



Switching Units

ESD3

- DIN Housing
- Safety Category 3 according EN954-1
- For contact mats acc. to EN 1760-1 / for safety edges acc. to EN 1760-2
- Auto, External Reset

Switching Units monitor tactile signal sensors such as safety mats, contact strips and bumper systems

Function

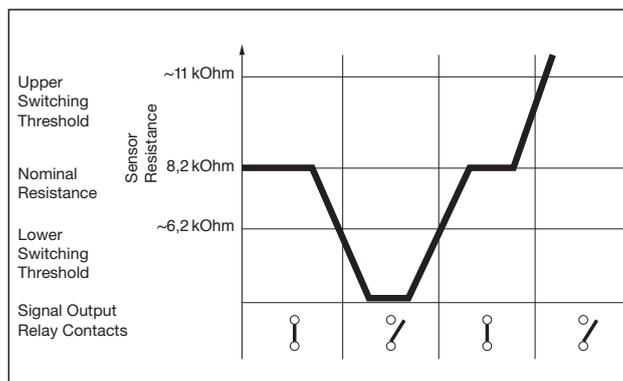
Connected Sensors have a terminal resistance of 8.2 kOhm and are monitored for changes in the continuously flowing no-load current. In the non-activated condition both relays are energised.

When one or more Sensors are activated

- the total resistance sinks towards zero ohm
- if the value falls below the defined threshold (6.2 kOhm)
- the relays are de-energised
- the **yellow** LED illuminates

When a Error occurs in the Sensor circuit

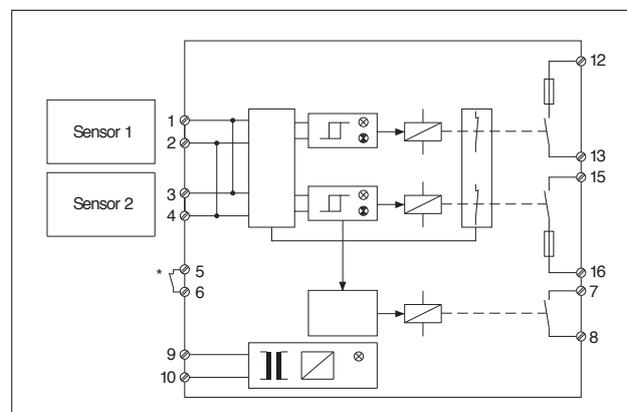
- the total resistance rises towards infinity if the value rises above the defined threshold (11 kOhm)
- the relays are de-energised
- the **red** LED illuminates



Type ESD-3

- safety Category 3 according to EN954-1
- self-monitoring
- double redundant signal evaluation
- automatic or external Reset
- fail-safe
- force guided relay

Block Diagram and Connection



Terminal		Terminal	
1	Signal Sensor 1	9	Supply Voltage
2	Signal Sensor 1	10	Supply Voltage
3	Signal Sensor 2	11	-
4	Signal Sensor 2	12	Safety Output Relay 1
5	External Reset	13	Safety Output Relay 1
6	External Reset	14	-
7	Indication Relay	15	Safety Output Relay 2
8	Indication Relay	16	Safety Output Relay 2

* Versions with automatic reset have this function integrated in the circuit

Terminals

- type: 2 x 8 pole plugable
- max. cross-section 2.5 mm²

Variation Table

The ESD3 variants are distinguished firstly by their reset function and secondly by the configuration of the status relay contact. This can be implemented off-load both as open and closed. It is not a safety contact, but is exclusively used for transmitting information. It is not monitored for failure and must never be used for safety shutdown in any form whatsoever. Each type is available in three voltage supply variants: 24 V AC/DC, 115 V AC, 230 V AC.

Version	Inputs 2	Safety Relay Separation	Reset		Status Relay			
			Auto	External	M	SM	C	D
03	x	x	x			x		
04	x	x	x		x			
05	x	x		x		x		
06	x	x		x	x			
08	x	x	x					x
09	x	x		x				x
03C	x	x	x					x
05C	x	x		x				x

Function Status Relay

Contacts	Type	No voltage	Sensor not operated	Sensor operated (LED yellow)	Error (LED red)
Safety contact	all Types	O	X	O	O
Error Indication contact SM	ESD3-03,-05	O	X	X	O
Error Indication contact C	ESD3-03C,-05C	X	O	O	X
Indication contact M	ESD3-04,-06	O	X	O	O
Indication contact D	ESD3-08,-09	X	O	X	X

Legend:

O = Contact open

X = Contact closed

Reset

Auto-Reset

- NO button on the front
- Reset electronically integrated

External Reset

- NO button on the front
- external button (NC)
- Terminals 5,6

Technical data

- Housing DIN ABS, red/black
- Isolation Class IP 30 (IEC 529)
- Protection Class IP54
- Weight max. 250 gramm (depending on type)
- Power Supply 24 VACDC $\pm 10\%$
acc. to EN60204-1 115 VAC $\pm 10\%$
(depending on type) 230 VAC $\pm 10\%$
- Frequency Range 50/60 Hz (45–66 Hz)
- Power consumption max. 5 VA
- Duty Cycle 100%
- Fastening 35 mm mounting rail acc. to EN50022

Safety Output Relay

- Utilization category AC-1: 250 V/2 A/500 VA
acc. to EN60947-4-1* approx. 300'000 switchings
DC-1: 24V/2 A/48 W
approx. 700'000 switchings
- Utilization category AC-15: 250 V/2 A/500 VA
acc. to EN60947-5-1* approx. 130'000 switchings
(DC13: 6 switchings/ DC-13: 24V/2 A/48 W
minute) approx. 70'000 switchings
- Contacts positively driven relays, AgCuNi
- Operating Life Mechanical 50 million switchings
- Fuse Protection 2 A slow

Error Signal Indicator Relay

- Switching Capacity 24 VDC/1 A, resistive load
30 VAC/1 A, resistive load

Indicators

- Operation LED 3 mm
Green
- Error Red (sensor resp. system error)
- Safety Switch-off Yellow (sensor)

Reaction Time

- Sensor relay < 50 ms

Temperature Range

- Operation -20°C to $+55^{\circ}\text{C}$
- Storage -20°C to $+80^{\circ}\text{C}$

Humidity

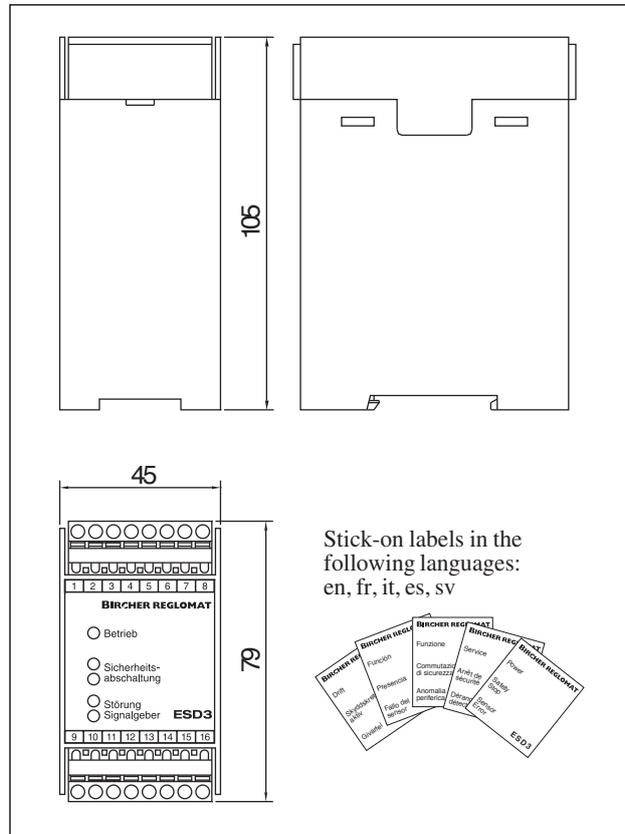
- max. 80% relative
(no condensation allowed)

***If not mentioned ratings are required, ask for them at the manufacturer.**

For 24 VACDC supply voltage must be obtained from a safety trafo according to IEC742. The wiring must be protected against mechanical damage.

Specifications are liable to change in accordance with product improvement.

Dimension Sheet



Detailed assembly and operating information can be obtained from the Operating Instructions enclosed with the product

Order Information

