

Control Unit SG-RSV 239

Operating Instructions



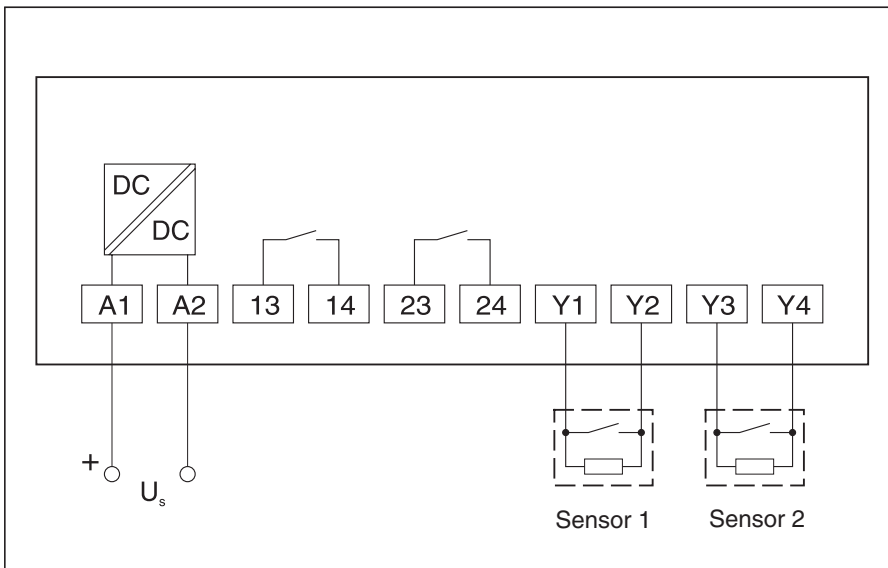
Control Unit

according to EN 50155 and
EN 50121-3-2
classes TX, S2 in accordance with
EN 50155

for sensors with
1.2 kΩ monitoring resistor

These operating instructions apply to the
following control units:

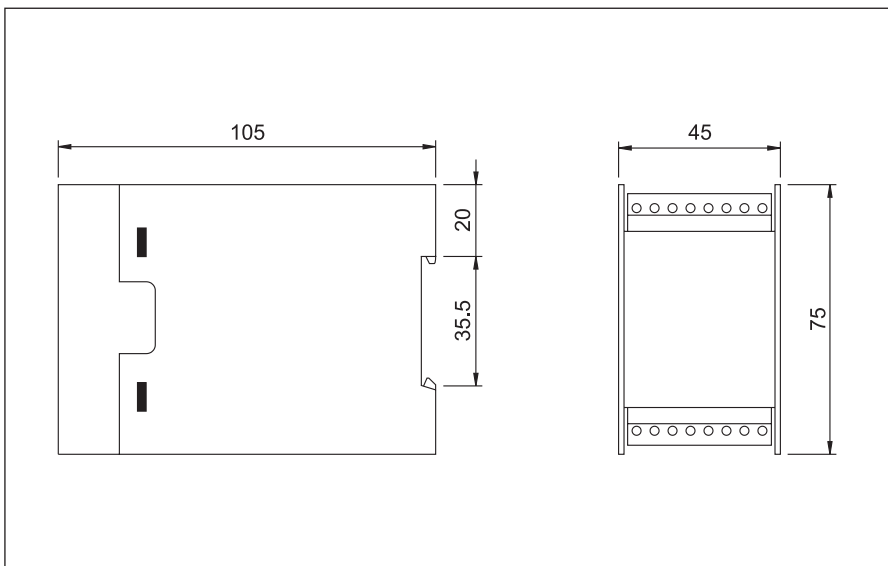
SG-RSV 239/24	24 V=
SG-RSV 239	50-150 V=



Control

The Control Unit has two monitoring circuits, which operate the output relays. The electronics monitor the electrical resistance of the connected sensors which have a defined zero signal current.

When the sensors are not activated (normal operating conditions), the output relays are energised. If the line is disconnected between the sensor and the control unit, the relay "fault" is de-energised.



Enclosure

W × H × D (mm)	45 × 75 × 108
Protection class	IP20
2 plug-in connectors	each 8-channel
Cable clamps	max. 2.5 mm ²
Weight	approx 175 g

Parts supplied

- **Control Unit**
Enclosure with electronics module and plug connections with lift-up lock release.
- **Operating Instructions**

Control Unit SG-RSV 239

IMPORTANT NOTES!

To ensure correct and safe operation of the unit, it must be properly transported and stored, properly installed and commissioned, and operated in accordance with its intended use. Only persons familiar with the installation, commissioning and operation, and with the corresponding qualifications to prove their skills, may work on the units. They must observe the contents of these instructions, the information given on the type plate of the unit and

Please read!

the relevant safety regulations for the installation and operation of electrical systems. This unit is designed in accordance with EN 50155 and EN 50121-3-2 and left the factory in a perfectly safe condition. To maintain this condition, you must observe the safety regulations marked **WARNING!** in these operating instructions. Failure to observe the safety regulations can lead to death, injury to personnel, or damage to the unit and other systems and equipment.

Should the information given in these operating instructions be inadequate in any way, please contact your local technical centre, subsidiary or representative. When using the device outside the European Union, you must observe the relevant regulations valid for the country of use.

Technical Data

Connecting Voltage U_s

SG-RSV 239/24	DC 24 V	(S2)
Voltage tolerance	-30% to +30%	
SG-RSV 239	DC 50 to 150 V	(S2)
Nominal frequency	-	
Frequency tolerance	-	
Power consumption	< 2 W	

Sensor Voltage

max. 12 V DC

Signal Voltage State

max. U_s

Relay Data

Switching current	max. 1 A	max. 1 A
Switching voltage	max. AC 250 V	max. DC 150 V
Breaking capacity	max. 250 W (AC 12)	max. 30 W (DC 12)
Switching operations		
mechanical	> 2×10^7	
electrical	> 1×10^5 (250 AC V / 1 A)	

Operating Conditions

Perm. ambient temperature range	-40 °C to +70 °C (T3)
Rel. humidity	max. 95%
Endurance limit	5 g in all 3 levels

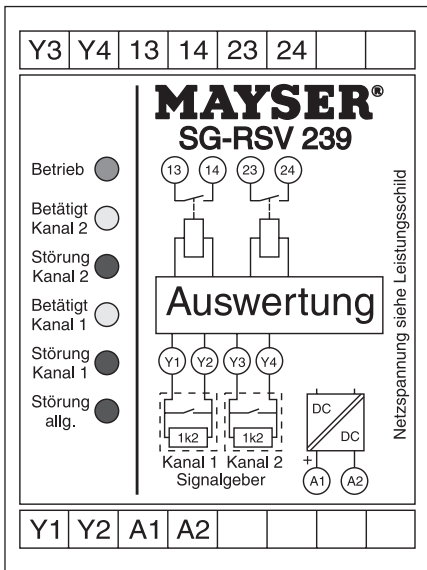
Important notes:

- **Supply voltage**
must be in accordance with the connecting voltage U_s indicated on the type plate.
- **Permissible temperature range**
maintain sufficient distance from heat sources if installing in switch cabinet (min. 2 cm).
- **Fusing of the relay contacts**
due to risk of welding, externally with 1.0 A inert.

Please note:

When switching inductive loads the user must be fitted out with spark absorbers (RC-modules).

Installation and Operation



Installation

The enclosure of the control unit can be mounted in any position:
 - on a 35 mm standard rail EN 50022
 Wiring is connected to the cable clamps of the plug connections:

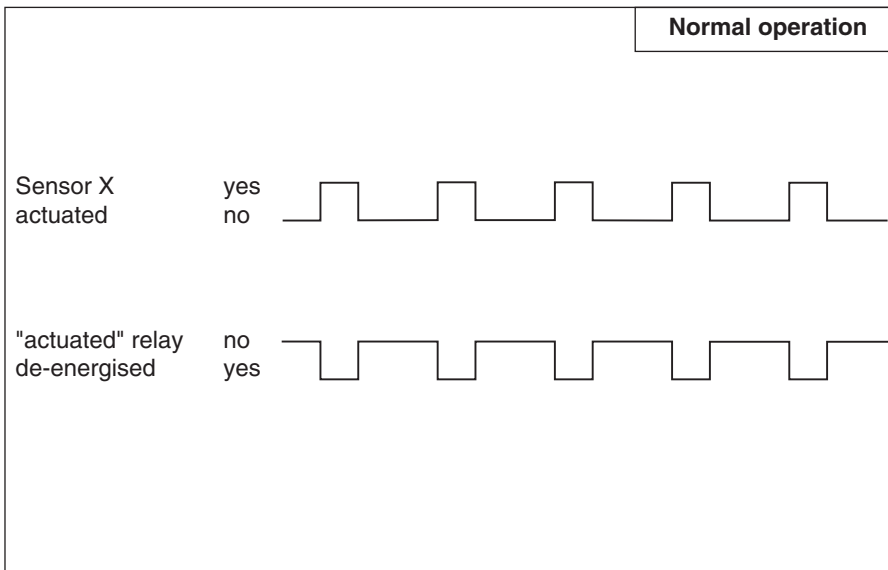
Sensor 1	Y1	Y2
Sensor 2	Y3	Y4
Supply voltage	A1	A2
Relay "fault"	13	14
Relay "activated"	23	24

WARNING!

Do not release terminals or connect plug connections with power on.

LEDs information

- LED (green) "Betrieb" (on)
Operating voltage active
- LED (yellow) "Betätigt Kanal X" (activated channel X)
Sensor actuated, relay "Betätigt" (activated) de-energised
- LED (red) "Störung Kanal X" (fault channel X)
Line sensor interrupted, relay "Störung" (fault) de-energised
- LED (red) "Störung allg." (general fault)
Relay " fault " de-energised



Commissioning

After connecting up sensors, switching contacts and power, carry out a function test in the following order:

Sensor not actuated

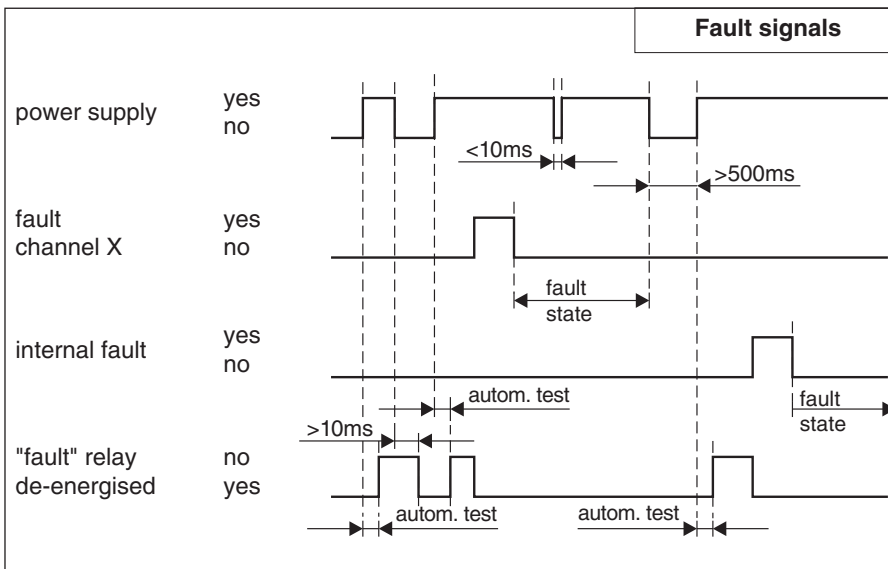
- relay " activated " is energised
- relay " fault " is energised

Sensor actuated

- LED "Betätigt Kanal X" (activated channel X) lights up
- relay " activated " is de-energised

Sensor disconnected

- LED "Störung Kanal X" (fault channel X) lights up
- relay " fault " is de-energised



Maintenance and troubleshooting

Maintenance

The Control Unit is maintenance-free. If no shorter testing intervals are specified, check the safety system monthly in the following order:

1. Unit still switched off

Relay "fault" (13, 14) and Relay "activated" (23, 24) must be de-energised.

2. Switch unit on

Relay "fault" (13, 14) and relay "activated" (23, 24) must energise.

3. Activate sensor

Relay "activated" (23, 24) must de-energise.

Troubleshooting and remedies

Prerequisite: SG-RSV 239 connected to power supply and sensor.

Sensor not activated and Control Unit does not respond:

- LED "Betrieb" (on) not lit
- > Supply voltage off or incorrect.
 - ☞ Check supply voltage, compare with type plate.
 - ☞ Observe correct polarity.
 - ☞ Fault still exists: Control Unit faulty.
 - ☞ Replace Control Unit.

Sensor not activated and relay "fault" not energised:

- LED "Störung Kanal X" (fault channel X) lit
- > Sensor or supply lines faulty (connection interrupted).
 - ☞ Check sensor with gauge: set value = $1.2\text{ k}\Omega \pm 2\%$.
 - ☞ Actual value \neq set value: sensor or supply line faulty.
 - ☞ Replace sensor.
- LED "Störung Kanal X" (fault channel X) not lit
- > Control Unit faulty.
 - ☞ Connect resistor $1.2\text{ k}\Omega$ instead of the sensor.
 - ☞ Fault still exists: Control Unit faulty.
 - ☞ Replace Control Unit.

Sensor interrupted and relay "fault" not de-energised:

- > Control Unit faulty.
 - ☞ Disconnect sensor.
 - ☞ Relay "fault" not deenergised: Control Unit faulty.
 - ☞ Replace Control Unit.

Sensor not activated and relay "activated" not energised:

- LED "Betätigt Kanal X" (activated channel X) lit
- > Sensor or supply line faulty (short-circuit).
 - ☞ Check sensor with gauge: set value = $1.2\text{ k}\Omega \pm 2\%$.
 - ☞ Actual value \neq set value: sensor or supply line faulty.
 - ☞ Replace sensor.
- LED "Betätigt Kanal X" (activated channel X) not lit
- > Control Unit is faulty
 - ☞ Connect resistor $1.2\text{ k}\Omega$ instead of the sensor.
 - ☞ Fault still exists: Control Unit faulty.
 - ☞ Replace Control Unit.

Sensor actuated and relay "activated" not de-energised:

- LED "Betätigt Kanal X" (activated channel X) not lit
- > Sensor or supply line faulty (resistance change too low).
 - ☞ Check sensor with gauge: set value "activated" $< 300\ \Omega$.
 - ☞ Actual value $> 300\ \Omega$: sensor or supply line faulty.
 - ☞ Replace sensor.
- > Control Unit faulty.
- ☞ Check sensor with gauge: set value "activated" $< 300\ \Omega$.
 - ☞ Actual value $< 300\ \Omega$: Control Unit faulty.
 - ☞ Replace Control Unit.

LED "Störung allg." (general fault) lit:

- > Control Unit faulty.
 - ☞ Replace Control Unit.

Fault can still not be detected? - Mayser Support will help: Tel. +49 731 2061-0

Subject to technical modifications.