Industrial Grade Wind Sensor Set

MW 35 Anemometer and MW 36 Wind Vane

Highly reliable universal wind sensors
Designed for industrial applications
Selectable outputs
Shock and vibration proof
All-weather resistant

INTRODUCTION

Wind is the flow of air and other gasses in the atmosphere. When a difference in pressure exists between two adjacent air masses, the air tends to flow from the region of high pressure to the region of low pressure. The speed and direction of the wind are important parameters in the daily meteorological observations used in weather forecasts and in the control of industrial processes. Industries such as renewable energy, transportation and environment require accurate and reliable measurement of wind speed and wind direction.

A set of wind sensors comprises an anemometer to measure the speed and a wind vane to measure the direction. Mierij Meteo has over 25 years of experience in the development and manufacturing of anemometers and wind vanes according to the requirements of the World Meteorological Organization (WMO). All our wind sensors have passed comprehensive testing and calibration in our wind tunnel and wind vane calibrator.

Our industrial wind sensors have been tested under extreme environmental conditions (from arctic to desert climates). The embedded heater will keep the sensors ice-free at temperatures down to at least -40 °C and construction is shock and vibration proof. Another important feature is the special design to protect the bearings from dust and dirt. This ensures a long, maintenance-free, operating life.

APPLICATIONS

Mierij Meteo's industrial wind sensors are ideally suited to applications on top of wind turbines, where they are not affected by shock and vibration and can withstand very low ambient temperatures. Another common application is in solar energy to detect heavy wind loads that might affect the solar tracking of photo-voltaic panels and solar collectors. Wind measurements are often part of the information and/or safety systems on construction sites, in building automation, transportation, harbours, bridges, agriculture, and in environmental monitoring.

Wind Sensors **MW 35** and **MW 36**

Mierij Meteo has developed a set of wind sensors specifically for industrial applications; the MW 35 anemometer and the MW 36 wind vane. These are heavy duty, robust and accurate sensors, protected against static discharge, and can be mounted using a ¾ inch gas thread. Both sensors are fitted with a magnetic encoder and have no electro-mechanical parts. An embedded heater keeps the sensor ice-free down to at least -40 °C. MW 35 can measure wind speeds up to 75 m/s.

The MW 35 anemometer and the MW 36 wind vane both have an internal micro controller that can provide a number of universal industrial outputs. The user can select and pre-program the desired output, choosing from analogue, digital (MW 36 only), frequency or serial. This unique feature makes MW 35 and MW 36 compatible with a wide range of data acquisition systems.

The sensors are supplied with 5 meter of signal/power cable and operate from 12 - 24 VDC.

Building a system

Mierij Meteo supplies a wide range of accessories for the wind vanes and anemometers. For more information please visit our web site at www.mierijmeteo.nl

Mounting bracket

For easy mounting on poles up to 48 mm diameter, we offer the model MW 83 stainless steel mounting bracket.

Junction box with static discharge protection

Junction boxes MU 44 or MU 45 are advised when cable lengths over 5 meters are required. They contain protection against inductive interference and, if properly grounded, the wind sensors will have the maximum protection against static discharge. Junction box model MU 44 is painted steel, model MU 45 is polycarbonate.

Data loggers / electronics units

Mierij Meteo has a range of high performance data loggers and electronics units available for processing the signals from wind sensors.


Options

Mierij Meteo offers web-based applications for remote data presentation and remote data retrieval. We can provide tailor-made solutions, please contact us for more information.

Calibration

All our wind sensors are delivered with a test certificate. An optional individual calibration can be carried out using our wind tunnel and wind vane calibrator. We can also supply MEASNET certificates at extra cost.
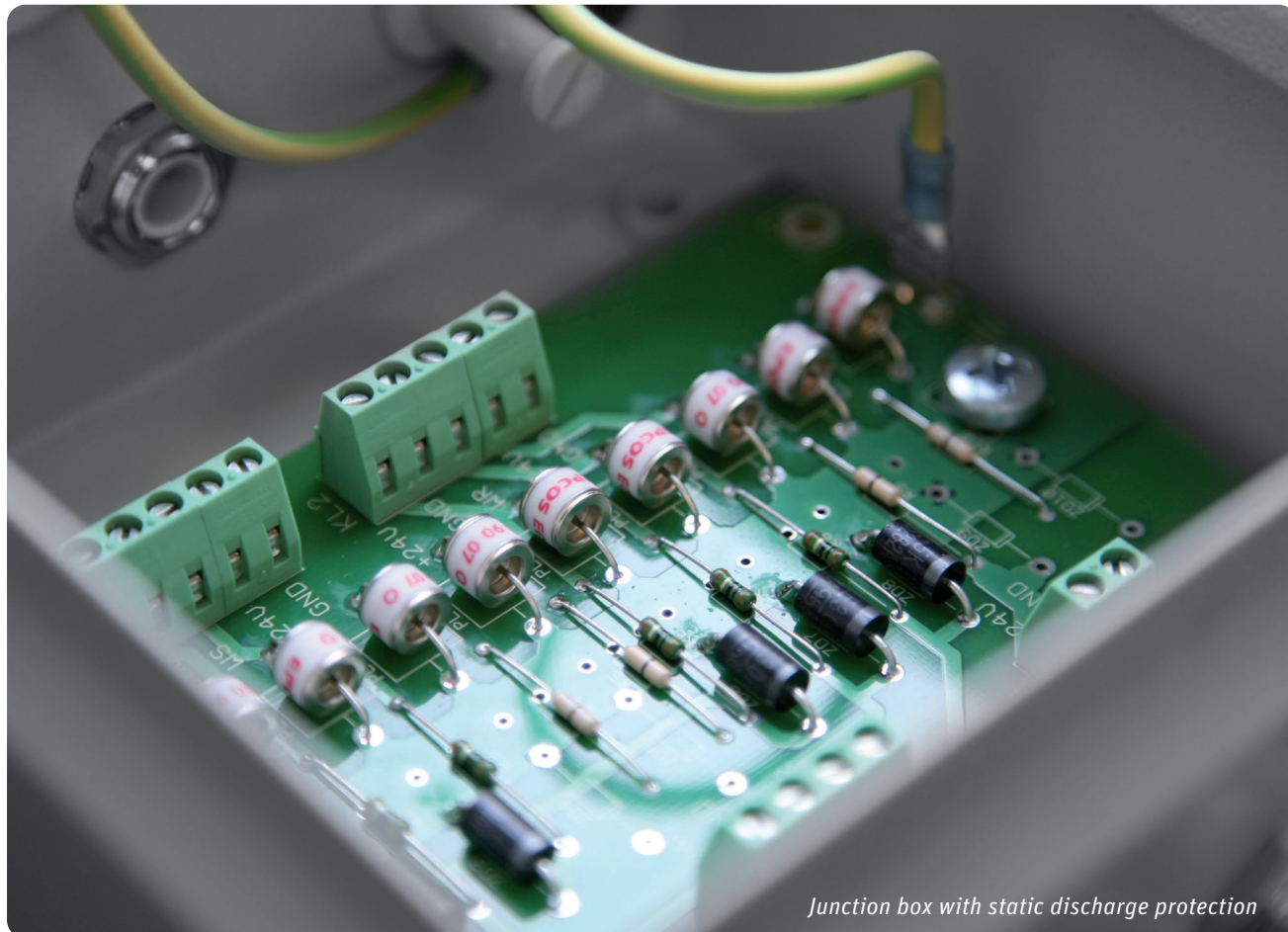
Junction box with static discharge protection

Specifications	MW 35	MW 36
Operating Range	0 - 75 m/s	0 - 360 °
Resolution ①	Better than 0.1 m/s	8 bit / 1.4 ° (internally)
Starting Speed	< 0.8 m/s	< 0.8 m/s
Maximum Wind Load	80 m/s	80 m/s
Inaccuracy	< 0.5 m/s (from 0 to 50 m/s)	< 3 °
Electrical		
Power Supply	10.8 to 30 VDC	10.8 to 30 VDC
Sensor Consumption		
with 4-20 mA output	35 mA @ 12 VDC / 30 mA @ 24 VDC	35 mA @ 12 VDC / 30 mA @ 24 VDC
with other outputs	15 mA @ 12 VDC / 10 mA @ 24 VDC	15 mA @ 12 VDC / 10 mA @ 24 VDC
Heater Consumption	50 W @ 24 VDC only	50 W @ 24 VDC only
Outputs ②		
Analogue	0 - 10 V @ 0-40 m/s	0 - 10 V @ 0 - 360 °
	4 - 20 mA @ 0-40 m/s	4 - 20 mA @ 0 - 360 °
Digital (NPN/PNP)	N.A.	1-2 bits Gray code (parallel)
Frequency (NPN/PNP)	0 - 100 Hz @ 0 - 75 m/s	0 - 100 Hz @ 0 - 360 °
	0 - 750 Hz @ 0 - 75 m/s	
	0 - 1000 Hz @ 0 - 75 m/s	
Serial	RS-485	RS-485
	NMEA 0183	NMEA 0183
Physical		
Dimensions	200 x 250 x 50 mm	200 x 300 x 50 mm
Weight	1 kg	1 kg
Material	Stainless Steel / anodized aluminium / ABS / polyamide	
Operating Temperature	- 40 °C to + 60 °C The heater ensures operation to -40 °C in icing conditions	
Installation		
Mounting ③	3/4" female gas thread	3/4" female gas thread
Connection	5 meter shielded cable	5 meter shielded cable
Warranty		
From date of delivery	3 years	3 years
Notes:		
① The effective resolution depends upon the output signal type		
② Other output ranges are available on request, please contact us		
③ Different mountings and adapters are available on request, please contact us		

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