

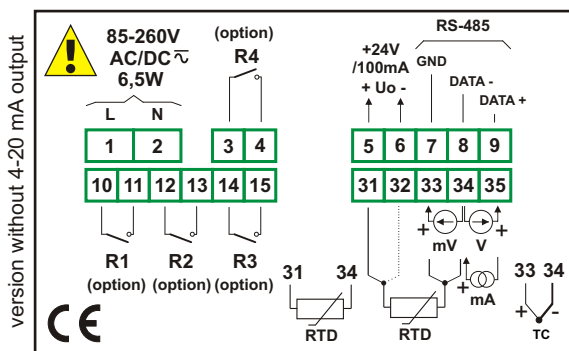
# SUR-94

- ▣ meter with universal input
- ▣ large 20 mm display
- ▣ 0, 2 or 4 relay outputs (or OC)
- ▣ RS-485 / Modbus RTU
- ▣ option: active current output

**SUR-94** meter is equipped with one universal input, type: 0/4-20mA, 0-10V, 0-150 mV, Pt 100/500/1000 or TC (K, S, J, T, N, R, B, E). During the measurement process only one kind of input is available. Temperature of cold ends is compensated automatically. RTD and TC inputs are fully linearised. The device with current or voltage input operates in the following modes: linear, root, square and user defined (max. 20 points). Result is shown on 4-digit LED display. The device is equipped with RS-485/Modbus RTU communication interface and sensor supply output. 2 or 4 relay (or OC) outputs make it possible to adjust the level of the measured signal. These outputs can be controlled according to one or two threshold values. Optionally **SUR-94** with two relays outputs can be equipped with active current output. The device can be used for controlling and regulation of processes need proportional and threshold control like: temperature processes (heating or cooling), valves controlling or other.

- programmable hystereses, delays of control outputs and indication filtration,
- automatic compensation of TC cold ends temperature,
- alarm diode and acoustic signal in case of exceeding of measurement range or sensor damage,
- peaks detection function.

## Exemplary pin assignment



## Ordering

**SUR-94-1JXX-1-X-XX1** — **options:**

- 00** : no options
- 01** : IP 65 frame

**power supply:**

- 3** : 24V AC/DC
- 4** : 85V - 260V AC/DC

**type of outputs:**

- 0** : no output
- 1** : REL (for 2 and 4 outputs)
- 2** : OC (for 2 and 4 outputs)
- 3** : 2 x REL + current output
- 4** : 2 x OC + current output

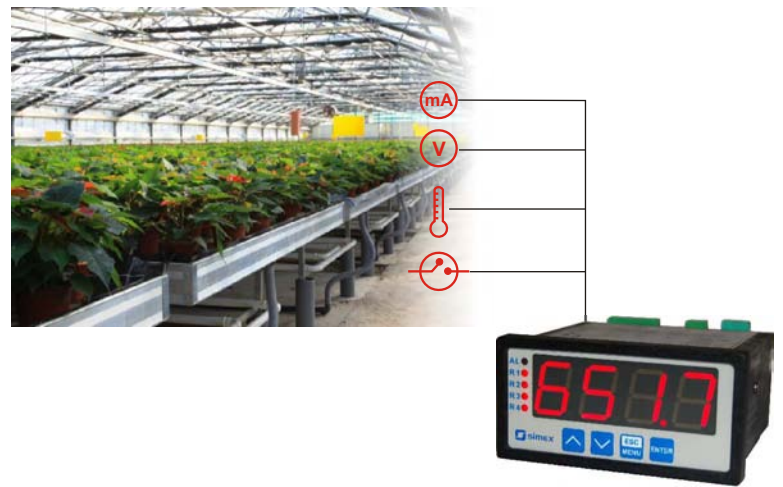
**number of outputs:**

- 0**
- 2**
- 3**
- 4**



## Typical applications

Measurement and control of physical parameters in greenhouse etc.



## Technical data

- Power supply:** 19V + 50V DC; 16V + 35VAC or 85 + 260V AC/DC, all separated
- Power consumption:** for 85 + 260V AC/DC and 16V + 35V AC power supply: max. 6,5 VA; 19V + 50V DC power supply: max. 6,5 W
- Display:** LED, 4 x 20 mm high, red (green - on request), brightness adjustable in 8 steps
- Input:** universal
  - **current** 0-20 mA or 4-20 mA, input resistance < 65 Ω (typ. 30 Ω), overload-protected, input current limited to 50 mA;
  - **voltage** 0-5 V, 1-5V, 0-10V or 2-10V, input resistance > 100 kΩ
  - **millivoltage** 0-60 mV, 0-75 mV, 0-100 mV, 0-150 mV, input resistance > 1,5 MΩ
  - **thermoresistance:** Pt100, Pt500, Pt1000 (automatic recognition of 2, 3 and 4-conductor connection, resistance compensation of connecting conductors from 0 to 20 Ω at any conductor); measuring range: -100°C + 600°C
  - **thermocouple:** K, S, J, T, N, R, B, E type; measuring range: **K:** -200°C + +1370°C; **S:** -50°C + +1768°C; **J:** -210°C + +1200°C; **T:** -200°C + +400°C; **N:** -200°C + +1300°C; **R:** -50°C + +1768°C; **B:** +250°C + +1820°C; **E:** -200°C + +1000°C
- Accepted prolonged input overload:** 20%
- Accuracy:** 0.1% @ 25°C (inputs: current, voltage, millivoltage, thermoresistance, thermocouple K, J, E); 0.2% @ 25°C (thermocouple N), 0.5% @ 25°C (thermocouple S, T, R, B)
- Stability:** 50 ppm/°C
- Outputs:** 0, 2 or 4; relays 1A/250V AC (cosφ=1) or the OC 30mA/30VDC/100mW
- Transducer power supply output:** 24V DC +5%, -10% / max. 100 mA, stabilized, not insulated from measuring inputs
- Active current output:** operating range max. 0 - 24 mA, load resistance max. 700 Ω (option available with 2 relays, see ordering)
- Communication interface:** RS-485, 8N1 and 8N2, 1200 bit/s + 115200 bit/s, Modbus RTU, not galvanically insulated from measuring inputs
- Operating temperature:** 0°C + +50°C
- Storage temperature:** -10°C + +70°C
- Protection class:** IP 65 (front), available additional frame IP 65 for panel cut-out sealing; IP 20 (case and connection clips)
- Case:** board
- Case material:** NORYL - GFN2S E1
- Case dimensions:** 96 x 48 x 100 mm
- Panel cut-out dimensions:** 90,5 x 43 mm
- Installation depth:** min. 102 mm
- Board thickness:** max. 5 mm