufactured by Kintech Engineering including the EOL Zenith and Orbit 360.

Having accurate wind direction data is a very important part of any wind development project. Studies show that even small wind direction measurement errors can have a dramatic negative impact on the total wind farm power output.

Heated version: The Thies Compact wind vane can be supplied in a heated version to improve performance under cold climate conditions.

Note: Given the impact incorrect wind direction measurements have, the recently updated IEC61400.12.1 (2017) now requires complete assessment of wind direction measurement uncertainties. By adding a Geovane to your wind measurement campaign (in combination with either a Thies First Class or a Thies Compact wind vane) you are guaranteed to get the most accurate wind direction data available on the market.

APPLICATIONS

Wind resource assessment, solar resource assessment, site calibration, power performance studies, solar monitoring and meteorology.

THIES COMPACT TMR | WIND VANE

FEATURES

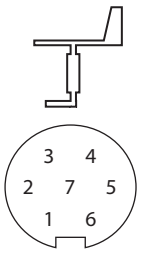
Technical Data	
Measuring range	0...360° (0 Ω in the North point)
Resolution	ca. 0.4°
Starting threshold	≤1 m/s acc. to ASTM Standards D 5366-96 ≤0.4 m/s acc. to VDI Directive 3786 Part 2
Delay distance	<2.5 m acc. to ASTM Standards D 5366-96
Accuracy	±2°
Measuring principle	Magnetic
Electrical output	0...5 V at ≤ 2 kΩ
Operating voltage	8...30 V DC / 24 V AC
Current consumption	<10 mA + Iout
Operating voltage heating 4.3129.60.x73	24 V DC/AC, maximum 20 W
Ambient temperature	-40...+70 °C
Survival speed	80 m/s, 30 minutes
Protection	IP 55, in position of application
Weight w/o cable with cable (4.3129.60.173)	 ca. 0.3 kg ca. 0.3 kg + 0.075 kg / m cable
Material: Housing Vane Bottom	 Aluminum (AlMgSi1) Polycarbonate, glass fiber reinforced Synthetic (POM H2320)

THIES COMPACT TMR | WIND VANE

CABLE RECOMMENDATION

Signal cable up to 150m: **4x0.5 mm² + shield**. For longer cable, please consult sensor manufacturer.
Heating cable cross-section should be calculated based on the power system requirements (Volts and Amps) and the cable length. Please use a wire sizing tool for selecting the most suitable cable.

SENSOR WIRING TABLE



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Base sensor view / Soldering connector view.

Sensor Model	Sensor Pin		Kintech Cable Colors		Orbit 360			EOL Zenith	
					Section	Terminal	Type	Section	Terminal
	3	Signal	○	White	Analog Channels	48 52 56 60 65 69 73 77 81 84 85 86 90 91 92	Signal	DIR Analog Inputs	SIG SIG 1 2 3 4 5
	2	GND	●	Brown	Analog Channels	47 51 55 59 64 68 72 76 80 87	(-)	DIR Analog Inputs	− − − −
	1	Us (+)	●	Green	Analog Channels	49 53 57 61 66 70 74 78 82 88	*(+)	BAT	+
	7		Do not connect						
	4	Reference	●	Yellow	Analog Channels	47 51 55 59 64 68 72 76 80 87	(-)	DIR Analog Inputs	− − − −
	Shield		●	Yellow Green	Power Input	⏚		BAT	⏚
	5	Heating (+)	●	Brown	Independent power supply 24 AC/DC				
	6	Heating (-)	●	Blue					

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.

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.

THIES COMPACT TMR | WIND VANE

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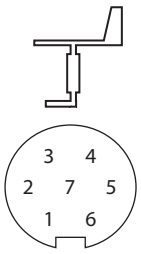

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	○	White	●	Green	Analog Channels	49 53 57 61 66 70 74 78 82 88	*(+)	BAT	+
			Do not connect						
	●	Yellow	●	Yellow	Analog Channels	47 51 55 59 64 68 72 76 80 87	(-)	DIR Analog Inputs	− −
	Shield		◐	Yellow Green	Power Input	⏚		BAT	⏚
	●	Grey	●	Brown	Independent power supply 24 AC/DC				
	●	Pink	●	Blue					

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HOW TO CONFIGURE THESE SENSORS 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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