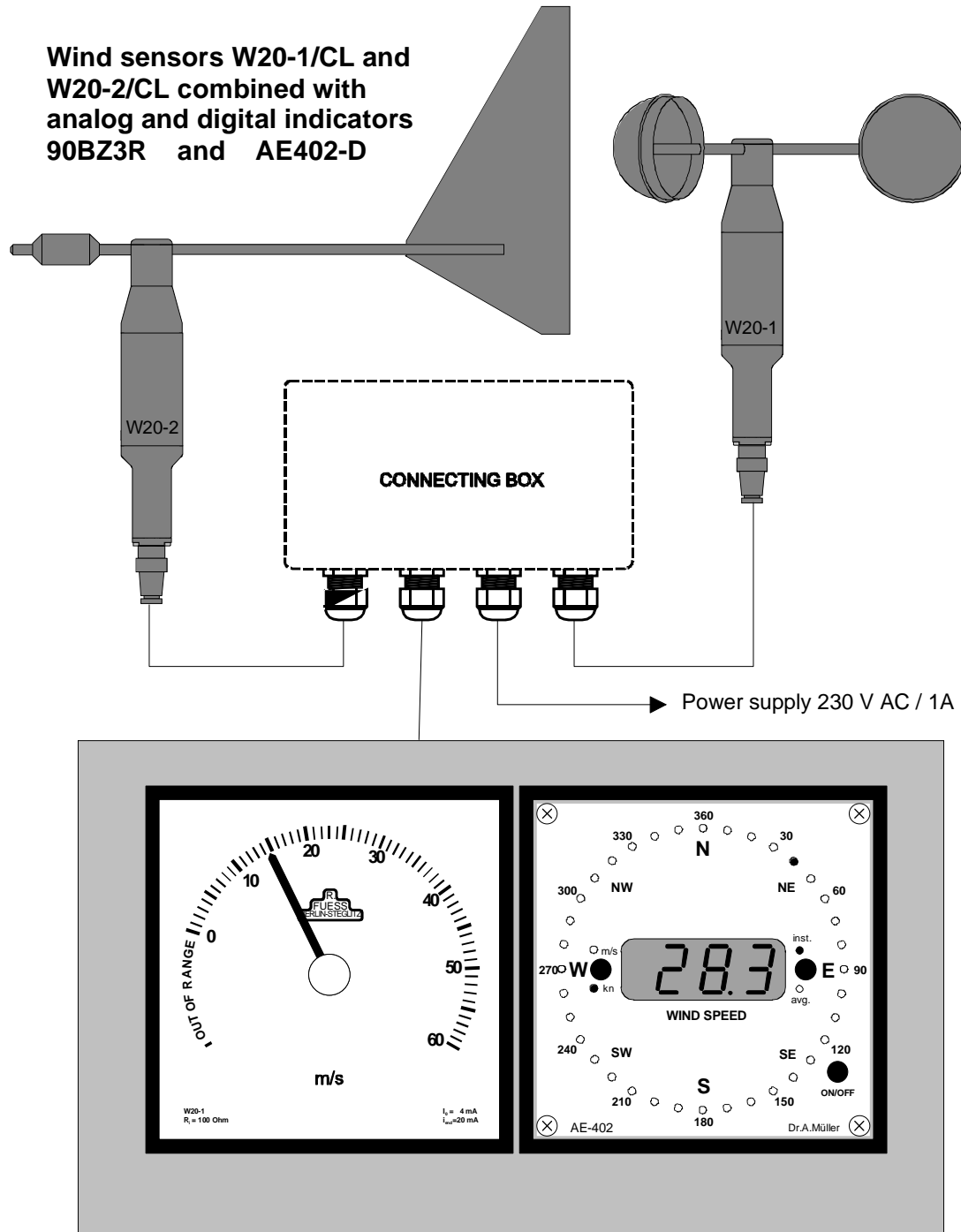


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Windmeasuring System AEW20



The two wire current loop sensors W20-1/CL and W20-2/CL combined with the analog display 90BZ3R and the digital display AE402-D perform a wind measuring system with a large field of application. Its main features are the ability of long data transmission with very low interference and the easy trouble detection by using the 4...20mA current loop technique.

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Display AE402-D

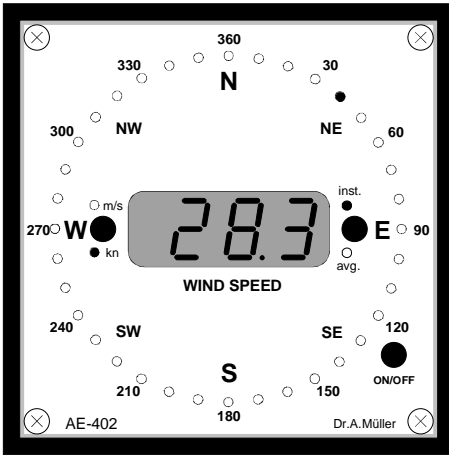
The display unit AE402-D shows wind direction by a LED-ring with 36 LED's with a resolution of 10 degrees. It shows wind speed by a large LCD-display with 18 mm high characters. Kt. or m/s are selectable by a push button, instantaneous or 2 min average can be selected by a second button. With a third button the power can be switched on or off. On the right side, there is a small switch for showing the direction LED's normal or bright.

It can be used with current loop sensors with a range of 0...60 m/s corresponding to 4...20 mA e.g. W20-1/CL and W20-2/CL without additional equipment. It has to be supplied by a DC Voltage of 15...20 V. The display is designed for panel mounting.



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Technical Data: Wind display AE402-D



Construction : Robust case from plastic and aluminium,
 useable as switchboard instrument,
 circular connectors for input and output

Direction Display : 36 luminescence diodes super red
 Display Range : 10°...360°
 Resolution : 10°

Speed display : 3 1/2 digit LCD display
 character height: 18 mm

Display Range : 0...116,6 kn / 0...60 m/s
 Resolution : 0.1 kn / 0.1 m/s

Indicators : 4 luminescence diodes for indicating
 kt or m/s & inst. or avg.

Switches : 3 press switches for power on or off,
 speed in kn or m/s,
 speed as instantaneous or 2 min average value

Input for wind speed : 4...20 mA corresponding to 0...60 m/s
 Input for wind direction : 4...20 mA corresponding to 0...360 deg.
 Power supply : 15...20 V DC / 0.1 A
 Sensor supply : equal power supply voltage / 40 mA

Output (optional) : One 5 pin socket for analogue outputs 0...20 mA
 rsp. 4...20 mA (optional)

Voltage Supply : 9V...15V DC

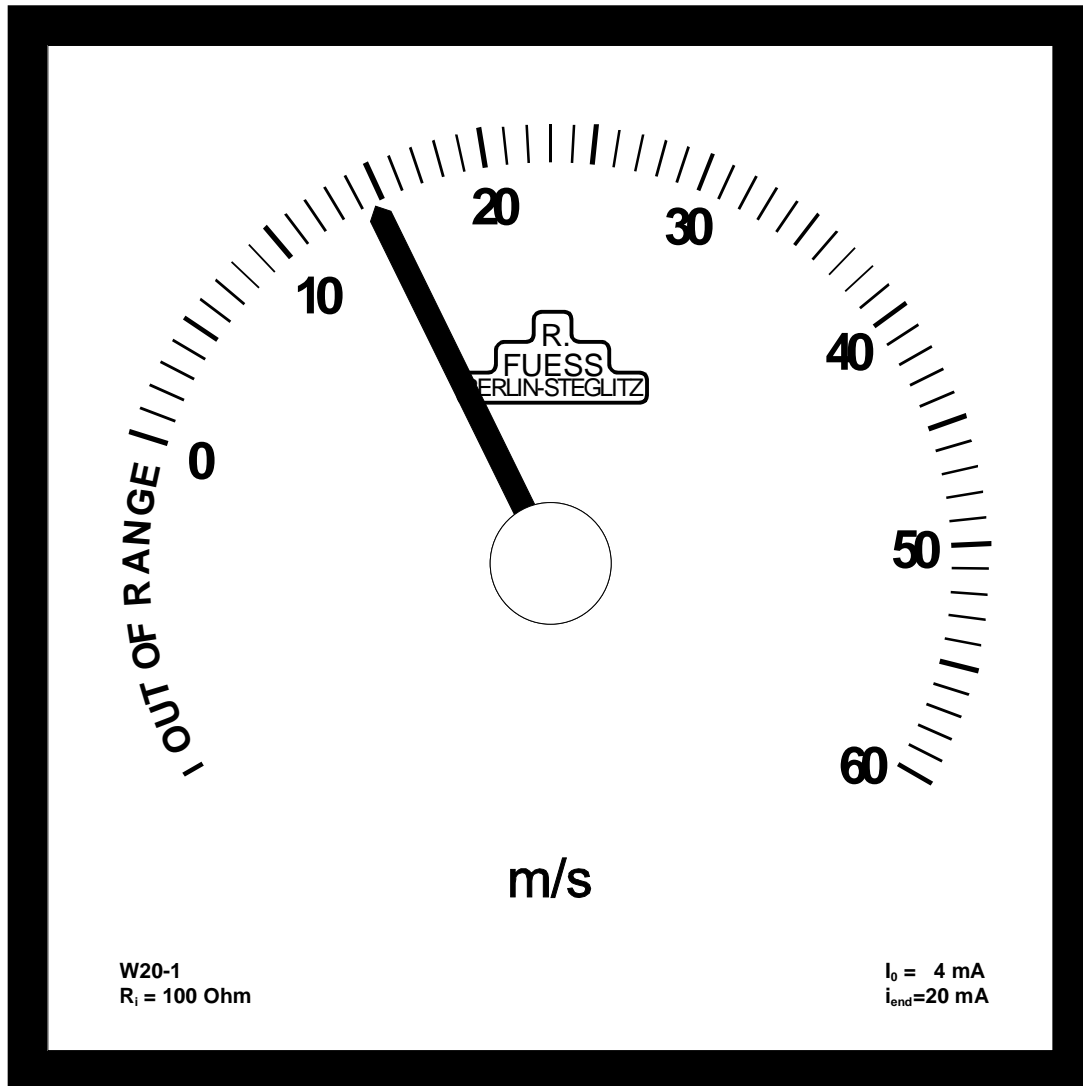
Ambient Temperature : -10°C...+60 °C
 Ambient Humidity : 10%...90% RH
 Storage Temperature : -55°C...+60°C

Build-in Dimensions : 137 mm x 137 mm
 Front Panel Dimensions : 144 mm x 144 mm x 70 mm
 Weigh : 0.5 kg

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Technical Data: Analog display 90BZ3R

The analog display 90BZ3R is an analogue panel meter to show instantaneous values of wind speed in a range of 0...60 m/s. The lower range (0...4 mA) of the moving-coil ammeter indicates interruption of power supply or interruption of the connecting wire between sensor and panel meter.



Range for wind speed	: 0...60 m/s
Accuracy	: 0.5 m/s
Accuracy of reading	: 0.2 m/s
Input	: 4...20 mA corresponding to 0...60 m/s
Dimensions	: 144mm x 144mm x 55mm
Build-in opening	: 137mm x 137mm

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The sensors **W20-1/CL** and **W20-2/CL** have been designed to provide accuracy, sensitivity and reliability using modern technology for construction and materials for operation under all climatic conditions. The wind sensors are supplied with thermostatic controlled heating device for trouble-free operation up to -50°C , if ordering the option /H (**W20-1/CL/H** and **W20-2/CL/H**). The sensor contains a standard 4 to 20 mA two wire current loop amplifier for long distance data transfer to a display unit or computer station. The input voltage range is 10 ...50 V DC.

Wind speed sensor W20-1/CL
and W20-1/CL/H

This sensor **W20-1/CL** is designed for measuring of wind speed with low threshold (0.5 Kn.) up to strongest wind. The rugged 3-cup anemometer is completely made of anodised aluminium, durable and lightweight. A labyrinth prevents dust and water from bearings. A water-proof 7-pin plug provides a safety cable connection. Eight small magnets attached to the axis produce in a fixed dry-reed contact pulses frequency proportional to wind speed, which are transformed to a DC current by a current loop amplifier with a Butterworth filter, 4...20 mA corresponding to 0...60 m/s. The heating requires a supply voltage of 200...250 V AC.



Specifications

Sensor type	: 3-cup anemometer with dry-reed contact
Signal output	: 4 - 20 mA two wire current loop
Input	: 10 - 50 V DC
Measuring range	: 0 - 80 m/s (20 mA correspond to 60 m/s)
Accuracy	: 1.5 % of measured value
Start velocity	: 0.3 m/s
Distance constant	: 1.5 m
Connection	: 7pin water-proof plug pin 1 NC, pin 2 NC, pin 3 signal -, pin 4 signal +, pin 5 and pin 6 AC voltage for heating.
Heating supply	: 200...250 V AC
Ambient temperature	: $-20... + 60^{\circ}\text{C}$
with heating	: $-50... + 60^{\circ}\text{C}$
Cup diameter	: 100 mm
Cup wheel diameter	: 410 mm
Dimension (body only)	: 300 mm x 60 mm (HxD)
Weight	: 1.5 Kg
Material	: aluminium (anodised), stainless steel and polyamide

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Wind direction sensor W20-2/CL
and W20-2/CL/H

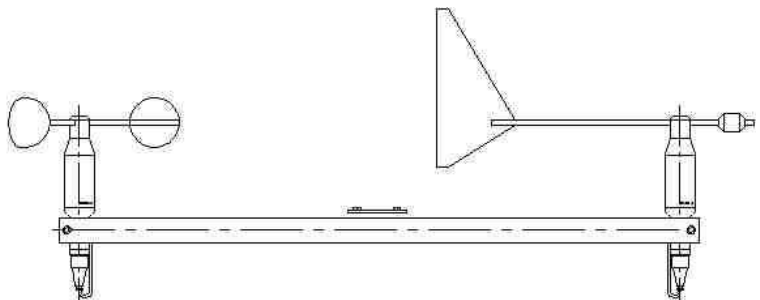
The wind direction sensor has been designed for measuring of wind direction at very low threshold (0.5 kn) using a wire-wound potentiometer with very low torque and high linearity (0.3 %). When vane axis turns, the coupled potentiometer changes the output current from 4.05 to 19.95 mA corresponding to the vane direction from 1 to 359°. The vane can be removed from the cross arm for maintenance and reinstalled without new orientation, because pin and key allow mounting in the original position only.

Specifications:

Sensor type	: wind vane with potentiometer
Signal output	: 4 - 20 mA two wire current loop
Input voltage range	: 10... 50 V DC
Measuring range	: 1...359°
Accuracy	: +/- 2°
Resistance linearity	: 0.3 %
Damping ratio	: 0.2 m/s
Connection	: 7 pin waterproof plug: pin1 NC, pin2 NC, pin3 signal -, pin4 signal +, pin5 and pin6 AC voltage for heating.
Heating supply	: 200...250 V AC
Ambient temperature	: -20... + 60°C
with heating:	: -50... +60°C
Overswing	: < 10°
Radius of vane circle	: 430 mm
Dimension (body only)	: 300 mm x 60 mm (HxD)
Weight	: 1.5 Kg
Material	: aluminium (anodized), stainless steel and Delrina

Crossarm for sensor mounting
and mast adapter W20-3

Material	: aluminium (anodized)
Length	: 1.3 m
Tube	: Ø 50 x 5 mm
Center hole	: Ø 38 mm



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