Wind Vane Thies First Class TMR

Improved version of First Class wind vane

Description

Ammonit's standard is heated version. It can be used for both heated and non-heated system.

- New and improved version of First Class wind vane
- High level of measuring accuracy (0.5°) and resolution (0.35°)
- Output: 10-bit serial-synchronous (compatible with Ammonit Meteo-40 data loggers)
- Measurement range 0 ... 360°
- Low current consumption (3.3V @ 1.4 mA)

The wind vane serves for the detection of the horizontal wind direction in the field of meteorology and environmental protection. 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) through the position of the magnet field. As the sensor is operated the magnetic saturation, effects by external magnetic fields can almost be eliminated. The connected electronics calculated the angle position of the axis and provides the respective serial-synchronous output signal.

Specifications

Characteristic	Description / Value
Measurement principle	Magnetic
Measurement range	0 ... 360°
Accuracy	± 0.75°
Resolution	0.35°
Survival speed	max. 85 m/s, 30 min
Starting threshold	< 0.5 m/s at 10° amplitude (acc. to ASTM D 5366-96) < 0.2 m/s at 90° amplitude (acc. to VDI 3786 Part 2)

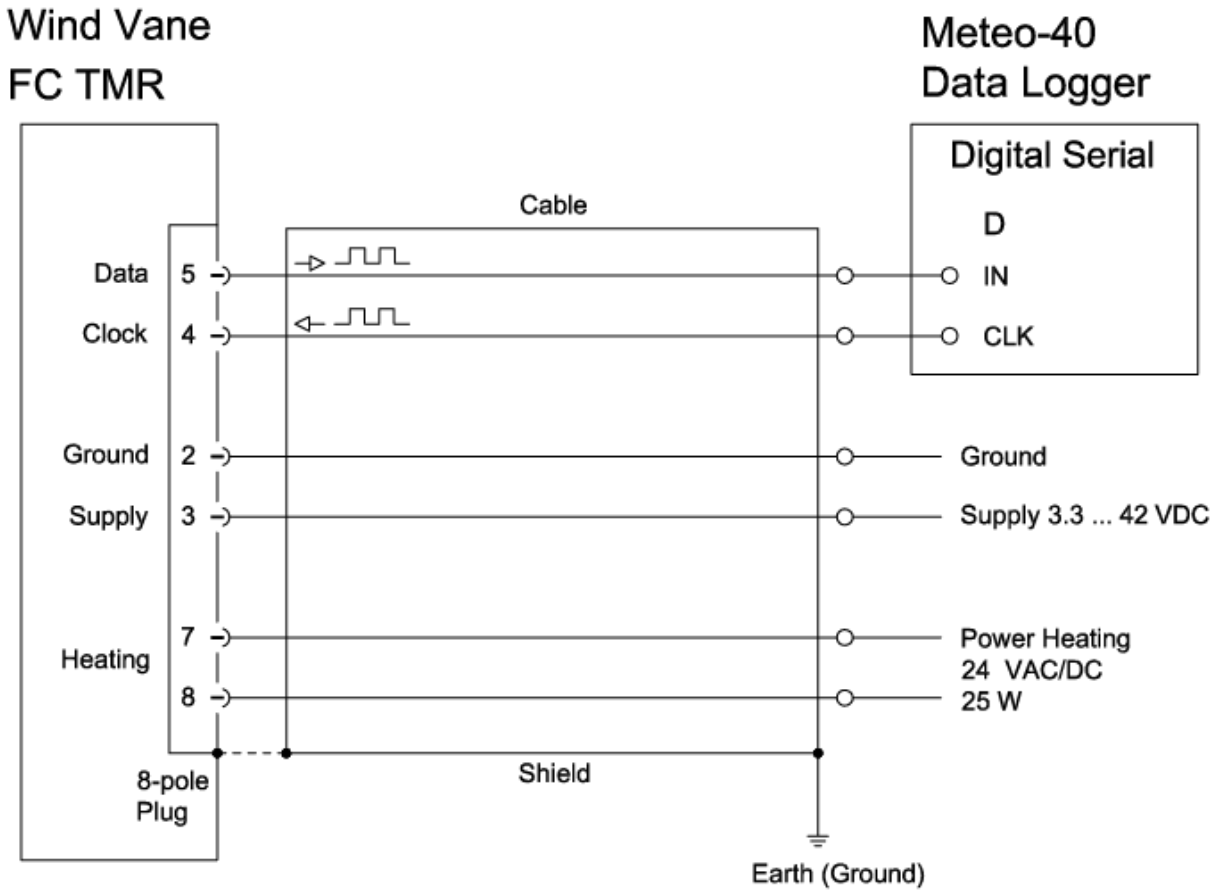
Characteristic	Description / Value
Delay distance	< 1.8 m (acc. to ASTM D 5366-96)
Damping ratio	D > 0.3 (acc. to ASTM D 5366-96)
Quality factor	K > 1
Output	10-bit serial-synchronous (compatible with Ammonit Meteo-40 data loggers)
Operating voltage	3.3 ... 42 VDC
Operating voltage heating	24 V DC/AC, 45 ... 65 Hz (galvanically isolated from housing), max. 25 W
Current Consumption @ 12 V DC	2.5 mA (without heating)
Ambient temperature	-50 ... +80 °C
Connection	8-pole plug connection for shielded cable in the shaft
Mounting	Mounting on mast 1” (DIN EN 10255; 1”= Ø 33.4 mm) 1 ½” with separate adapter (optional)
Material	Aluminum
Type of ball bearings	Metallic ball bearings
Weight	approx. 0.7 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	5	white	IN	
Clock	4	blue	CLK	
Supply	3	red		9 ... 36 V*
Ground	2	black		Main Ground
Heating	7	orange, orange		24 V AC/DC
	8	violet, violet		

* Supply voltage for usage with Meteo-40 data loggers.

Cable type without heating: LiYCY 4 x 0.25 mm²
Cable type with heating wires: LiYCY 8 x 0.25 mm²


Wind Vane
FC TMR
Meteo-40
Data Logger
Digital Serial
D
IN
CLK
Cable
Data
5
Clock
4
Ground
2
Supply
3
Heating
7
8
Ground
Supply 3.3 ... 42 VDC
Power Heating
24 VAC/DC
25 W
Shield
8-pole
Plug
Earth (Ground)