

# KE8 PROGRAMMABLE PANEL DOT RECORDER

## FEATURES:

- IP65
- Password protection
- Report: 0123 45
- In1, In2
- Ind
- MEM

## INPUT:

- 0..20 mA
- 10..10 V

## OUTPUTS:

- RS 232
- RS 485

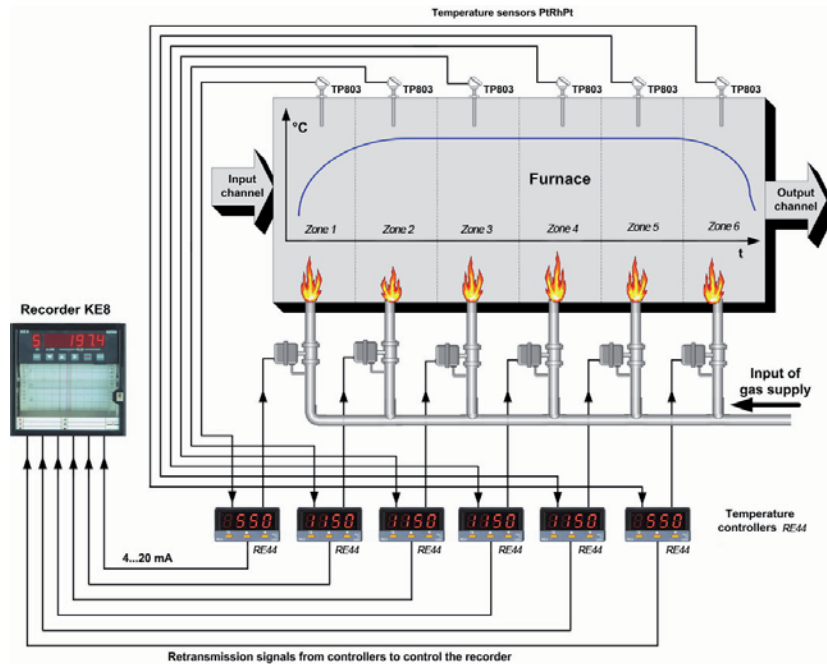
## GALVANIC ISOLATION:

- Supply
- RS 485



- 6 universal measuring channels.
- Programmable measuring and recording parameters.
- Signaling of alarm state overflows – 12 relays.
- Co-operation with the master system through RS-485 or RS-232.
- Mathematical functions on measuring channels.
- Controlled recording tape feed with the possibility to change through the logic input.
- Possibility of recording release by the logic input or RTC clock.
- Buffer of measuring data during the recording switching off.

## EXAMPLE OF APPLICATION



### INPUTS

| Input type                 | Range  | Error |
|----------------------------|--|-------|
| Voltage                    | -9999 .. 0 .. 9999 mV                            | 0.5%  |
| Current                    | -20 .. 0 .. 20 mA                                | 0.5%  |
| Thermocouples              | R, S, B, K, J, T                                 | 0.5%  |
| RTDs                       | Pt100, Ni100                                     | 0.5%  |
| Potentiometric transmitter | 0 .. 2000  | 0.5%  |
| Resistance transmitter     | 0 .. 2000  | 0.5%  |
| Logic input                | shortening-opening, input or signal of TTL level |       |

### OUTPUTS

| Output type | Properties   |
|-------------|--|
| Relay       | 12 relays<br>contact load carrying capacity:<br>for resistance load AC max: 125 V a.c., 0.5 A<br>DC max: 30 V a.c., 0.5 A<br>for inductive load:<br>AC/DC max: 30 V, 0.5 A |

### DIGITAL INTERFACE

| Interface type | Properties  |
|----------------|---|
| RS-232         | MODBUS or LUMBUS transmission protocol; RTU or ASCII mode |
| RS-485         | MODBUS or LUMBUS transmission protocol; RTU or ASCII mode |

### EXTERNAL FEATURES

|                    |                         |   |
|--------------------|-------------------------|---|
| Readout field      | digital                 | red or green colour                             |
| Recording tape     | recording paper tape    | roll (32 m) or Z-fold (16 m), acc. to DIN 16230 |
| Overall dimensions | 144 × 144 × 260 mm      | panel cut-out dimensions: 138+1 × 138+1 mm      |
| Weight             | 4.3 kg                  |   |
| Protection grade   | from frontal side: IP65 | from terminal side: IP00                        |

## RATED OPERATING CONDITIONS

|                    |                              |                           |
|--------------------|------------------------------|---------------------------|
| Supply voltage     | 90 .. 230 .. 253 V a.c./d.c. | input power: 15 VA, 18 W  |
| Temperature        | ambient: 0...23...50°C       | storage: -20...60°C       |
| Relative humidity  | 25 .. 85%                    | inadmissible condensation |
| Operating position | vertical                     |                           |

## SAFETY AND COMPATIBILITY REQUIREMENTS

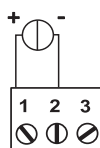
|                               |                 |                      |
|-------------------------------|-----------------|----------------------|
| Electromagnetic compatibility | noise immunity  | acc. to EN 61000-6-2 |
|                               | noise emissions | acc. to EN 61000-6-4 |
| Isolation between circuits    | basic           |                      |
| Pollution level               | 2               |                      |
| Installation category         | II              | acc. to EN 61010-1   |
| Altitude above sea level      | < 2000 m        |                      |

## CONNECTION DIAGRAMS

### TERMINALS OF MEASURING SIGNALS

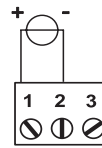
|             |                    |   |   |    |    |    |
|-------------|--------------------|---|---|----|----|----|
| Terminal no | Measuring channels |   |   |    |    |    |
|             | 1                  | 2 | 3 | 4  | 5  | 6  |
|             | 1                  | 4 | 7 | 10 | 13 | 16 |
|             | 2                  | 5 | 8 | 11 | 14 | 17 |
|             | 3                  | 6 | 9 | 12 | 15 | 18 |

### Connection of voltage source



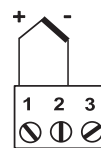
Resistance of signal source < 1 kΩ

### Connection of current source

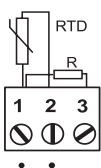


Jumper from recorder accessories

### Connection of thermocouples TC

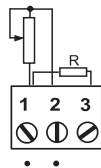


### Connection of 2-wire RTD

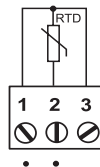


The balancing R resistance should have a resistance equal to the total resistance of both wires connecting RTD with terminals

### Connection of 2-wire resistance transmitter

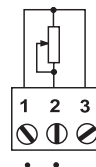


### Connection of 3-wire RTD

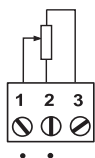


Wires connecting RTD with terminals 2 and 3 should have an equal resistance

### Connection of 3-wire resistance transmitter



### 3-wire potentiometer transmitter



### ALARM TERMINAL

|             |    |    |    |    |    |    |    |    |    |    |    |    |                 |
|-------------|----|----|----|----|----|----|----|----|----|----|----|----|-----------------|
| Relay no    | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | Common terminal |
| Terminal no | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | no 31           |

## ORDERING

|  |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PANEL DOT RECORDER KE8 -                     | X | X | X | X | X | X | X | X | X | X | X | X | X |
| <b>Version:</b>                              |   |   |   |   |   |   |   |   |   |   |   |   |   |
| without alarms                               | 0 |   |   |   |   |   |   |   |   |   |   |   |   |
| with alarms                                  | 1 |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Interface:</b>                            |   |   |   |   |   |   |   |   |   |   |   |   |   |
| RS-232C                                      | 1 |   |   |   |   |   |   |   |   |   |   |   |   |
| RS-485                                       | 2 |   |   |   |   |   |   |   |   |   |   |   |   |
| RS-232C + software servicing the computer    | 3 |   |   |   |   |   |   |   |   |   |   |   |   |
| RS-485 + software servicing the computer     | 4 |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Communication protocol:</b>               |   |   |   |   |   |   |   |   |   |   |   |   |   |
| LUMBUS                                       | 1 |   |   |   |   |   |   |   |   |   |   |   |   |
| MODBUS                                       | 2 |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Cold junction compensation (ACJC):</b>    |   |   |   |   |   |   |   |   |   |   |   |   |   |
| without cold junction compensation           | 0 |   |   |   |   |   |   |   |   |   |   |   |   |
| with cold junction compensation              | 1 |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Readout field colour:</b>                 |   |   |   |   |   |   |   |   |   |   |   |   |   |
| red  |   |   |   |   |   |   |   |   |   |   |   | 1 |   |
| green  |   |   |   |   |   |   |   |   |   |   |   | 2 |   |
| <b>Parameter settings:</b>                   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| standard                                     |   |   |   |   |   |   |   |   |   |   |   | 1 |   |
| custom-made*                                 |   |   |   |   |   |   |   |   |   |   |   | X |   |
| <b>Supply:</b>                               |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 90 .. 230 .. 253 V a.c.                      |   |   |   |   |   |   |   |   |   |   |   | 1 |   |
| <b>Acceptance tests:</b>                     |   |   |   |   |   |   |   |   |   |   |   |   |   |
| without additional quality requirements      |   |   |   |   |   |   |   |   |   |   |   |   | 8 |
| with an extra inspection quality certificate |   |   |   |   |   |   |   |   |   |   |   |   | 7 |
| acc. to customer's request**                 |   |   |   |   |   |   |   |   |   |   |   |   | X |

### Order example:

The code: **KE8 - 1 - 1 - 2 - 0 - 1 - 2 - 1 - 1 - 8** means:

- KE8** - panel dot recorder of KE8 type,
- 1** - version with alarms,
- 1** - RS-232C interface,
- 2** - MODBUS communication protocol,
- 0** - without cold junction compensation,
- 1** - readout field colour: red,
- 1** - standard parameter settings,
- 1** - supply voltage: 90 .. 230 .. 253 V a.c.
- 8** - without extra quality requirements.

\* the code number will be established by the manufacturer  
 \*\* only after agreeing with the manufacturer

SEE ALSO:



Temperature sensors.



Interface converter (USB/RS-485) - PD10.



KD7 recorder.

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