



MONIMET

Humidity-Sensor/transmitter type GMM 07.11.xxx

Humidity-Monitor type GMM 07.11.xxx

- I M1 Ex ia I Ma
- Measured value display from 0.0...100.0% r.H., non condensing
- Capacitive humidity sensor in thin-film technology
- High accuracy by compensation of the temperature by microcontroller
- Special housing suited to the working conditions in mines and industry. Steel hanger for the suspension, screw threads on the backside optional
- Illuminated four-digit display
- Output range of the output signal is variable
- Adjustments or status enquiries by means of a press button unit or a magnetic pointer. The housing need not be opened
- Code lock to prevent unauthorized manipulation (can be switched off)
- Fault self diagnosis with alpha numeric display
- Test of the output signal by simulated gas values
- Choice between normed analog or digital output signals (optional)
- Two built-in limit switches with optocouplers or relays in the monitor
- Housing protection rating IP65, sensor protection rating IP 54

The economical, permanently installed humidity sensor/transmitter and humidity monitor are characterised by their stable measurements, simple and secure operation, robustness, and compact construction.

These devices conform to the explosion protection rating of intrinsic safety „i“, category 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 devices and protective systems permitted for use in areas endangered by explosions.

The humidity monitor differs from the humidity sensor/transmitter because of an additional limit value unit which is equipped with optocouplers or relays.

The measurement of the relative ambient humidity in the sensor block is by means of an capacitive humidity sensor. The gas diffuses into the measuring chamber through a sinter metal disc.

To increase the measurement accuracy, a microcontroller continuously compensates the prevailing temperature values.

A primary filter, which can be easily replaced, protects the sinter metal against dirt.

The test humidities can be fed into the measurement chamber by means of a plug-in adapter of the type PA 1.

The operation of the device is very simple: The operator places a small magnetic press button unit on the device. The housing need not be opened. As an alternative he can also use a magnetic pointer. A four digit code which can be entered initially, protects against unauthorized changing 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 messages, analog and digital outputs and test functions etc. A four digit back lit graphic display shows the measured values in 12 mm high digits.

These devices are protected against shocks, dust and humidity by a cast metal housing (impact strength 20 Joule) and are to be connected by means of a plug-in connector. The sensor block with the humidity sensor is attached on the lower side of the housing.

A steel hanger is attached for the suspension of the device. For a rigid mounting, the device can be provided with thread holes on its rear (extra charge).

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Technical Data

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|---|---|
| Certification |  DMT 03 ATEX E 065 X according to directive 2014/34/EU |
| Zone, Explosion protection rating |  I M1 Ex ia I Ma |
| Principle of measurement | Capacitive |
| Gas entry | Diffusion |
| Range of measurement | 0...100% r.H., non condensing |
| Error of measurement | ±2% (0...90% r.H.) ±3% (90...100% r.H.) |
| Resolution | 0.1% r.H. |
| Measured value response time t_{90} | ≤ 45 s with input filter |
| Display sequence | 0.5 s |
| Run in time | 1 Minute |
| Adjustment range of the device code | 0000...9999 |
| Supply voltage | 9...16 V- |
| Current consumption | |
| Sensor/transmitter with 1 mA- or 15 Hz output | 15 mA |
| Sensor/transmitter with 20 mA output | 35 mA |
| Monitor with Optocouplers and 1 mA- or 15 Hz output | 17 mA |
| Monitor with relays and 1 mA- or 15 Hz output | 27 mA |
| Monitor with Optocouplers and 20 mA output | 37 mA |
| Monitor with relays and 20 mA output | 47 mA |
| Frequency output | |
| Frequency range | 6...15 Hz, switchable to 5...15 Hz |
| Output range adjustable between | 1...100% r.H. |
| Optocoupler output | max.: 30 V, 100 mA, 100 mW |
| Current output (alternative to the frequency output) | |
| Ranges and loads | 0.1/0.2...1 mA / ≤200 Ω to 4...20 mA / ≤200 Ω |
| Output range adjustable from | 1...100% r.H. |
| Test function by simulated measured values | 10 decimal steps from 0% r.H. to the final value of the range of the data transmission output |
| Limit switch Alarm 1 and Alarm 2 (Monitor) | |
| Setting range | 0.1...100.0% r.H. |
| Optocoupler output (quiescent current principle) | max. 30 V, 100 mA, 100 mW |
| Relay output (quiescent current principle) | max. 30 V, 1 A, 30 W |
| Surroundings temperature | -20°C...+60°C |
| Humidity, non condensing | 0...100% rel. |
| Dimensions without hanger | W 100 mm, D 100 mm, H 200 mm |
| Weight without alarm unit | 4 kg |
| Type of protection | IP 65, Gas inlet port IP 54 |
| Material / varnish paint | Die cast metal / RAL 5012 (blue) |
| Impact strength | 20 Joule |
| Accessories to be ordered separately | |
| Connecting cable | VDL 4, 20m, max. length 100 m ($R_L \leq 7,8 \Omega$) |
| Input filter | STF 3 |
| Test adapter | PA 1 |
| Press button device | TAS 3 |
| Subject to technical updates | |

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