

## KONTROL 100



The Kontrol 100-series are advanced controllers designed for high-end applications.

The units feature independent proportional control output, probe quality checking and a variety of outputs.

The user has full programming authority.

## TECHNICAL CHARACTERISTICS

### Graphic display and Keypad

128 by 128 pixel resolution monochrome display with graphic icons to show digital output status, washing cycle, alarms with red backlight.

Simultaneous flashing values for the measurement (numeric + paragraph) and temperature readings.

Five control keys for instrument calibration and configuration.

### Enclosure Box and Power Supply

Wall mounting ABS plastic material IP65 full box (144x144x122)

Panel mounting ABS IP65 front panel only (96x96x42)

Universal Power Supply 100÷240 Vac 50/60 Hz

Low Power Supply 12÷32 Vdc or 24 Vac

### Current outputs with Galvanic isolation

4÷20mA output

Two independent programmable Output Measures with Proportional routine regulation.

### Relay Outputs

Two independent relays, two set points, alarm remote and back washing probe setting by software.

On/OFF, Timed and Proportional (PWM) routine function setting.

### Solid State Relay (SSR)

Two Frequency output signal, two set points.

### Snail Lock fixing system

Quick connection for panel mounting version.

### Communication Features

Serial Output RS485 MODBUS RTU/ASCII (upon request)



## APPLICATIONS

- Waste water
- Fish farming
- Boilers
- Irrigation
- Dairy
- Drinking water
- Reverse osmosis
- CIP
- Cooling towers
- Galvanic process

## PRODUCTS KEY

|   |         |        |                                                        |                         |                     |              |      |     |  |
|---|---------|--------|--------------------------------------------------------|-------------------------|---------------------|--------------|------|-----|--|
| K | Kontrol |        |                                                        |                         |                     |              |      |     |  |
|   | 100     | Series |                                                        |                         |                     |              |      |     |  |
|   |         | PR     | pH/Rx                                                  |                         |                     |              |      |     |  |
|   |         | FX     | Flow                                                   |                         |                     |              |      |     |  |
|   |         | CD     | Ec-Cond                                                |                         |                     |              |      |     |  |
|   |         | ID     | Inductive Conductivity                                 |                         |                     |              |      |     |  |
|   |         | MP     | Modular Parameter ...CL/PAA/BR/H2O2/O3/ ...Custom unit |                         |                     |              |      |     |  |
|   |         |        | P                                                      | Box Type 96x96          |                     |              |      |     |  |
|   |         |        | W                                                      | Box Type 144x144 (IP65) |                     |              |      |     |  |
|   |         |        |                                                        | M                       | 100-240 Vac         |              |      |     |  |
|   |         |        |                                                        | N                       | 12-32 V dc, 24 V ac |              |      |     |  |
|   |         |        |                                                        |                         | 0                   | Optinal none |      |     |  |
|   |         |        |                                                        |                         | A                   | RS485 MODBUS |      |     |  |
|   |         |        |                                                        |                         |                     | 000          | Free |     |  |
|   |         | K      | 100                                                    | PR                      | P                   | M            | 0    | 000 |  |

## MEASURE RANGE

| Measure      | Description                  | Accuracy |
|--------------|------------------------------|----------|
| pH           | 0÷14,00 pH                   | ±0,01pH  |
| ORP          | ± 2000 mV                    | ±1 mV    |
| Conductivity | 0,054÷200.000 µS(1*)         | ±2%      |
| Flow Rate    | 0,00÷99.999 Liters/Sec.(3*)  | ±0,5Hz   |
| Chlorine     | 0,00÷200.00 ppm              | ±0,01ppm |
| PAA          | 0,00÷99.000 ppm              | ±0,01ppm |
| H2O2         | 0,00÷99.000 ppm              | ±0,01ppm |
| Ozone        | 0,00÷99.000 ppm              | ±0,01ppm |
| Bromine      | 0,00÷200.00 ppm              | ±0,01ppm |
| Turbidity    | 0÷4000 NTU                   | ±2%      |
| Oxygen       | 0÷20 ppm                     | ±2%      |
| Temperature  | 0÷100°C (-32÷212 °F ±1,8°F ) | ±0,2°C   |

## TECHNICAL SPECIFICATIONS FOR THE pH MEASURE

|                      |                |
|----------------------|----------------|
| <b>Measure Range</b> | 0.00 ÷ 14.00pH |
| <b>Resolution</b>    | ± 0.01pH       |
| <b>Precision</b>     | 0.01pH         |

## TECHNICAL SPECIFICATIONS FOR THE ORP MEASURE

|                      |          |
|----------------------|----------|
| <b>Measure Range</b> | ± 2000mV |
| <b>Resolution</b>    | ± 1mV    |
| <b>Precision</b>     | ± 1mV    |

## TECHNICAL SPECIFICATIONS FOR THE FLOWRATE MEASURE

|                      |                                                        |
|----------------------|--------------------------------------------------------|
| <b>Sensor</b>        | Hall, Reed or Push-Pull <b>Sensor (Padwell rotor )</b> |
| <b>Measure Range</b> | 0,5 Hz at 1500 Hz                                      |
| <b>Resolution</b>    | ± 0.5 Hz                                               |

## TECHNICAL SPECIFICATIONS FOR THE mA MEASURE (PRIMARY)

|                      |                                  |
|----------------------|----------------------------------|
| <b>Sensor</b>        | Current Sensor with 2 or 3 wires |
| <b>Measure Range</b> | 0/20mA or 4/20mA                 |
| <b>Resolution</b>    | ±1µA                             |
| <b>Precision</b>     | ±10µA                            |

## TECHNICAL SPECIFICATIONS FOR THE CONDUCTIVITY MEASURE

| Probes                                | Range                                                  |
|---------------------------------------|--------------------------------------------------------|
| Range with C 0.01 cm-1 / K 100 sensor | 0.005 µS/cm to 200 µS/cm (5 KΩ x cm to 200 MΩ x cm)    |
| Range with C 0.10 cm-1 / K 10 sensor  | 0.05 µS/cm to 2 mS/cm (500 Ω x cm to 20 MΩ x cm)       |
| Range with C 0.20 cm-1 / K 5 sensor   | 0.1 µS/cm to 4 mS/cm (250 Ω x cm to 10 MΩ x cm)        |
| Range with C 1.00 cm-1 / K 1 sensor   | 0.5 µS/cm to 20 mS/cm (50 Ω x cm to 2 MΩ x cm)         |
| Range with C 10.0 cm-1 / K 0.1 sensor | 5 µS/cm to 200 mS/cm (5 Ω x cm to 200 KΩ x cm)         |
| Range with C 20.0 cm-1 / K 0.5 sensor | 10 µS/cm to 400 mS/cm (2,5 Ω x cm to 100 KΩ x cm)      |
| Resolution Cond/Res                   | 0.0001 / 0.001 / 0.01 / 0.1 / 1 (adjustable from menu) |
| Accuracy Cond/Res                     | ± 2% on the measuring point                            |
| Maximum distance of the sensor        | up to 50 m (up to 164 ft)                              |
| TDS Range                             | 0.3 to 2.0 ppm/µS                                      |

## TECHNICAL SPECIFICATIONS FOR THE EC-IND MEASURE

|                      |                                |
|----------------------|--------------------------------|
| <b>Measure Range</b> | 0÷1000 / 0÷200 / 0÷20 / 0÷2 mS |
| <b>Resolution</b>    | 1 / 0,1 / 0,01 / 0,001 mS      |
| <b>Precision</b>     | ± 2% f.s.                      |

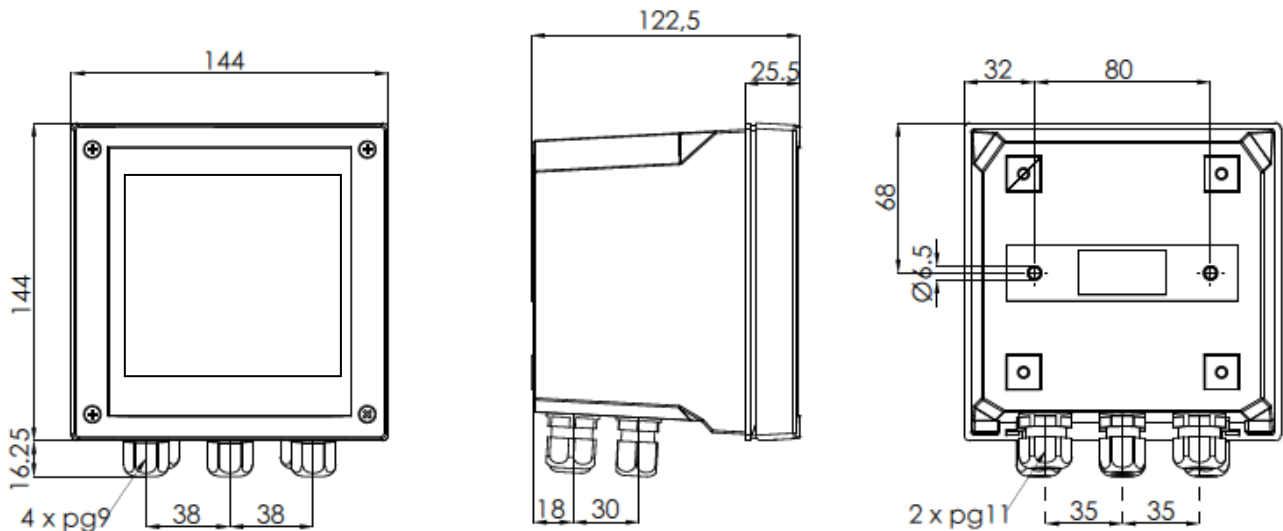
## TECHNICAL SPECIFICATIONS FOR THE TEMPERATURE MEASURE (SECONDARY)

|                      |                                                  |
|----------------------|--------------------------------------------------|
| <b>Sensor</b>        | PT100/PT1000                                     |
| <b>Measure Range</b> | -50 ÷ +150°C                                     |
| <b>Resolution</b>    | ± 0.1°C (°F)                                     |
| <b>Precision</b>     | PT100: ±0.5°C (±0.9°F) – PT1000: ±0.2°C (±0.4°F) |

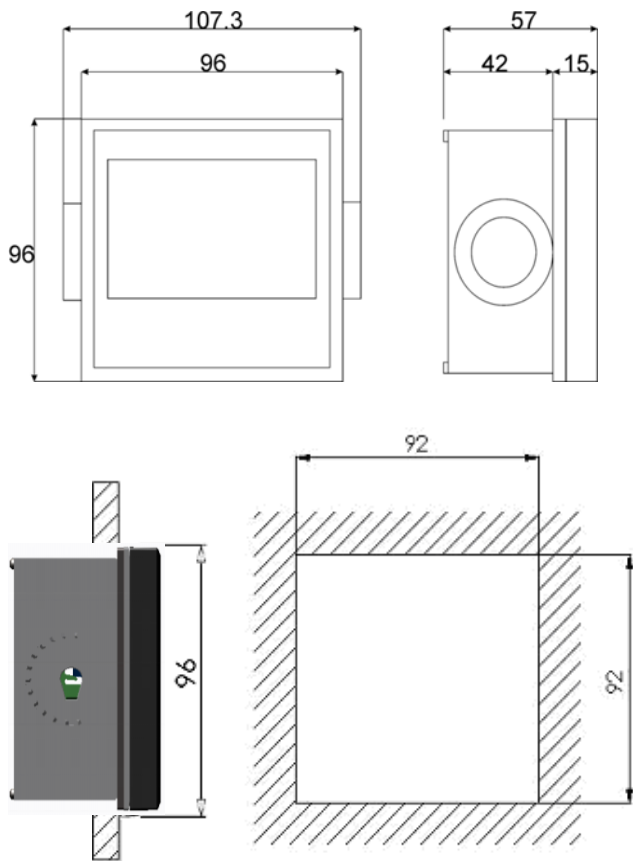
## OPERATING SPECIFICATIONS

|                                |                                                                                                                                                                                              |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Power Supply</b>            | 100÷240 Vac 50-60 Hz or 12÷32 Vdc / 24Vac                                                                                                                                                    |
| <b>Power Consumption</b>       | < 5VA (@100÷240Vac) and <3.5W (@12÷32Vdc / 24 Vac                                                                                                                                            |
| <b>Relay Outputs:</b>          | mechanical 250 VAC/5A, 30 VCC/3 A                                                                                                                                                            |
| <b>Alarms:</b>                 |                                                                                                                                                                                              |
| <b>Function</b>                | Delay, Faults and Min./Max                                                                                                                                                                   |
| <b>Delay time</b>              | 1÷3600sec                                                                                                                                                                                    |
| <b>Threshold disabling</b>     | Enable / Disable                                                                                                                                                                             |
| <b>Relay function</b>          | Closed / Open                                                                                                                                                                                |
| <b>Permanence Interval</b>     | 0.00 ÷ 14.00pH / -2000 ÷ +2000 mV                                                                                                                                                            |
| <b>Permanence Time</b>         | 1÷3600sec<br>For Alarm and Wash it is used the relay n. 2 with normally open contact, with maximum switching current of 5 Ampere at 230Vac. Maximum switching power on resistive load 230VA. |
| <b>SSR (Solid State Relay)</b> | 2-SPST 400 VAC, max 125 mA, Bidirectional, NPN, PNP<br>Frequency Output: 0 to 400 imp/min<br>Pulse Duration: 100 mSec                                                                        |
| <b>Serial Port RS485:</b>      | Serial port RS485 with Modbus RTU/ASCII Protocol.                                                                                                                                            |
| <b>HOLD Digital Input:</b>     |                                                                                                                                                                                              |
| <b>Input Voltage</b>           | 12÷32 Vdc                                                                                                                                                                                    |
| <b>Absorption</b>              | 10mA max                                                                                                                                                                                     |
| <b>Analog Outputs:</b>         |                                                                                                                                                                                              |
| <b>Outputs</b>                 | n.2 4-20mA Programmable                                                                                                                                                                      |
| <b>Maximum Load</b>            | 800 Ohm                                                                                                                                                                                      |
| <b>NAMUR Alarm Output</b>      | 3.6 mA or 22 mA                                                                                                                                                                              |
| <b>Hold Alarm Value</b>        |                                                                                                                                                                                              |

DIMENSIONS



Wall mounting size 144x144x122,5 mm



Panel mounting size 96x96x42mm

# seko



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