FSG
FERNSTEUERGERÄTE

Rope Length Transmitter

Tilt Angle Sensor

Wind Sensor

Joystick

Pedal Actuated Transmitter

Angular Position Transducer

MEASUREMENT · CONTROL · REGULATION

THE WIND SENSOR

They are used for detecting and, in connection with the appropriate indicator, monitoring a maximum wind velocity. They are used mainly in safety and monitoring systems of cranes and excavators, on ski-lifts and cablecars, wind energy plants as well as in meteorological stations. Two models are available. One with pendulum orientation, especially suited for the attachment on jibs of mobile cranes, and a common one, pedestal mounted or mounted on a vertical post.

Because of their particular capsuled assembling both versions, i. e. with magnetic measuring system as well as with generator, have proved to be very reliable – even under extreme environmental conditions. Cross arms – with rigid or springy bars – and crown are designed for a reliable outskirt area use. For applications in the temperature range down to minus 35°C there is optionally available a mounting arrangement for an electronic controlled heating device.

For special applications high-quality surfaces and versions for anti-gas areas are available. The wind velocity indicators are optionally available with different analogue or digital outputs.

THE INDICATOR
contains an electronic LED circular bar graph display with a maximum limiting position contact, adjustable from outside. The measuring value is represented in form of a green bar graph display. By a read-out potentiometer on the front side the limit value mark can be preselected within the chain of diodes. If the green shining actual value display passes over the red shining mark of the preselected limiting value, the colour of the actual value display changes to red. At the same time, the limit value relay switches over and signalises the passing over the maximum value by switching over a floating contact.

THE SWITCHGEAR
is an electronic comparator, constructed as a plastic casing, surface-type, suitable for screwing or rail mount according to DIN 46277. Up to a maximum of four limit monitors can be integrated in one casing unit, their switching points can be adjusted separately by means of trimming potentiometers between 0 and 100 % of the input quantity. The output signals are available via floating relay contacts, which are either normally-closed or normally-open contacts.

MAGNETIC MEASURING SYSTEM

The magnetic measuring system allows a wear-free and non-contact signal recording, even reliable under extreme environmental conditions. A corrosion-resistance cross arms-driven permanent magnet generates a change in signal inside the magnet sensor, which is integrated in a generally closed aluminium casing. A processor converts the magnet pulses into analogue or digitally coded signals, proportional to the speed.

MODEL TYPES OF CROSS ARMS

Rigid cross arms: Wind sensors are equipped with rigid and non-corrosive wind cups by default.

Springy cross arms: In order to avoid mechanical stress springy cross arms are used. This version is mostly used in anemometers with pendulum orientation for cranes and excavators.

TACHO-GENERATOR

Same design, but with a tacho-generator incorporated inside the sensor casing body which is driven by the wind speed. Output signal, being proportional to the wind speed is taken in form of a voltage in 2-wire circuit. Thus enabling a wind speed recording without additional supply voltage.

HEATING UNIT

An electronic controlled heating unit being activated at +5 °C. Available for both anemometer versions. The heating with a power of 5 W is either fed by supply voltage or separately according to customer requirements.

System versions	magnetic	magnetic	Tacho-Generator	Tacho-Generator
				
Mechanical Data				
Series	**AN-60-Z-MH-…**	**AN-60-P-MH-…**	**AN-60-Z-GEN-…**	**AN-60-P-GEN-…**
Casing	Ø 45 mm	Ø 45 mm	Ø 45 mm	Ø 45 mm
Casing material	Aluminium, gray coated	Aluminium, gray coated	Aluminium, anodized	Aluminium, anodized
Casing length without shaft	157 mm	292 mm	157 mm	292 mm
IP code of casing up to	IP65	IP65	IP64	IP64
Fastening	Z = central	P = pendulum	Z = central	Z = central
Cross arms	rigid or springy	rigid or springy	rigid or springy	rigid or springy
Material of cross arms	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
measuring range	0 – 40 m/s (max. 50m/s)	0 – 40 m/s (max. 50m/s)	0 – 40 m/s	0 – 40 m/s
Temperature range heated	-35°C up to +70°C	-35°C up to +70°C	-35°C up to +70°C	-35°C up to +70°C
Temperature range	-20°C up to +70°C	-20°C up to +70°C	-20°C up to +70°C	-20°C up to +70°C
Shock	50 g, 6 ms	50 g, 6 ms	50 g, 6 ms	50 g, 6 ms
Vibration	4 g Sinus, 5 – 100 Hz	4 g Sinus, 5 – 100 Hz	4 g Sinus, 5 – 100 Hz	4 g Sinus, 5 – 100 Hz
Connection	key or cable	plug or cable	plug or cable	plug or cable
Weight	800 g	1200 g	800 g	1200 g
Electrical Data				
Switch	–	–	–	–
Voltage output	–	–	0 – 3.4 V DC at RL = 500 Ω	0 – 3.4 V DC at RL = 500 Ω
Current output	4 – 20 mA	4 – 20 mA	–	–
Signal output current	2-, 3- and 4-wire system	2-, 3- and 4-wire system	2-wire system	2-wire system
Max. burden current output	600 Ω	600 Ω	–	–
Pulse output	–	–	-	-
Bus output	CANopen / Profinet	CANopen / Profinet	–	–
Signal calibration	Fixed alignment	Fixed alignment	Fixed alignment	Fixed alignment
Accuracy	±3% + 0.5 m/s Offset	±3% + 0.5 m/s Offset	±3% + 1 m/s Offset	±3% + 1 m/s Offset
Supply [1)]	18 – 36 V DC	18 – 36 V DC	–	–
Heating unit <5°C	18 – 33 V DC max. 0,4 A	18 – 33 V DC max. 0,4 A	–	–
Current consumption	< 80 mA without heating	< 80 mA without heating	–	–
Temperature coefficient	–	–	–	–
Test voltage	500 V, 50 Hz, 1 min	500 V, 50 Hz, 1 min	500 V, 50 Hz, 1 min	500 V, 50 Hz, 1 min
Immunity standard	EN 61 000-6-2	EN 61 000-6-2	EN 61 000-6-2	EN 61 000-6-2
Emission standard	EN 61 000-6-4	EN 61 000-6-4	EN 61 000-6-4	EN 61 000-6-4
Other				
Customized features	Central fastening	Pendulum version	No supply voltage necessary	No supply voltage necessary
Optional	Ex	Ex		
Article number	2028S02	2028S02	2028S22	2028S22

*) 250 Ω at 6 – 35 V DC supply respectively 500 Ω at 11 – 35 V DC
1) other on request

System versions	magnetic	magnetic	speed indicators	controller
				
Mechanical Data				
Series	**WR-Z-MH-…**	**WR-P-MH-…**	**GA-dig-1Sez/56**	**R-V-2K-02/K16**
Casing	Ø 45 mm	Ø 45 mm	panel mounting 72 x 72 mm	DIN-standard rail casing
Casing material	Aluminium, gray coated	Aluminium, gray coated	steel	plastic
Casing length	157 mm	292 mm	70 mm	110 mm
IP code of casing up to	IP65	IP65	IP40	IP30
Fastening	Z = Central	P = Pendulum	Clamp fixing	Rail mounting
Cross arms	available	available	–	–
Material cross arms	Alu, black anodized	Alu, black anodized	–	–
Measuring range	360°	360°	4 – 20mA / 0 – 3.4 V DC	4 – 20mA / 0 – 3.4 V DC
Temperature range heated	-35°C up to +70°C	-35°C up to +70°C	–	–
Temperature range	-20°C up to +70°C	-20°C up to +70°C	-20°C up to +70°C	-20°C up to +70°C
Shock	50 g, 6 ms	50 g, 6 ms	50 g, 6 ms	50 g, 6 ms
Vibration	4 g Sinus, 5 – 100 Hz	4 g Sinus, 5 – 100 Hz	4 g Sinus, 5 – 100 Hz	4 g Sinus, 5 – 100 Hz
Connection	plug or cable	plug or cable	screwclips	screwclips
Weight	800 g	1200 g	500 g	300g
Electrical Data				
Switch	–	–	max. 30 V DC, 500mA	max. 30 V DC, 500mA
Voltage output	–	–	–	–
Current output	4 – 20 mA	4 – 20 mA	–	–
Signal output current	2-, 3- u. 4-wire system	2-, 3- u. 4-wire system	–	–
Max. burde current output	600 Ω *	600 Ω *	–	–
Output	–	–	1 potential-free-charge-over-contact	2 potential-free-charge-over-contact
Bus output	CANopen	CANopen	–	–
Signal calibration	Fixed alignment	Fixed alignment	–	–
Accuracy	±2%	±2%	–	–
Supply [1)]	18 – 36 V DC	18 – 36 V DC	18 – 33 V DC	18 – 33 V DC / 230 V AC
Heating unit <5°C	18–33 V DC max. 0,4 A	18–33 V DC max. 0,4 A	–	–
Current consumption	< 80 mA	< 80 mA	< 70 mA	< 100 mA
Temperature coefficient	0.1° / 10K	0.1° / 10K	0.1% / 10K	0.2% / 10K
Test voltage	500 V, 50 Hz, 1 min	500 V, 50 Hz, 1 min	500 V, 50 Hz, 1 min	500 V, 50 Hz, 1 min
Immunity standard	EN 61 000-6-2	EN 61 000-6-2	EN 61 000-6-2	EN 61 000-6-2
Emission standard	EN 61 000-6-4	EN 61 000-6-4	EN 61 000-6-4	EN 61 000-6-4
Other				
Customized features	Central fastening	Pendulum version	actual value indication: green Limit extendance: red	2 adjustable contacts
Optional	–	–	–	2 additional contacts
Article number	2028S92	2028S42	4279S03	7522Z01

BERLIN (HEADQUARTERS)

- founded in 1946
- total Production area: 3500 m²
- number of employees: 170
- company management and sales
- design and development
- production and assembly

HEPPENHEIM

- founded in 1961
- total production area: 2700 m²
- number of employees: 40
- production and assembly

4
locations in germany

12
representations worldwide

70
years in the market

90
percent vertical range of manufacture

450
employees

KÖNIGS WUSTERHAUSEN/OT KABLOW

- founded in 1992
- total production area: 5000 m²
- number of employees: 180
- production and assembly

KÖNIGS WUSTERHAUSEN/OT ZERNSDORF

- founded in 2017
- number of employees: 60
- total production area: 4300 m²

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