

## Operating manual

### Bargraph Indicator

### LS 312S

The Bargraph indicators of the LS 300 series are durable, quasi analog indicators, with one or two LED bargraphs. In addition, there can be type dependent limit value relays. Zero point and final value of the bargraphs are separate, and therefore independently adjustable. There are buttons for the segment tests of the bargraphs and control of the brilliance.

#### Operation:

The measuring range is specified when the order is placed, and can only be changed by technical personnel (internal existing measuring range reference maps). The devices are calibrated by factory setting, fine adjustments are possible through potentiometers accessible at the front. The brilliance can be adjusted to the environment, in steps, through a button at any time. A second button is available to test the 81 light emitting diode segments. The measuring input is available on the backside of a direct printed circuit board connector, and can be connected through a provided contact strip. Auxiliary energy is connected through direct flat plug connectors.

#### Other devices from series **LS 300**

|               |  |
|---------------|--|
| <b>LS 310</b> | Single-line (channel) indicator, without limit value evaluation and - output   |
| <b>LS 320</b> | Two-lines (channels) indicator, without limit value evaluation and - output  |
| <b>LS 312</b> | Two-lines (channels) indicator, with two limit values and two relays, display of the limit values on the second line |

#### Technical Data

|                                 |   |   |
|---------------------------------|---|---|
| <b>Measure variables</b>        | <b>s. Measuring range catalog or Name plate Specification</b> |   |
|                                 | Voltage DC, AC, TRMS  | from 60 mV ... 200 V                        |
|                                 | Current DC, AC, TRM   | from 100 µA ... 200 mA                      |
|                                 | Resistance, Pt 100  | from 10 Ω ... 10 kΩ                         |
|                                 | Thermoelement   | Standard types                              |
| <b>Accuracy of measurement</b>  | < 0,5 %   |   |
| <b>Resolution</b>               | 1,25 %  |   |
| <b>Overflow indication</b>      | flashing line   |   |
| <b>Bargraph color</b>           | red   |   |
| <b>Response time</b>            | < 200 ms (0 ... 95 %)   |   |
| <b>Auxiliary power</b>          | see Device label  | max. 5 W                                    |
|                                 | electronically separated from measuring input                 |   |
| <b>Environmental conditions</b> | Climatic suitability  | Climatic class 2 acc. to VDE DIN 3540       |
|                                 | Operation temperature   | 0 ... 50 °C                                 |
|                                 | Storage temperature   | -40 °C ... +80 °C                           |
|                                 | Safety class  | I acc. to IEC 348 / VDE 0411                |
|                                 | Safety  | IP 20 acc. to IEC EN 60 529                 |
|                                 | Device safety   | corresponding to IEC EN 61 010              |
|                                 | EMC-Immunity  | corresponding to DIN EN 61 000-4-1 to 4     |
|                                 | EMC-Interference radiation                                    | corresponding to DIN EN 50 081 Class B      |
| <b>Measurement and Weight</b>   | Front dimension   | 144 mm x 36 mm acc. to DIN 43 718           |
|                                 | Instrument panel cutout                                       | 138 +0,8 mm x 32,7 +0,3 mm                  |
|                                 | Installation depth  | 186 mm                                      |
|                                 | Weight  | approx. 900 g                               |
| <b>Other</b>                    | Connection  | direct circuit board connector<br>flat plug |

**Pin assignment**

**Name plate**

# LS 312S

Serial - No. \_\_\_\_\_

Range : \_\_\_\_\_ **K1**

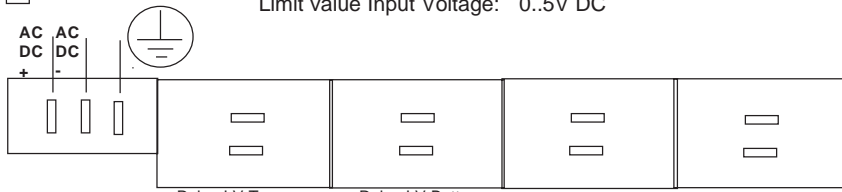
**Option**

Limit value Inputs:

- 20 - Limit value Input -
- 21 - Lower Limit value Input + (LLV)
- 22 - Upper Limit value Input + (ULV)

Limit value Input Voltage: 0..5V DC

**115/230 V AC**



**K1**

|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |       |    |       |  |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|-------|----|-------|--|
|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    | + LLV |    | + ULV |  |
| + | - |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |       |    |       |  |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20    | 21 | 22    |  |
| A | B | C | D | E | F | H | J | K | L  | M  | N  | P  | R  | S  | T  | U  | V  | W  | X     | Y  | Z     |  |

**Dimensional drawing**

