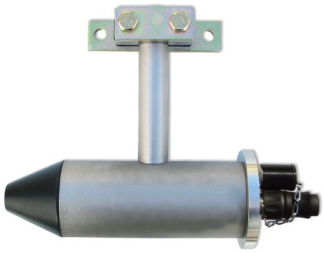
WOELKE
ENGINEERED SAFETY



Anemometer
Type WGA 15.07

Evaluator
Type GMA 30.00.5xx

VENTILATION MEASURING AND MONITORING UNIT

Type WMA 15.07.5xx-30

- **I M1 Ex ia I Ma**
- **Measurement range: 0.2...30.00 m/s or 0.01...4500 m^3/s**
- **Hot-film measurement principle. Very low long-time drift**
- **High accuracy of measurement by use of additional temperature and pressure sensors for compensation**
- **Adjustments or status enquiries by means of press buttons or magnetic pointer, the housing should stay closed.**
- **Connection of Anemometer and evaluator over cable is plug able**
- **Code lock to prevent unauthorized manipulation (can be switched off)**
- **Fault self-diagnosis with display**
- **Test of the output signal by simulated measuring values**
- **Choice between frequency or current output signal (optional)**
- **Measurement span of the measured value output is adjustable**
- **Two limit value outputs with opto-couplers or relays**
- **The components can be replaced individually**
- **Low power requirements**

The permanently installed wind speed measurement and monitoring unit WMA 15.07.5xx has been designed for, among others, the continuous monitoring of the air currents in the mines and other areas of the coal industry.

The electrical construction of this device conforms to the explosion protection rating of intrinsic safety „i“, catagory I M1 Ex ia I Ma. This means that this device can be used in the zone M1 of underground mines, even when unpermitted high concentrations of the methane gas are prevailing. This certification conforms to the ATEX Directive 2014/34/EU for equipment and protective systems intended for use in potentially explosive atmospheres.

The economical, permanently unit is characterised by its stable measurements, simple and secure operation. The housing should stay closed.

The wind speed is measured according to the principle of hot-film Anemometer.

Wind speeds in the range of 0.2 to 30.00 m/s can be measured. Also the volume throughputs between 0.01 and 4500 m^3/s can be read off. If required other measurement ranges can be made available.

By continuous measurement of the prevailing temperature and pressure the measurement accuracy is increased.

The measurement channel is protected over long periods by a dust filter which can be replaced easily.

The operation is very simple: The housing need not be opened and the operator places a small magnetic press button unit on the device. As an alternative he can also use a magnetic pointer. A four digit code can be entered for protection against unauthorized changes of the set values.

A self monitoring microcontroller system not only processes the measurement values precisely, it also carries out the operator specific instructions such as the entry of the code, signal instructions and outputs, analogue and digital outputs and test functions etc.

A four digit display shows the measured values in 12 mm high digits. The second line of the displays shows the adjusted limits and the information about their status.

The anemometer WGA 15.07 and the evaluator device GMA 30.00.5xx are connected to each other by means of plugs and a connecting cable VDL 6.

For the transmission of the measured values a 5/6...15Hz output is available. As an option a 0.1/0.2....1/mA or 4...20mA output can also be supplied. The transmission of the measured value signals can be checked against quartz stabilised test signals from the evaluator.

For triggering the local alarms two integrated limit value switches with a single opto-coupler outputs are available. Switching status and signal transmission are shown by LED displays. Both the limit values can be set up independently over the entire display range. Switching delays can be set between 3 and 20 seconds.

VENTILATION MEASURING AND MONITORING UNIT

Type WMA 15.07.5xx

Technical Data

Zone, Explosion protection rating	**Ⓔx I M1 Ex ia I Ma**
Certification	CE DMT 03 ATEX E 065 X according to directive 2014/34/EU
Anemometer WGA 15.07	
Range of measurement	0.2..30.00 m/s
Resolution	0.01 m/s
Accuracy of measurement	≤ 4 m/s: ≤ 0.10 m/s, > 4 m/s: ≤ 1.2 % of the measured value + 0.05 m/s
Measured value response time t_{90}	≤ 6 s
Evaluator GMA 30.00.5xx	
Measured value display	4 digit, liquid crystal
Display sequence	0.2 s
Display range of the measured speed value	0.00...40.00 m/s
Display range of the measured volumetric flow value	0.000...4500 m^3/s
Specified range for the correction factor c	0.50...1.50
Specified range for the cross-section area	0.10...99.99 m^2
Display delay, adjustable in sec. steps	5...20 s
Adjusting range of the device code	0000...9999
Operating voltage	9...16 V–
Rated current	23-53 mA, depending on equipment
Optional measured value output	
Frequency	
Frequency range	6...15 Hz, 5 Hz fault
Switchable to	5...15 Hz, 0 Hz fault
Measurement span adjustable between	1...30 m/s, 0.1...999.9 m^3/s
Opto-coupler output	max.: 30 V, 100 mA, 100 mW
Current	
Ranges	0.1/0.2...1 mA or 4...20 mA, or other
Measurement span adjustable between	1...30 m/s, 0.1...999.9 m^3/s
Test function by simulated measured values (It applies to all the data transmission outputs)	In 10 Steps from start to the end-value of the measurement span; additionally, fault and overrun value
Value-Limit switches GW 1 and GW 2	
Setting range	0.01...30.00 m/s or 0.1...999.9 m^3/s
Opto-coupler output (quiescent current principle)	max.: 30 V, 1 mA, 30 W
Surroundings temperature	-20...+60°C
Humidity	0... 95% rel., non condensing
Dimensions	WGA 15.07: D 90 mm, L 261 mm, H 221 mm GMA 30.00: B 122 mm, H 170 mm, D 100 mm
Weights	WGA 15.07: 2.7 kg; GMA 30.00: 2.3 kg
Housing:	
Anemometer WGA 15.07	Stainless steel 4301, 3 mm thickness, metallic bright, protection rate IP 64, impact strength >20 Joule
Evaluator GMA 30.00.5xx	Polyester, protecting rate IP 54, surface resistance < 10^9 Ohm, impact strength > 7 Joule
Accessory to be commanded separately	
Connecting cable	VDL 4, 20m length, max. length 100 m
Connecting cable	VDL 6, 10m length, max. length 100 m
Press button device	TAS 3

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