

# Wind Vane Thies Compact TMR



TMR wind direction sensor

## Description

- TMR wind direction sensor
- Output: 10-bit serial-synchronous (compatible with Ammonit Meteo-40 data loggers)
- Measurement range 0 ... 360°
- Accuracy  $\pm 1^\circ$

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 canned contact-free by a magnetic angle sensor, (TMR = Tunnel Magneto Resistance) which gives two sinus- and cosinus-dependent voltages as output signal.

A connected micro-controller calculates from this voltages the wind direction in 1024 sectors (0.35°/sector). Related to sector 1 is the wind direction 0°-35°, sector 1024 corresponds to the wind direction 359.65°-360°.

## Specifications

Characteristic	Description / Value
Measurement principle	Magnetic
Measurement range	0 ... 360°
Accuracy	$\pm 1^\circ$
Resolution	0.35°
Starting threshold	< 1 m/s according to ASTM-Standards D5366-96 < 0.4 m/s according to VDI-Standard 3786 Part 2
Output	10-bit serial-synchronous (compatible with Ammonit Meteo-40 data loggers)
Survival speed	max. 80 m/s, 30 min
Operating voltage	3.3 ... 30 VDC / 24 VAC
Operating voltage heating	24 V DC/AC, max. 20 W

Characteristic	Description / Value
Current Consumption @ 12 V DC	1 mA (without heating)
Ambient temperature	-40 ... +70 °C
Connection	7-pole plug
Material	Aluminum, stainless steel and plastic (Housing and wind vane)
Type of ball bearings	Metallic ball bearings
Weight	approx. 0.4 kg
Protection	IP 55
Manufacturer	Thies

## Sensor connection diagram

Sensor	Plug Pin No.	Ammonit Cable Wire Color*	Meteo-40 Digital	Supply Sensor
Wind Direction Data	3	white	IN	
Clock	4	blue	CLK	
Supply	1	red		12 V
Ground	2	black		Main Ground
Heating	5	orange, orange		24 VAC/DC
	6	violet, violet		

Cable type without heating: LiYCY 4 x 0.25 mm<sup>2</sup>

Cable type with heating wires: LiYCY 8 x 0.25 mm<sup>2</sup>

Connect the shield logger-sided to Ground (GND)

