

Safety Control Unit SG-ÜST 1X8 for transponder



Operating Instructions

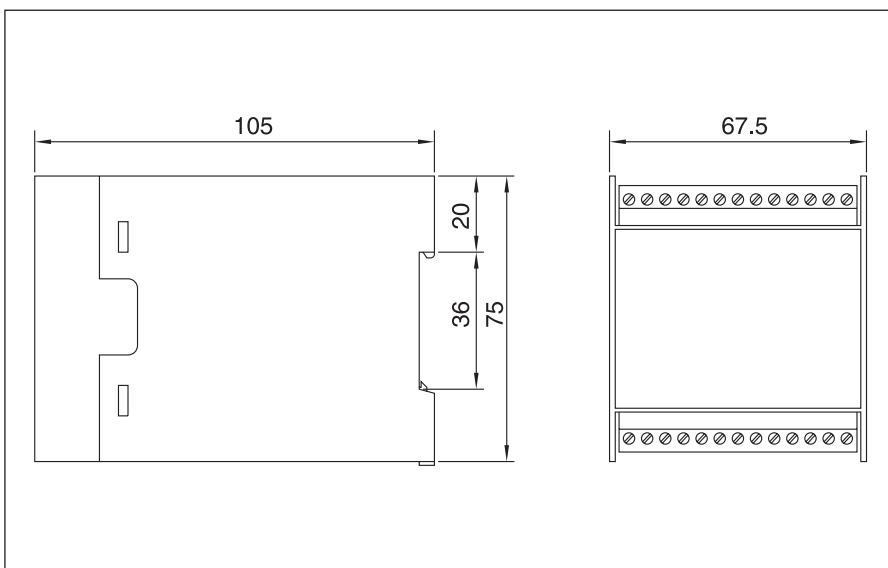
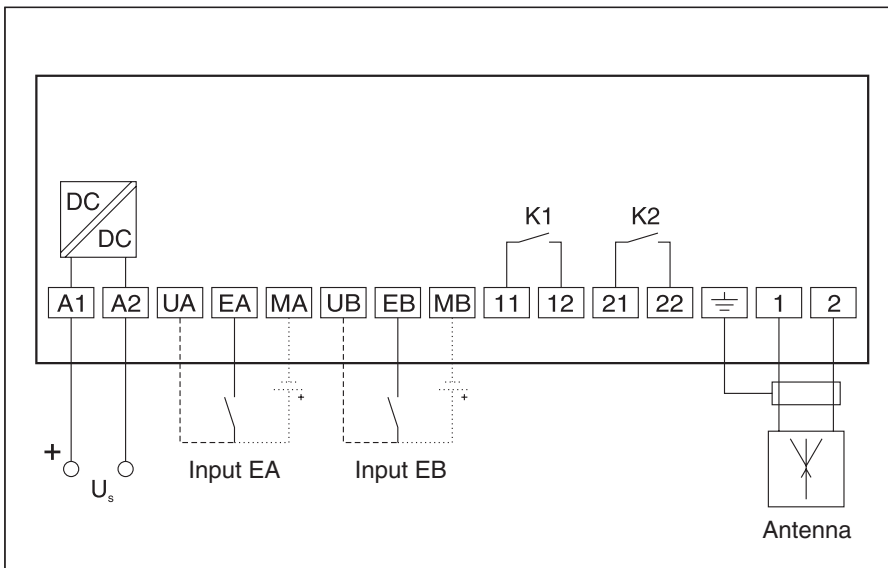
Safety transmission system in accordance with IEC 61508 SIL2
EN 954 category 3
DIN 19250 requirement class 4
EN 50121-4, EN 300330-2, EN 50155
for wireless signal transmission from Safety Edges

These operating instructions apply to the following Control Units:

1003676	SG-ÜST 108	24 V=
1003392	SG-ÜST 118	110 V=

Control system

The single-fault-safe electronics module has two channels (redundant). Each channel triggers a forceguided relay. The relays self-test by contact return after each switching cycle. The electronic system monitors the signals from the transponder. The transponder monitors the tactile sensor connected to it. When the transponder enters the electrical field of the antenna, the latter transmits a detection code when the Safety Edge is not activated. This transmitted code is reliably analysed by the Control Unit and the relays K1 and K2 energise, the green LEDs K1 and K2 light up. When the transponder moves out of the field of the antenna again or if the Safety Edge is activated, the code is not transmitted and the relays K1 and K2 deenergise, the LEDs K1 and K2 go out.



Enclosure

W x H x D (mm)	67,5 x 75 x 105
Protection class	IP20
Plug connection	each 13-pin
Weight	approx. 300 g

Parts supplied

- **Control Unit**
Enclosure with electronics module and plug-in connectors.
- **Operating Instructions**

Safety Control Unit SG-ÜST 1X8 for transponder

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 the relevant safety regulations for the installation and operation of electrical systems.

Please read!

This unit is designed and tested in accordance with IEC 61508 and EN 50155 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-ÜST 108	DC 24 V
SG-ÜST 118	DC 110 V
Voltage tolerance	-30% to +30%
Power consumption	< 10 W
Antenna voltage	AC 250 V / 125 kHz

Control Unit Outputs

Switching channel K1 and K2	11/12, 21/22
Switching voltage	max. DC 110 V
Switching current	300 mA

Control Unit Inputs

Input voltage UA, UB	
SG-ÜST 108	DC 24 V \pm 30%
SG-ÜST 118	DC 110 V \pm 30%

Times

Reaction time	< 50 ms
Reactivation time	< 100 ms

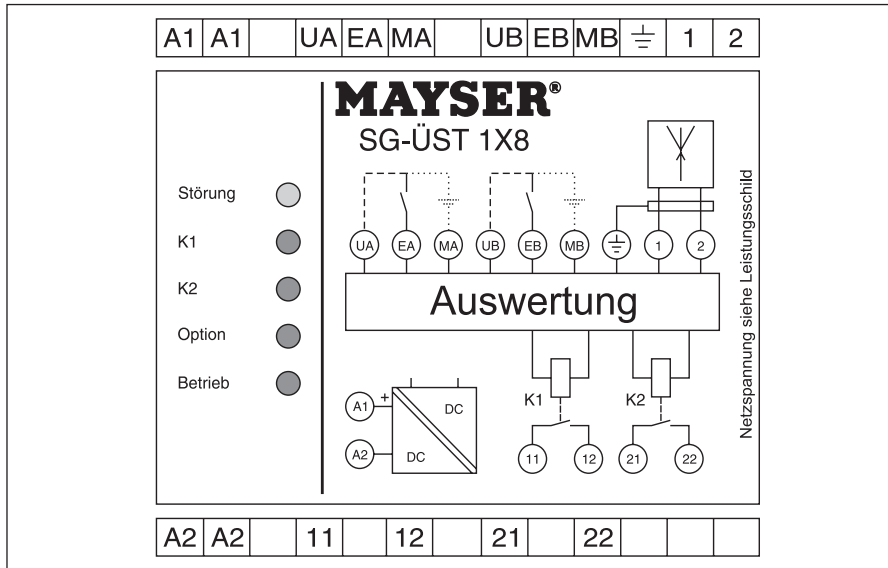
Operating conditions

Permissible ambient temperature	
short-time (< 10 min.)	-25 °C to +85 °C
long-time	-25 °C to +70 °C
Air temperature on contact plate	-25 °C to +85 °C

Important notes:

- **Supply voltage**
must be in accordance with the connecting voltage U_s indicated on the type plate.
- **Permissible temperature range**
If installing into a cabinet, maintain sufficient distance from heat sources (min. 2 cm).
- **Protection class**
The unit may only be used in locations with a minimum protection class of IP 54 (e.g. cabinet).
- **Wiring**
Wire direct to the control circuit or continue two-channel mode to the next circuit
- **Inductive loads**
When switching inductive loads the user must be fitted out with spark absorbers.
- **Inputs EA and EB**
Optionally, the inputs EA and EB can be programmed in the factory for individual functions.

Installation and Operation



Installation

Fix the enclosure in any position on 35 mm standard rail IEC 60715. Wiring is carried out in the cable terminals of the plug connections:

Supply voltage	A1, A2
Antenna	1, 2
Relay K1	11, 12
Relay K2	21, 22
Input EA	
Input	EA
Input voltage	UA
Earthing	MA
Input EB	
Input	EB
Input voltage	UB
Earthing	MB

Commissioning

After connecting the antenna, relay contacts and the mains connection, carry out function test in the following order:

Transponder not in field

- LEDs of K1 and K2 off
- Output relays K1, K2 deenergised

Transponder in field, sensor not activated

- LEDs of K1 and K2 on
- Output relays K1, K2 energise

Transponder in field, sensor activated

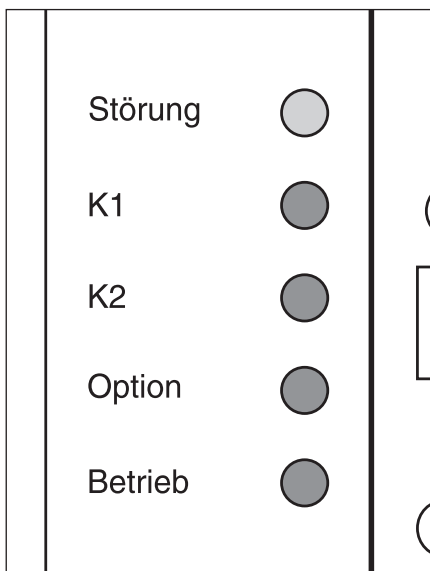
- LEDs of K1 and K2 off
- Output relays K1, K2 deenergised

WARNING!

Do not release terminals or remove the plug-in connection with power on.

WARNING!

Do not cross link Control Units. The terminals 1, 2 (antenna) and those of the inputs EA and EB are not isolated and must therefore not be cross-linked with other Control Units.



LEDs information

- LED (yellow) "Störung" (fault)
Unit has internal fault
- LED (green) "K1" and "K2"
Transponder in field and sensor not activated, relays K1 and K2 energised.
- LED (green) "Option" (option)
optional
- LED (green) "Betrieb" (on)
Operating voltage active

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. Transponder outside of field

Relay "K1" (11, 12) and relay "K2" (21, 22) must be deenergised.

2. Transponder in field

Relay "K1" (11, 12) and relay "K2" (21, 22) must energise.

3. Activate sensor

Relay "K1" (11, 12) and relay "K2" (21, 22) must deenergise.

Troubleshooting and fault elimination

Prerequisite: SG-ÜST 1X8 connected to power supply and antenna. Transponder in field with connected and not activated sensor.

green LED "Betrieb" (on) off:

- > supply voltage off or incorrect
 - ☞ Check supply voltage, compare with type plate
 - ☞ Observe correct polarity
- > Fault still exists, Control Unit faulty
 - ☞ Replace Control Unit

green LEDs "K1" and "K2" off

- > Fault on sensor side (transmitter side)
 - ☞ Check whether transponder is in the field or sensor is activated
 - ☞ Take transponder with fault out of the field and place reference transponder in field
 - > Control Units "K1" and "K2" energised: transponder or sensor faulty
 - ☞ Replace transponder with sensor
- > Fault on the Control Unit side (receiver side)
 - ☞ Replace antenna
 - > Fault still exists: Control Unit faulty
 - ☞ Replace Control Unit

yellow LED "Störung" (fault) on:

- > Fault in Control Unit
 - ☞ Generate device restart by power reset
 - > LED "Störung" (fault) continues to be lit: Control Unit faulty
 - ☞ Replace Control Unit

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