

# Limit value relay GS 1000

**Voltage - current - resistance - Pt100 - thermocouple**

## Features

- 1 or 2 adjustable limit value relays (SPDT contact)
- High or low alarm switchable
- Transmitter supply for 2-wire-sensors (optional)
- Clearly arranged scales for exact alarm point setting
- True value output 0...10V DC optional 0 ... 20 or 4...20 mA
- Power and output status indicator by LED
- Standard case for DIN rail mounting



## General information

GS1000 limit value relays can be used for monitoring in process and automation systems. The multipurpose input allows controlling of all physical dimensions which can be converted to standard signal 0/4 ... 20 mA, 0/2 ... 10 V DC. Devices for temperature monitoring with direct RTD or thermocouple input are available. An optional transmitter supply for 2-wire-transmitters (4...20 mA) will offers additional fields of application.

## Short information

Multi-purpose device can be configured for standard signals and potentiometer input by DIP-switch on the front panel.

RTD (PT100) temperature measurement for 2- or 3-wire sensors.  
The true value output is linear to the temperature.

Thermocouple temperature measurement with Fe-CuNi, NiCr-Ni or PtRh-Pt sensors.  
Built-in cold junction compensation.  
The true value output is linear to the input voltage.

## Technical data

### Power supply

Supply voltage	: U <sub>c</sub> +/- 10 % (look at table page 4)
Frequency	: 47...63 Hz
Power consumption	: max. 4 VA
Working temperature	: -10...+60 °C (14 ... 140 °F)
Isolation voltage	: 250V~ according to German VDE 0110 group 3 between input/output and supply
Test voltage	: 4kV= between input/output and supply
CE-conformity	: EN55022, EN60555-2, IEC61000-4-4/5/11/13,

### Input

Voltage	: R <sub>i</sub> 4 kΩ/V, overload capacity max. 4 times the rated voltage
Current	: R <sub>i</sub> 125 Ω, overload capacity max. 100 mA
Resistance	: reference voltage U <sub>A</sub> =2.5 V DC (multi purpose device A only) load max. 5 mA (for potentiometers 1 kΩ...100 kΩ)
2-wire transmitter	: transmitter supply voltage U <sub>A</sub> ≈ 15 V DC (multi purpose device B only)
Pt100 sensor current	: 1 mA (no self-heating)
Thermocouple	: R <sub>i</sub> >1 MΩ
Accuracy	
Switch hysteresis	: appr. 1 %
Scale accuracy	: 2 %
Reproduction accuracy	: 0.2 %
Temperature coefficient	
- Standard signals	: 0,005 %/K
- Pt100	: 0,035 %/K
- Thermoelement	: 0,035 %/K

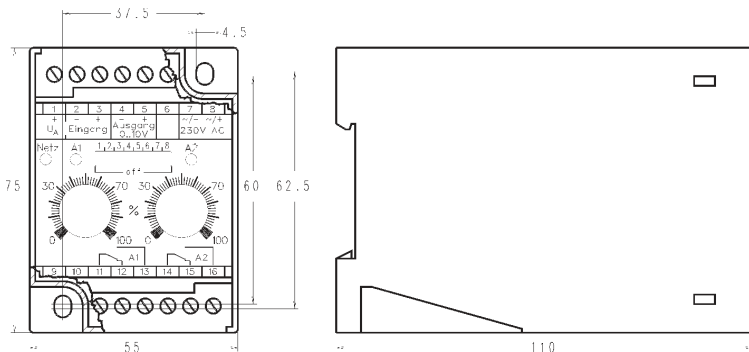
### Output

Limit value relay SPDT	: 250 V AC < 250 VA < 2 A, 100 V DC < 50 W < 1 A
Voltage output	: 0...10 V DC, load max. 10 mA
Current output (optional)	: 0...20 mA or 4...20 mA, load max. 500 Ω

### Case

Case	: standard case, polycarbonate 8020 UL94V-1,
Weight	: approx. 400 g
Connection	: screw terminals with pressure plate, max. 4 mm <sup>2</sup> wire
Protection	: case IP40, clamps IP20 acc. to German BGV A3

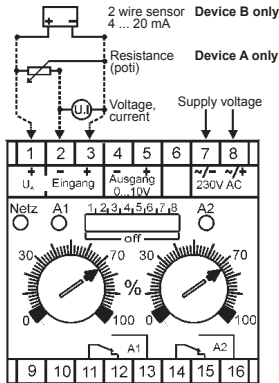
### Dimension



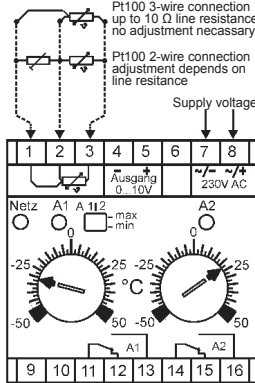
Mounting with 2 screws M4 (DIN 46121/DIN 43660)  
 or DIN rail TS 35 acc to DIN 46277/DIN EN 50022

## Connection diagrams

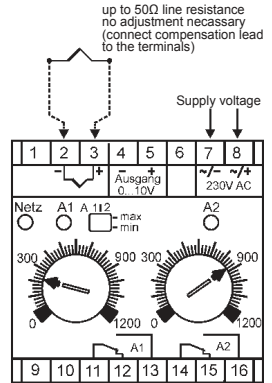
**Multipurpose device for standard signals (scale 0 ... 100 %)**



**Pt100 (scale °C)**



**Thermo couple (scale °C)**



### Input

#### Standardsignals

Measuring range via DIP-switches S3 ... S8 programmable

Measuring range	S3	S4	S5	S6	S7	S8
0 ... 10 V	on	off	off	off	off	off
0 ... 5 V	off	on	off	off	off	off
0 ... 2.5 V	off	off	on	off	off	off
4 ... 20 mA	off	off	off	off	off	on
0 ... 20 mA	off	off	off	off	off	on
Resistance	off	off	off	off	off	off

#### Temperature Standard ranges [°C]

Pt100	Fe-CuNi	NiCr-Ni	PtRh-Pt
-50 ... 50	0 ... 300	0 ... 600	0 ... 1200
0 ... 50	0 ... 450	0 ... 900	0 ... 1600
0 ... 100	0 ... 600	0 ... 1200	
0 ... 200			
0 ... 300			
0 ... 400			
0 ... 600			

### Output

Switching performance programmable with DIP-switch S1 and S2

	S1	S2
A1 max A2 max	on	on
A1 min A2 max	off	on
A1 max A2 min	on	off
A1 min A2 min	off	off

## Ordering code

GS1000 -  1. -  2. -  3. -  4.

### 1. Limit value relays SPDT

- 1 1 Limit contact max. 250 V AC/2 A
- 2 2 Limit contacts max. 250 V AC/2 A

### 2. True value output

- 1 0 ... 10 V (max. 10 mA) Standard
- 2 0 ... 20 mA load max 500Ω
- 3 4 ... 20 mA load max 500Ω

### 3. Supply voltage

- 0 230 V ±10 % 50-60Hz
- 1 115 V ±10 % 50-60Hz
- 4 24 V ±10 % 50-60Hz
- 5 20 ... 28 V DC isolated

### 4. Measuring input/scale

- 10 Multipurpose device A  
 Measuring range programmable via DIP switch  
 0 ... 20 mA/4 ... 20 mA/0 ... 2,5 V/0 ... 5 V/0 ... 10 V  
 and resistance (poti)
- 20 Multipurpose device B\*  
 Transmitter supply 16V DC for  
 2 wire sensors 4 ... 20 mA  
 Measuring range programmable via DIP switch  
 0 ... 20 mA/4 ... 20 mA/0 ... 2,5 V/0 ... 5 V/0 ... 10 V

\*Device type B not available with supply and  
 2 limit contacts

### RTD Pt100

- 51 -50 ... 50 °C
- 52 0 ... 50 °C
- 53 0 ... 100 °C
- 53S 0 ... 150 °C
- 54 0 ... 200 °C
- 55 0 ... 300 °C
- 56 0 ... 400 °C
- 57 0 ... 600 °C

### Thermo couple Fe-CuNi (J)

- 61 0 ... 300 °C
- 62 0 ... 450 °C
- 63 0 ... 600 °C

### Thermo couple NiCr-Ni (K)

- 71 0 ... 600 °C
- 72 0 ... 900 °C
- 73 0 ... 1200 °C

### Thermo couple PtRh-Pt (S)

- 81 0 ... 1200 °C
- 82 0 ... 1600 °C

Custom ranges and scales  
 on request