

# WIND VANE

*THIES COMPACT TMR*



ORDER - N°	ELECTRICAL OUTPUT	ELECTRICAL SUPPLY	HEATING SUPPLY	MODEL IN EOL MANAGER
4.3129.60.773	0...5V	8...30 VDC/ 24 VAC <10 mA + Iout	24 V DC/AC 20 W	<b>OUTPUT 0-5V</b>
4.3129.70.773	0...5V	8...30 VDC/ 24 VAC <10 mA + Iout	No heating	<b>OUTPUT 0-5V</b>
4.3129.60.173	0...5 V	8...30 VDC/ 24 VAC <10 mA + Iout	24 V DC/AC 20 W	<b>OUTPUT 0-5V</b>

### APPLICATION

The wind direction transmitter is designed for the acquisition of the horizontal wind direction. The measuring values are output as electrical analogue signals. The measuring data available are ideally adapted to the supply in display instruments, recording instruments, data logger, as well as process control systems.

For winter operation the instruments are equipped with an electronically regulated heating in order to guarantee a smooth running of the ball bearings, and to avoid ice-formation at the slot of the outer rotation parts

### CONSTRUCTION AND MODE OF OPERATION

The outer parts of the instrument are made of corrosion-resistant material (aluminum, stainless steel, plastic). The aluminum parts are additionally protected by means of an anodic coat. Labyrinth sealing protects sensitive parts inside the instrument against humidity.

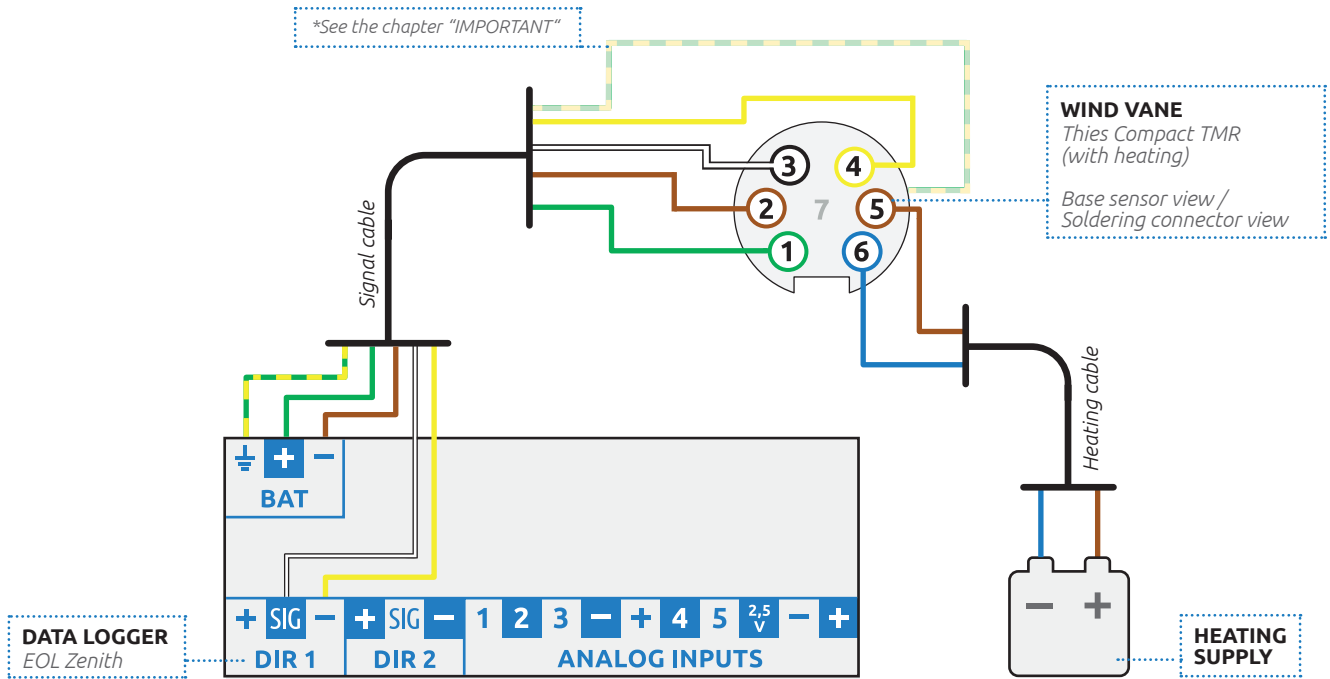
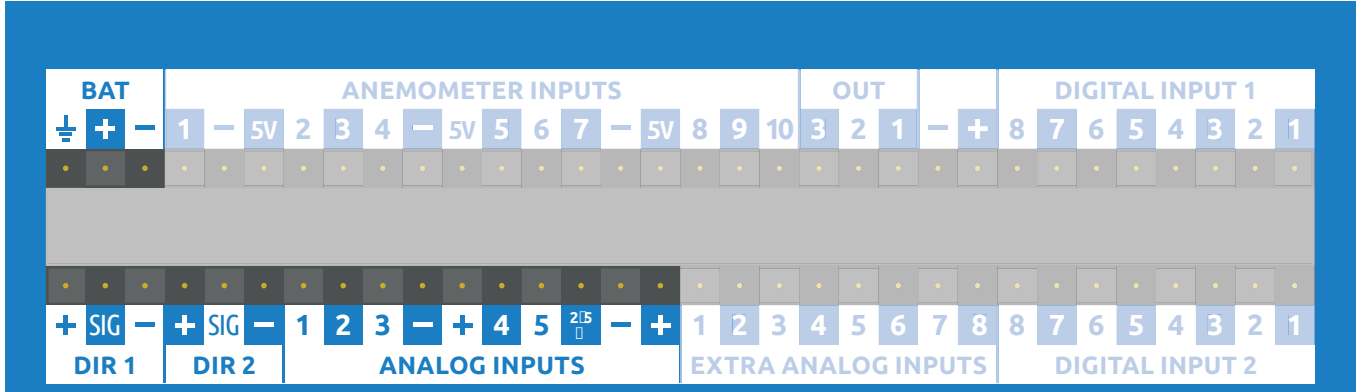
The wind direction is detected by a low-inertia wind vane. The axis of the wind vane is running in ball bearings and carries a diametrically magnetized magnet at the inner end. The angle position of the axis is scanned contact-free by a magnetic angle sensor (TMR-Sensor = Tunnel Magneto Resistance), which gives two sinus (and cosines) dependent voltages as output signals. From this, a micro-controller calculates the wind direction, and the linear relationship between the angle and the analogue output.

TECHNICAL DATA

CHARACTERISTIC	DESCRIPTION / VALUE
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 + I <sub>out</sub>
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)

**INSTRUCTIONS**

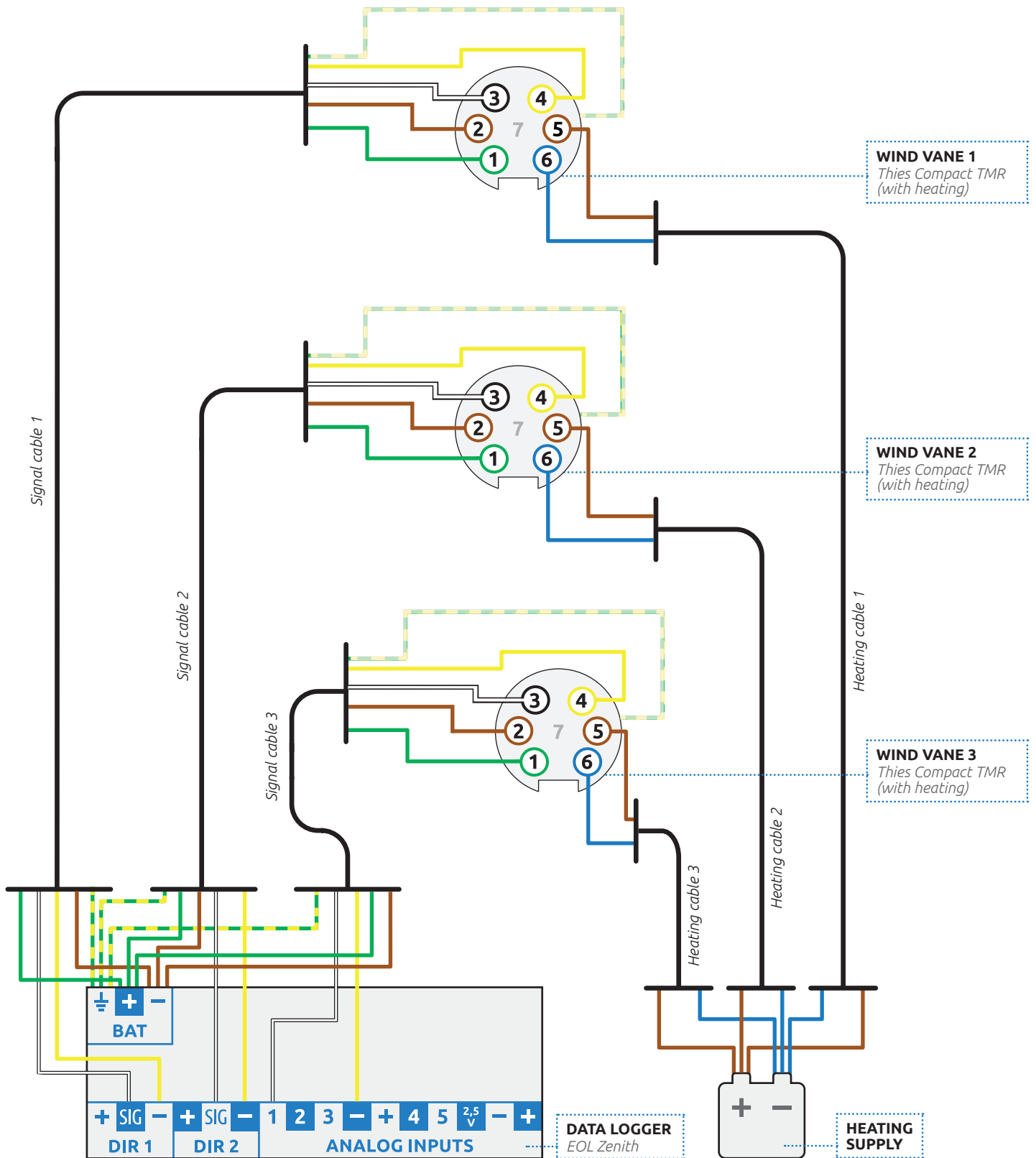
Use the following input channels on the logger to connect this sensor. See highlighted input channels marked here below. The wire colors used in the connection diagram below only applies in case the cable is supplied by Kintech Engineering.  
**For additional wiring & shielding information see the chapter "IMPORTANT" at the end of this dataheet.**



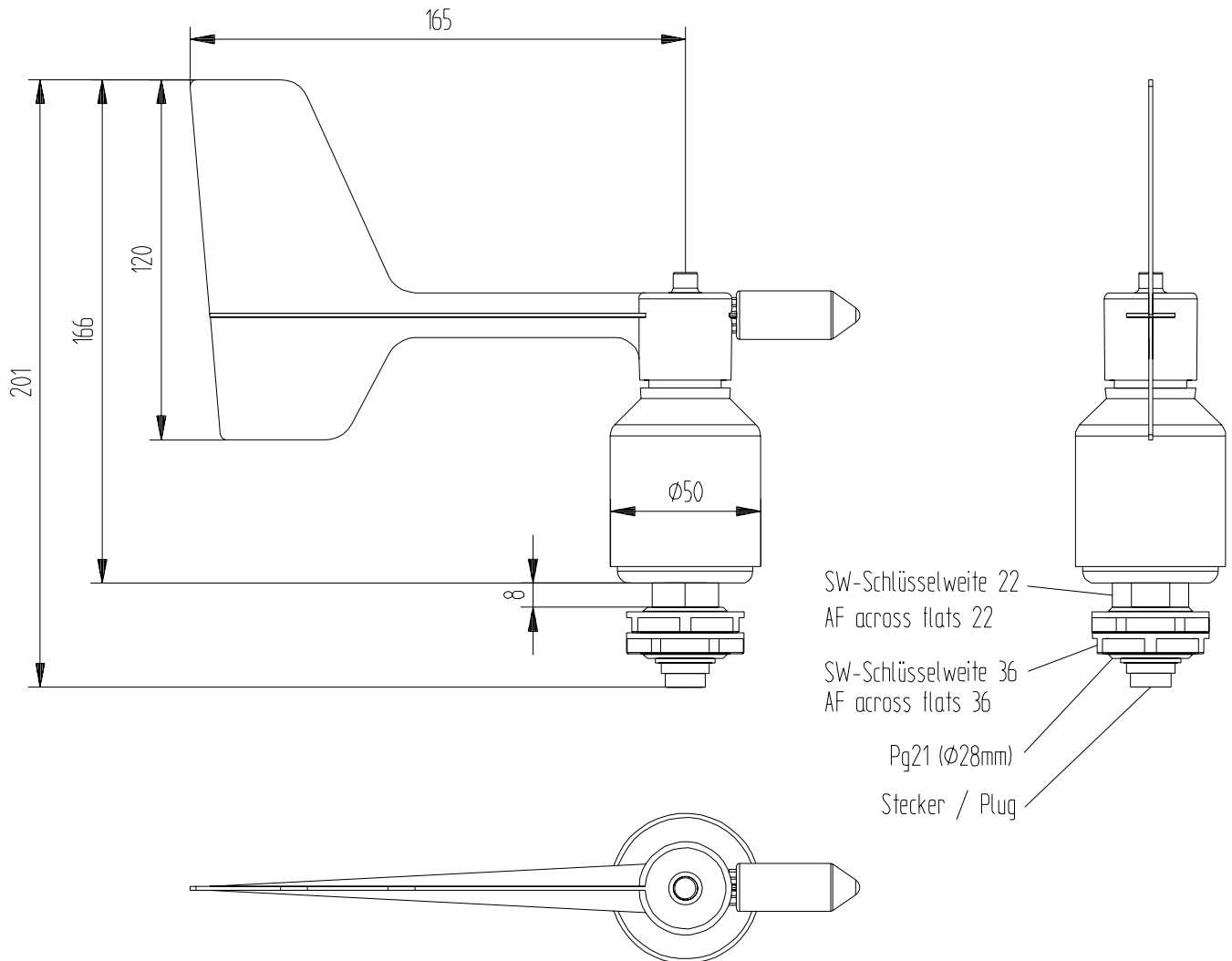
SENSOR PIN DESCRIPTION		DATA LOGGER INPUT CHANNEL	
	1	Us (+)	BAT (+)
	2	Us (-)	BAT (-)
	3	SIG	DIR 1 SIG
	4	GND	DIR 1 (-)
	-	Shield*	BAT GND
	5	Heating (+)	Heating Supply (+)
	6	Heating (-)	Heating Supply (-)
7	<b>Do not connect!</b>		

KINTECH COLOR CODES		MANUFACTURER COLOR CODES		
● Green	Green	○ White	White	Signal cable
● Brown	Brown	● Brown	Brown	
○ White	White	● Green	Green	
● Yellow	Yellow	● Yellow	Yellow	
● Yellow-Green	Yellow - Green	● Yellow-Green	Yellow - Green	
● Brown	Brown	● Grey	Grey	Heating cable
● Blue	Blue	● Pink	Pink	

HOW TO CONNECT MORE THAN ONE OF THIS SENSOR



SENSOR DIMENSIONS



## HOW TO CONFIGURE THIS SENSOR IN EOL MANAGER

Open EOL Manager and go to the data logger you are working on. Open the “inputs” tab and select the following type and model:

- /// **Section:** Wind Vanes
- /// **Type:** Windvane
- /// **Model:** Output 0-5V

**Offset value:** Tick the “Std Cal” if the north marking on the wind vane is aligned exactly towards North (in this case the offset is zero (0)). Otherwise the angle (in degrees) must be typed in the offset.

Ignore	Channel	Type	Model	Units	Serial Number	Height	Boom	Username	Std Cal	Slope	Offset	Std Dev	Max	Min
<input type="checkbox"/>	D1	Windvane	Output 0-5V			0	0	Windvane1	<input checked="" type="checkbox"/>	1.000000	0.000000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	D2	Windvane	-----			0	0	Windvane2	<input type="checkbox"/>	1.000000	0.000000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SENSOR SELECTION

MODEL SELECTION


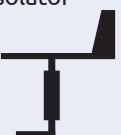
DATASHEET DOWNLOAD

STANDARD CALIBRATION

## IMPORTANT

- /// After configuring the sensor in EOL Manager make sure to upload the configuration file to your EOL Zenith data logger. See the “Quick User Guide” how to upload configuration files to the data logger.
- /// All sensor wire shields must be connected to the data logger GND terminal.
- /// The data logger should always be connected to a separated ground rod. **Not** to the lightning rod of the tower.
- /// There are two exclusive inputs in the logger for the wind vanes (DIR1 & DIR2). Connecting the 3<sup>rd</sup> – 7<sup>th</sup> wind vane use “ANALOG INPUTS” of the logger.
- /// Wind vanes connected to the “ANALOG INPUTS” of the logger must be connected to exclusive (+) and (-) terminals. The terminals (+) and (-) can consequently **not** be shared between wind vanes.
- /// Wind vanes **cannot** be connected to the “EXTRA ANALOG” channels of the logger.
- /// To store data such as Std Dev, Max and Min you should tick the corresponding boxes next to each anemometer channel when setting up your site file. Otherwise these parameters will not be stored.

### Connecting recommendation sensor-shield:

Metallic measurement mast, grounded	Drawing of wind vane incl. isolator 	The shield should be connected to both the anemometer side and the data logger side  Data logger should always be connected to ground
Metallic measurement mast, grounded	Drawing of wind vane <b>without</b> isolator 	The shield should only be connected on the data logger side <b>Not on the sensor</b>  Data logger should always be connected to ground

### Cable recommendation (up to 100 m cable):

Sensor no heating	Signal cable 4x0.5 mm <sup>2</sup>
Sensor with heating	Signal cable 4x0.5 mm <sup>2</sup>
	Heating cable 2x2.5 mm <sup>2</sup>

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