

Instruction Manual

MW 35 Anemometer



IMPORTANT USER INFORMATION

Reading this entire manual is recommended for full understanding of the use of this product.



Should you have any comment on this manual we will pleased to receive them at:

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Mierij Meteo guarantees that the product delivered has been thoroughly tested to ensure that it meets its published specifications. The warranty included in the conditions of delivery is valid only if the product has been installed and used according to the instructions supplied by Mierij Meteo.

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1. INTRODUCTION

This Instruction sheet describes the mounting and connection of the MW 35 Anemometer. This anemometer has been developed for measuring wind speed under extreme environmental conditions, such as installation on wind turbines. All MW 35 Anemometers are supplied with an embedded heater and have selectable outputs.

The MW 35 Anemometer has a wide power supply of 12 - 24 VDC. The embedded heater for operation to -40°C needs 24 VDC (50W)

The available outputs are 4 - 20 mA / 0 – 10 V / Frequency or Serial data (RS 485).

The MW 35 Anemometer is shock and vibration proof.

IMPORTANT NOTE: The current models are pre configured ex factory and cannot be changed by user! This feature will become available soon.

2. INSTALLING THE WIND SENSORS

2.1 SITING

The MW 35 Anemometer should be installed vertically and free from obstacles to avoid disturbance and turbulences.

2.2 INSTALLATION

The MW 35 Anemometer should be mounted vertically on top of a pipe with a 3/4" male gas thread. As option you can use Mierij Meteo MW 83 Mounting Bracket. Connect the wires after fixing the MW 35 Anemometer. Check the correct wiring of the MW 35 Anemometer in the tables below depending to the output signal you use.

The MW 35 Anemometer does not need any aligning.

2.3 CONNECTIONS OF MW 35 ANEMOMETER

As the MW 35 Anemometer has selectable outputs please us the connection table with the output for your application.

2.3.1 MW 35 Anemometer with 4-20 mA output

The table below shows the connection for the MW 35 Anemometer with 4-20 mA output. Default range is 4-20 mA @ 0 –40 m/s.

The "Shield" of the cable should be mounted to an appropriate within maximum 5 meters of the MW 35 Anemometer for the best protection against static discharge.

Wire Colour	Function
White	+12....24 VDC
Brown	0 V / GND
Grey	I out (4-20 mA)
Red	Heater + (24 VDC)
Blue	Heater – (0V / GND)
Shield	Shield/Ground

2.3.2 MW 35 Anemometer with 0-10V output

The table below shows the connection for the MW 35 Anemometer with 4-20 mA output. Default range is 0-10V @ 0 – 40 m/s.

The “Shield” of the cable should be mounted to an appropriate within maximum 5 meters of the MW 35 Anemometer for the best protection against static discharge.

Wire Colour	Function
White	+12....24 VDC
Brown	0 V / GND
Pink	U out (0-10V)
Red	Heater + (24 VDC)
Blue	Heater – (0V / GND)
Shield	Shield/Ground

2.3.3 MW 35 Anemometer with Frequency output

The table below shows the connection for the MW 35 Anemometer with Frequency output. Default range is 0-750 Hz @ 0 – 75 m/s.

The “Shield” of the cable should be mounted to an appropriate ground within maximum 5 meters of the MW 35 Anemometer for the best protection against static discharge.

Wire Colour	Function
White	+12....24 VDC
Brown	0 V / GND
Grey	F out (0-750 Hz)
Red	Heater + (24 VDC)
Blue	Heater – (0V / GND)
Shield	Shield/Ground

2.3.4 MW 35 Anemometer with Serial Output (RS-485)

The table below shows the connection for the MW 35 Anemometer with Serial RS-485 output. The output protocol is described in chapter 2.3.4.1.

The "Shield" of the cable should be mounted to an appropriate ground within maximum 5 meters of the MW 35 Anemometer for the best protection against static discharge.

Wire Colour	Function
White	+12...24 VDC
Brown	0 V / GND
Yellow	RS 485 A (+)
Green	RS 485 B (-)
Red	Heater + (24 VDC)
Blue	Heater – (0V / GND)
Shield	Shield/Ground

2.3.4.1 Output Protocol According to NMEA 0183:

The output protocol of the MW 35 Anemometer is according to NMEA 0183:

NMEA A = YELLOW
 NMEA B = GREEN
 Baud rate = 4800
 Data bits = 8
 Stop bits = 1
 Parity = none

Format: \$WIMWV,ddd,R,ss.s,M,A<CR><LF>

Description:

- \$ = Start of sentence
- WI = Device type: Weather Instruments
- MWV = Wind speed and direction
- ddd = Wind direction value (*not used / always 0 for MW 35 Anemometer*)
- R = Relative to the vessel (not applicable)
- ss.s = Wind speed value [0..25.5 m/s]
- M = Unit for wind speed [m/s]
- A = Data always valid for MW 35 Anemometer

3. GROUNDING

The sensors are protected against outside inductive interference in accordance with international standards. However, the proper operation of the transient protection largely depends on proper grounding.

Therefore we recommend connecting the shielding to an appropriate "ground" at the end of the wind sensor cable (5 meter). Even when larger cable lengths have to be applied we recommend a proper grounding at max. 5 meter.

For most effective protection against static discharge we recommend to use our MU 45 Junction Box with static discharge protection as an option.

4. MAINTENANCE

The MW 35 Anemometer have been assembled very accurate and high quality bearings are used. The cup assembly has a special design to prevent the bearings against dust or other small particles. This results in a large maintenance intervall. Depending to the circumstances on site we recommend a maintenance interval of 7-10 years. After this interval bearing should be replaced.

4.1 SPARE PARTS

60900008 Cup for MW 35 Anemometer

5. TECHNICAL SPECIFICATIONS

5.1 SPECIFICATIONS MW 35 ANEMOMETER

Operating range	0 - 75 m/s
Resolution	< 0,1 m/s
Starting speed	< 0,8 m/s
Maximum wind load	80 m/s
Inaccuracy	< 0,5 m/s @ 0-50 m/s

5.1.1 Electrical

Power supply	10.8 .. 30 VDC
Power consumption (4-20 mA output)	35 mA (12VDC) / 30mA (24VDC)
Power consumption (other outputs):	15 mA (12VDC) / 10mA (24VDC)
Heater (24 VDC only)	24 VDC / 50W

5.1.2 Outputs

Analogue	0-10V @ 0-40m/s (default) 4-20mA @ 0-40m/s (default)
Frequency (push/pull)	0-750Hz @ 0-75m/s (default) 0-100Hz @ 0-75m/s
Serial	0-1000Hz @ 0-75m/s RS-485 / NMEA 0183

5.1.3 Physical

Dimensions	200 x 250 x 50 mm
Weight	1 kg
Material	SST/ anodized aluminium/ABS / polyamide
Operating temperature	-40°C ... +60°C The heater ensures operation to -40°C in icing conditions
Static discharge Protection	Protected against inductive interference up to 1500 W IP-65

5.1.3.1 Installation

Mounting Connection	3/4" female gas thread 5 meter shielded cable
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5.1.3.2 Warranty

Warranty	36 months from date of delivery
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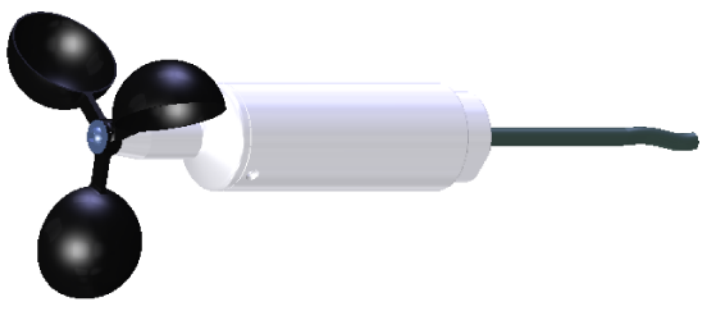
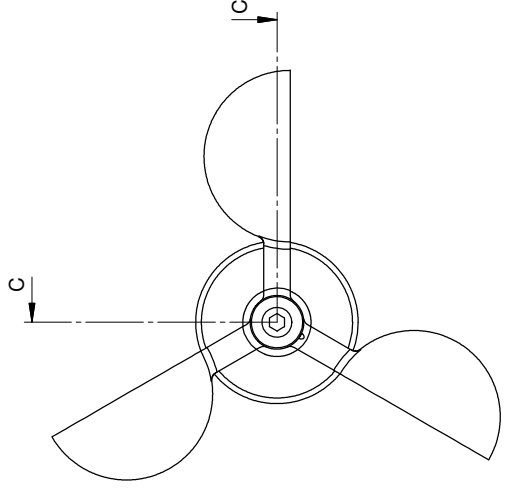
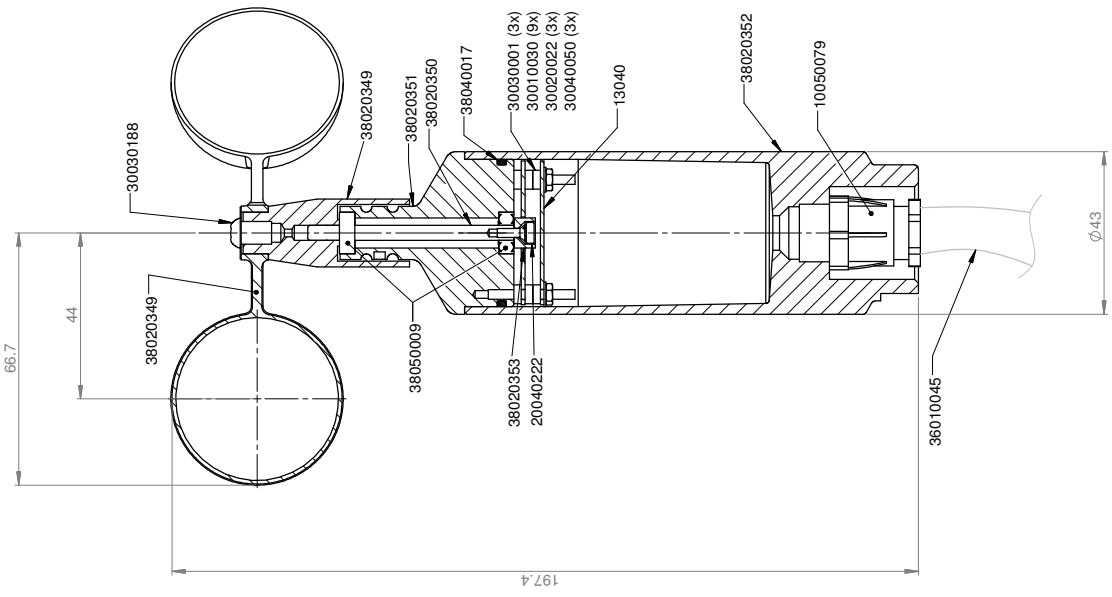
6. SUPPORT

For questions about installation or other support

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7. DRAWINGS

Number	Description
115-60010019	Anemometer MW 35



norm standard		in. tol. ISO 129	schroefde. ISO 965	dim. tol. ISO 286	ruwheid ISO 1302	material	verfijnings DIN 679	0.3	voorn. afwijking gem. toleranties	ISO 128 ISO 1101	1:1
afwijking dikte		± 0.2	6H/9g	H13/M13	Ra in µm	0.8	0.8	-0.3			
app. orderproj.		projectorder no.		voorg. leveren nr.		preval. ex. nr.		naam		titel	
Mierij Meteo METEO SYSTEMS		gekeurd door		J. vd Voort		gecheckt door				Anemometer MW 35	
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Declaration of Conformity

According to EC guideline 89/336/EEC

we

Mierij Meteo BV

declare under our sole responsibility that the product

Anemometer type MW 35

to which this declaration relates is in conformity with the following standards

EN 50081-1

EN 50082-1

EN 55022

following the provisions of the directive.

**Mierij Meteo BV
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Research & Development**

A handwritten signature in black ink, appearing to be 'A. Hagedoorn', written in a cursive style.

Ing. A.Hagedoorn