

KOMMA 100, 200, 500

multi transducer pH, redox, conductivity and temperature



The devices in the **KOMMA** family measure the parameters pH, redox, conductivity and temperature. A reversible 0/4-20 mA signal output with galvanic isolation and an RS232C serial interface is provided for the process connection. The **KOMMA**²⁰⁰ and the **KOMMA**¹⁰⁰ have three relay contacts that can be switched independently from each other. They can also be used as P/PI controller with pulse width modulation, as a limit switch or as an alarm contact. In addition, two opto-coupler switch inputs are included, which allow using as key lock, set point changeover or acknowledgement functions. The compact housing structure according to DIN IEC 61554 made of flame-retardant noryl is designed for panel mounting. The device is connected via screw-type connectors on the back side.

Features

- **microprocessor supported measurement and transformer:**

The selected measurement parameter is displayed on a large and lighted screen. The evaluation of the measurement values is attained by the calibration and correction values in the device-storage.

- **measuring of four parameters in one device:**

The selection of the pH, redox, conductivity or temperature parameters can be configured via touchscreen.

- **simple user interface via LCD-display and touchscreen:**

A large LCD-display is used as a user interface. The input can be conducted via a touch screen. The key assignments, help texts and function messages change dynamically and are displayed as plain texts. The display language (english, french, etc.) can be modified via the serial interface.

- **versatile range of process interfaces:**

The connection is carried out with two screw-type connectors placed in the backside of the device. The device is equipped with:

- three independent adjustable relays, designed as P/PI controllers with impulse length characteristic for the control of solenoid valves; in addition a setting as alarm output as well as limit controller can be realized
- two opto-isolated switch inputs: each can be independently configured as a keypad lock, as alarm stop, as switch stop, as a command to freeze the measurement value and as a controller setpoint switch
- a configurable 0 to 20 mA or 4 to 20 mA signal output with variable spread-modification for the output measurement value, temperature or limit switch values
- a RS232C serial interface for the communication with the connected PLC as well as program updates during operations and as a service interface

Application fields

- swimming pools, fish farming, breweries
- sewage treatment plants, landfills and power plants
- continuous and batch waste water treatment plants and exhaust systems
- pure and ultra-pure water plants, desalination and recirculation systems
- final inspection and monitoring

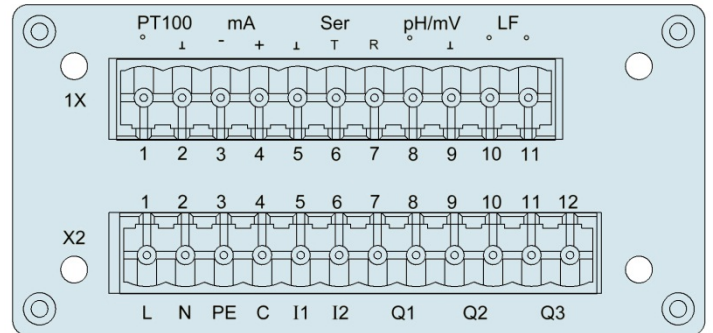
Technical data

| Parameter | | Description | |
|------------------------------------|---|---|--|
| measurement range (factory set) | pH | asym. high-impedance voltage measurement range: 0 to 14 pH resolution: 0.01 pH | |
| | redox | asym. high-impedance voltage measurement range: -1000 mV to +1000 mV resolution: 1 mV | |
| | conductivity | range: | |
| | | | 0 to 20 $\mu\text{S}/\text{cm}$, $K = 0.01 \text{ cm}^{-1}$ |
| | | | 0 to 200 $\mu\text{S}/\text{cm}$, $K = 0.1 \text{ cm}^{-1}$ |
| | | | 0 to 2 mS/cm , $K = 0.1 \text{ cm}^{-1}$ |
| | | | 0 to 2 mS/cm , $K = 1.0 \text{ cm}^{-1}$ |
| | | | 0 to 20 mS/cm , $K = 1.0 \text{ cm}^{-1}$ |
| | | | 0 to 100 mS/cm , $K = 2.5 \text{ cm}^{-1}$ |
| | | | 0 to 200 mS/cm , $K = 10 \text{ cm}^{-1}$ |
| | resolution 0,1 % on full scale measurement error < 1 % | | |
| temperature | PT100 2-wire connection range: 0 to 100 °C resolution: 0.1 °C | | |

| Parameter | | Description |
|--|-----------------------------|---|
| current output (galvanically isolated) | | 0 or 4 to 20 mA (selectable) |
| | | choice of measurement, temperature or switch |
| | | spread adjustable |
| max. load | | 500 Ω |
| relay | selection | impulse control, alarm and limit contact |
| | type | make-break contact wiping-continuous contact |
| | rated load | 250 V AC, 30 V DC, each 5 A (resistive) |
| | max load | 400 V AC, 125 V DC, each 5 A |
| power supply (factory set) | <i>KOMMA</i> ¹⁰⁰ | 24 V DC |
| | <i>KOMMA</i> ²⁰⁰ | wide range input 85 - 264 V AC, 47 - 440 Hz 24 V DC |
| front | | graphics-capable liquid crystal display (LCD), contrast and backlight adjustable |
| | | touch-sensitive panel with max. 10 keys |
| operating and storage conditions | | 0 to +45 °C, < 90 % RH |
| permitted degree of pollution | | 2 (according to DIN EN 60664-1) |
| panel cut-out | <i>KOMMA</i> ¹⁰⁰ | 91.3 mm x 45.2 mm, ±0.2 mm |
| | <i>KOMMA</i> ²⁰⁰ | 91.3 mm x 91.3 mm, ±0.2 mm |
| dimension | <i>KOMMA</i> ¹⁰⁰ | 48 x 96 x 135 mm (W x H x D including connectors) |
| | <i>KOMMA</i> ²⁰⁰ | 96 x 96 x 135 mm (W x H x D including connectors) |
| | <i>KOMMA</i> ⁵⁰⁰ | 150 x 206 x 95,2 mm ((W x H x D) |
| protection | | front: IP54 |
| | | rear: IP20 |

Connections

| No. | Description |
|-------|--|
| X1-1 | PT100 |
| X1-2 | ground PT100 (PT⊥) |
| X1-3 | 0 to 20 mA / 4 to 20 mA (-) |
| X1-4 | 0 to 20 mA / 4 to 20 mA (+) |
| X1-5 | serial interface mass (⊥) |
| X1-6 | serial interface transmit (T) |
| X1-7 | serial interface receive (R) |
| X1-8 | pH/mV - signal |
| X1-9 | pH/mV - ground (⊥) |
| X1-10 | conductivity cell - screen |
| X1-11 | conductivity cell - signal |
| X2-1 | power supply (L) |
| X2-2 | power supply neutral (N) |
| X2-3 | protective earth (PE) |
| X2-4 | common control output for switching inputs |
| X2-5 | switch input 1 |
| X2-6 | switch input 2 |
| X2-7 | relay 1, middle contact (MK) |
| X2-8 | relay 1, normally open (AK) |
| X2-9 | relay 2, middle contact (MK) |
| X2-10 | relay 2, normally open (AK) |
| X2-11 | relay 3, middle contact (MK) |
| X2-12 | relay 3, normally open (AK) |



Please specify the design (*комма*¹⁰⁰ or *комма*²⁰⁰, *комма*⁵⁰⁰) and in case of *комма*²⁰⁰ or *комма*⁵⁰⁰ the desired power supply as well when ordering.

Specifications are subject to modifications.