SR535

ALARM UNIT

with Pt100 Input and 4-20 mA Output

MAIN FEATURES

SR535 is built for monitoring Pt100 signals in the process industry. The unit gives alarm functions for either increasing or decreasing temperatures and for certain error states. SR535 provides an output signal, 4-20 mA, which is equivalent to the measurement range.

Temperatur monitoring relay output

SR535 is equipped with one output relay, Re 1, with switch over contact for temperature monitoring.

Error monitoring relay output

A relay connected for normally active function, Re 2, gives a contact breaking function for sensor breakdowns, supply voltage failure, and measurements exceding 125% of the normal range. Re 2 should only be used to indicate that measurements (and monitoring) may not be correct.

Output signal 4-20 mA

An accurate 4-20 mA output signal is available. The signal is temperature linear and equivalent to the calibrated temperature range.

High configuration flexibility

Adaptability

Configuration changes are made conveniently with jumpers. The following adjustments are available: temperature measuring range (see specifications), High/Low-alarm, the relays normally active or passive functions, alarm delay 0.4 or 2 s, hysteresis 0.5 or 5 %.

Set point adjustment

A voltage outlet and a potentiometer on the front panel are used to adjust the set-point. The set-point can be measured as a voltage from the test outlet. The scale is 0-5 V for 0-100 % of input signal.

The relays "normally active or passive" functions

are chosen to suit the use of the monitor. Normally active, with the relay coil activated and the monitor inactive (no alarm), is suitable when the monitor is used to give an alarm signal at error states . This means that in case of a power supply failure the monitor will give an alarm signal (=monitoring out of order). Normally passive is mostly used to provide a trip function to switch off equipment, thus saving costly and unnecessary operational stops.

The choice of High or Low alarm functions

depends on whether increasing or decreasing signal is to be monitored. Alarms are always indicated by a lighted red LED, independent of configuration.

Open or closed relay contacts

The choice of open or closed relay contacts is made when connecting the output signal lines.

Accurate and interference free monitoring

Comparison of monitored input signals to the adjusted set-point is carried out in two stages using a special principle, which gives a very efficient filtering of transient interference and noise. Reliability in the monitoring system is increased with a dynamic hysteresis, which connects the preset hysteresis when an alarm is monitored. The relays in the SR535 will not give a false alarm when power is switched on. A 15-turn potentiometer insures high definition and stability in adjusted set-point. The hysteresis level can be changed with jumpers on the circuit board.

Plug-in, screw terminals

All connections are made with plug-in screw terminals. Installation is simplified by connection diagrams on the front panel.

Compact mounting on DIN-rail

SR535 snaps on to a 35 mm DIN-rail and can be mounted with high density.

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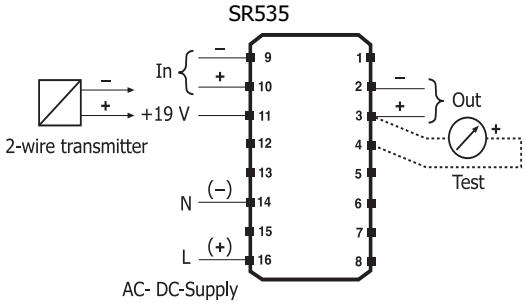
SPECIFICATIONS SR535

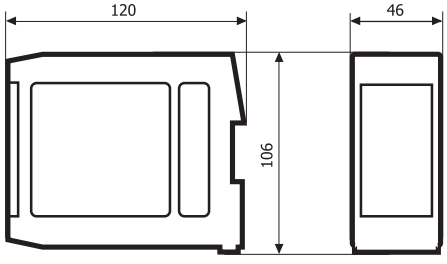
INPUT		
Pt100, (acc. to IEC751), 3-wire connection		Range: 0-100, 0-150, 0-200, 0-300, 0-500 °C (standard: 0-150 °C)
Sensor current		3 mA
OUTPUT		
Relay 1	Temperature monitoring	1-pole switch over contact
Relay 2	Error monitoring	1-pole opening contact
Contact material		Hard silver (AgNi 0.15) (option: gold plated)
Contact rating		2 A @ 250 VAC / 0.1 A @ 110 VDC
Analog output		4-20 mA linear to selected temperature range
FUNCTIONS, RELAY 1		
Selectable High or Low alarm		Jumpers on PCB (standard: High)
Adjustable alarm set-point		Front 15-turn potentiometer / test connector
Selectable alarm delay		0.4 s (standard) or 2 s, changeable on PCB
Selectable hysteresis		0.5 % (standard) or 5 %, changeable on PCB
Selectable opening or closing contact		Depends on terminal connection
Selectable normally active or passive function		Jumpers on PCB, standard: normally active
FUNCTIONS, RELAY 2		
Fixed, normally active and opening contact		Alarm at power supply failure, sensor break or high input (125 %)
ENVIRONMENT CONDITIONS		
Ambient temperature	Operation	-20 to +60 °C
	Storage	-25 to +70 °C
Humidity		0 to 95 %RH
EMC	EN 50081-2, EN 50082-2 (Industrial)	Criterion A (within specifications)
LVD	IEC 1010-1	Installation category III, maximum 250 V
GENERAL DATA		
Galvanic isolation	Input to relay outputs	3 700 VAC, 1 min
	Input to AC power supply	3 700 VAC, 1 min
	Input to DC power supply	1 500 VAC, 1 min
	Relay outputs to power supply	3 700 VAC, 1 min
	Input to mA output	Not isolated
Power supply	AC version	230 V, 45..75 Hz,
	DC version	19 to 60 VDC
	Permissible variation	-15..+10 %
Power consumption		3 VA
ACCURACY		
Calibration (end of range)		± 0.01 °C
Linearity, mA output		± 0.1 % [1]
Set-point adjustment		± 0.05 % [1]
Repeatability		± 0.01 % [1]
Temperature influence		± 0.1 % [1] / 10 °C
Supply voltage influence		± 0.05 % [1] within variation range
Sensor wire influence		± 0.01 % [1] / ohm
Long-term stability		± 0.15 % [1] / year
HOUSING		
Weight		Appr. 500 g
Protection		IP 20
Connection	Plug-in terminals	Stranded, ≤ 2.5 mm2, AWG 14
Mounting		Rail acc. to DIN EN 50022, 35 mm

[1] Of input span

CONNECTIONS



DIMENSIONS



Measurements in mm

ORDERING INFORMATION

SR535 230 VAC	**51MOE00012**
SR535 19-60 VDC	**51MOE00013**
Configuration	**70CAL00001**

DISTRIBUTION