

# Technical specifications:

## GMA200-MW4



### Display & control elements

|              |                                                       |
|--------------|-------------------------------------------------------|
| Status-LEDs: | 13 status LEDs for alarms, operating and relay states |
| Display:     | 2,2" graphic display                                  |
| Buttons:     | 5 buttons                                             |
| Alarm:       | buzzer max. 100dB(A) adjustable                       |

### Environmental conditions

|                |                                                                   |
|----------------|-------------------------------------------------------------------|
| Mounting:      | only indoors up to an altitude of 2000m above sea level           |
| for storage:   | -25...+60°C   0...99%r.h. (recommended: 0...+30°C   40...60%r.h.) |
| for operation: | -20...+55°C   0...99%r.h.                                         |

### Power supply

|                                    |                                                                                                                             |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Operating voltage U <sub>e</sub> : | 100 V to 240 Vac 50 Hz to 60 Hz mains voltage or/and 24 Vdc (20 Vdc to 30 Vdc) through stabilized SELV or PELV power supply |
| Power consumption:                 | max. 16 VA (without transmitter)<br>max. 42 VA (with transmitter)                                                           |
| Fuse:                              | F1=T 500 mA (for GMA200)<br>F2=M 1 A (for transmitter)                                                                      |

### Transmitter connections

|                                        |                                                                                                                                                                                          |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Supply outputs:                        | 24 Vdc $\pm 3\%$ with built-in power supply, otherwise 20 Vdc to 30Vdc (see above)<br>4x 150 mA or I <sub>ges</sub> =0.6 A with different allocation                                     |
| Analog input signals I <sub>IN</sub> : | 4-20 mA or 0.2-1 mA<br>Tolerance*: $\pm 0,3\%MR@4...20mA$ or $\pm 1,2\%MR@0,2...1mA$ (MR=measuring range)<br>Load approx. 50...100Ω, I <sub>max</sub> =70mA permanent / 500mA short time |
| Digital signals TRM bus1+2:            | RS485; Half-Duplex; max. 38400 Baud                                                                                                                                                      |

### Measurement value processing

|                            |                                                                          |                                                                                                                                                                                                                                |
|----------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Update time:               | 1s                                                                       | (If there are more than 16 transmitters and relay modules on the same TRM bus and the data transmission is only at 9600 baud, the cycle time is extended from 1.0 to max. 1.3 s, so that the time of 1 s cannot be maintained) |
| Adjustment time for RS485: | Rise time t <sub>50</sub> <2s or t <sub>90</sub> <2sec                   | Decay time t <sub>50</sub> <2s or t <sub>10</sub> <2sec                                                                                                                                                                        |
| for 4...20mA:              | Rise time t <sub>50</sub> <2s or t <sub>90</sub> <4sec                   | Decay time t <sub>50</sub> <2s or t <sub>10</sub> <4sec                                                                                                                                                                        |
| for 0,2...1mA:             | Rise time t <sub>50</sub> <6s or t <sub>90</sub> <10sec                  | Decay time t <sub>50</sub> <6s or t <sub>10</sub> <10sec                                                                                                                                                                       |
|                            | (extended by setting times of the gas measuring transmitters)            |                                                                                                                                                                                                                                |
| Ready delay:               | <40s (can be extended by running-in times of gas measuring transmitters) |                                                                                                                                                                                                                                |

### RS485 outputs

|            |                                                                                                        |
|------------|--------------------------------------------------------------------------------------------------------|
| GMA bus:   | RS485; Half-Duplex; max. 230400 Baud<br>(for GMA200 relay modules, control centre, PC, PLC or gateway) |
| RS485 bus: | RS485; Half-Duplex; max. 38400 Baud (only for GMA200 relay modules)                                    |

### Relay outputs

|                            |                                                                                                      |
|----------------------------|------------------------------------------------------------------------------------------------------|
| Contacts:                  | 6 relays with normally open contact                                                                  |
| Contact load capacity:     | 3A/250V AC or 3A/30V DC                                                                              |
| Minimum switching current: | 10mA                                                                                                 |
| Minimum switching voltage: | 5V                                                                                                   |
| Switching frequency:       | max. 100 per year (per relay contact), valid for SIL applications according to EN 50402              |
| Insulation clearances:     | Basic insulation between the relays: 1&2, 3&4, 5&6<br>Double insulation between the relays: 2&3, 4&5 |

### Analogue outputs

|                       |                                                                                                 |
|-----------------------|-------------------------------------------------------------------------------------------------|
| I <sub>OUT</sub> 1+2: | 4-20mA with linear transfer function (load max. 560Ω)                                           |
| Accuracy:             | $\pm 0,3\%MR@10...30^{\circ}C$ or $\pm 0,8\%MR@-20...50^{\circ}C$ (MR=measurement/signal range) |

### Alarm acknowledgement inputs

|            |                                                                                      |
|------------|--------------------------------------------------------------------------------------|
| Reset 1+2: | 0-3V DC (alarm acknowledgement occurs on contact with GND; U <sub>MAX</sub> =30V DC) |
|------------|--------------------------------------------------------------------------------------|

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|                               |                                |                                                                                                                                                                                                                                             |
|-------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Data logger (optional)</b> |                                | max. 2 GB microSD card with FAT formatting (FAT16)                                                                                                                                                                                          |
| <b>USB connection</b>         |                                | Mini USB socket for device configuration with PC                                                                                                                                                                                            |
| <b>Housing</b>                |                                |                                                                                                                                                                                                                                             |
|                               | Protection class:              | IP65 in accordance with IEC 60529; IK08 in accordance with IEC 62262                                                                                                                                                                        |
|                               | Material:                      | Plastic                                                                                                                                                                                                                                     |
|                               | Dimensions:                    | 209 x 180 x 64 mm (W x H x D)                                                                                                                                                                                                               |
|                               | Weight:                        | 890g                                                                                                                                                                                                                                        |
| <b>Cable junction</b>         |                                |                                                                                                                                                                                                                                             |
|                               | Cable:                         | 3-4 wire $\geq 0.75 \text{ mm}^2$ LiYY, NYM (for GMA200 supply)<br>2-4 wire $0.5\text{-}1.5 \text{ mm}^2$ LiYY, LiYCY (for transmitters)<br>2-wire $1 \times 2 \times 0.22 \text{ mm}^2$ BUS-LD (for GMA bus with length $> 10 \text{ m}$ ) |
|                               | Cable glands:                  | max. $9 \times \text{M}16 \times 1.5$ (for cable diameter 3-7 mm respectively 5-10 mm)                                                                                                                                                      |
|                               | Terminal blocks:               | $0.08 \text{ mm}^2$ to $2.5 \text{ mm}^2$ cross-section                                                                                                                                                                                     |
| <b>Approvals/Tests</b>        |                                |                                                                                                                                                                                                                                             |
|                               | Electromagnetic Compatibility: | EN 50270:2015 (interference emission: type class I, interference immunity: type class II)                                                                                                                                                   |
|                               | Electrical safety:             | EN 61010-1:2010 (Pollution degree 2, overvoltage category II for mains supply)<br>(Pollution degree 2, overvoltage category III for relay contacts)                                                                                         |
|                               | Functional safety:             | EN 50402:2017; IEC 61508-1 to -7:2010 (SIL2/SC3)<br>EN 50271:2018; EN 62061:2016; ISO 13849-1:2015                                                                                                                                          |
|                               | Metrological suitability:      | EN 60079-29-1:2016 (EX); EN 50104:2010 (OX); EN 45544-1/-2/-3:2015 (TOX)                                                                                                                                                                    |
| <b>Service life</b>           |                                | 20 years                                                                                                                                                                                                                                    |

\* This is only the measurement tolerance of the GMA. The transmitters have additional tolerances.