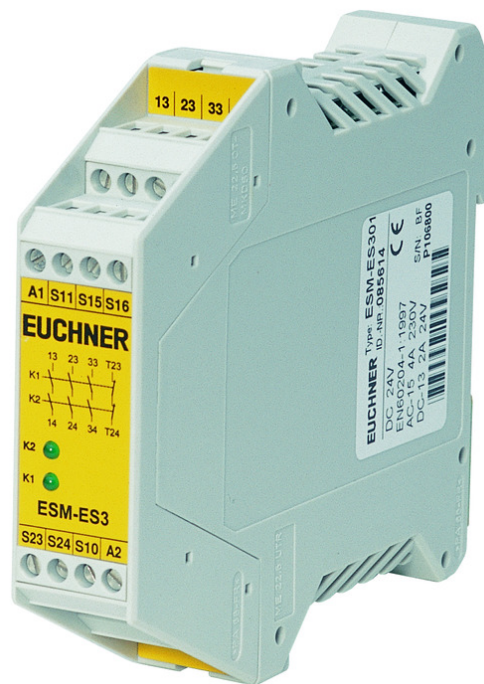


## ITEM 090057 ESM-ES301P

Description	Technical data	Accessories	Downloads
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### Features

- › Usage up to category 4 according to EN ISO 13849-1
- › LED status indicators
- › Control using safety relays
- › 3 redundant safety contacts
- › 1 auxiliary contact (monitoring contact)
- › Earth fault/ground fault monitoring can be selected
- › Plug-in connection terminals

### Relay outputs

The outputs are electrically decoupled and of redundant design.

### Connection

By using suitable wiring the following function can be selected:

- › Earth fault/ground fault monitoring to detect short circuits between the connection cables and earth or ground and to shut down the outputs or prevent relay starting if necessary.

## Approvals



## Mechanical values and environment

Housing material	Polyamide PA6.6
Weight	Net 0,23 kg
Ambient temperature	At $U_B = 24V$ AC -15 ... 40 °C At $U_B = 24V$ DC -15 ... 60 °C
Degree of protection	IP20
Mechanical life	operating cycles $10 \times 10^6$
Contact material	AgNi-10
Mounting method	Mounting rail 35mm according to DIN EN 60715 TH35
Connection	Plug-in connection terminals
Length of control cable	
With conductor cross-section $0.75\text{mm}^2$	1000 m
	<b>Safety contacts 13/14, 23/24, 33/34</b>
Number of safety contacts	3
	<b>Auxiliary contacts S23/S24</b>
Number of auxiliary contacts	1

## Electrical connection ratings

Operating voltage	AC/DC 24 V -10% ... +10% [1]
Rated insulation voltage $U_i$	250 V
Rated impulse withstand voltage $U_{imp}$	
Leakage path/air gaps	4 kV
Overtoltage category according to IEC EN 60664-1	3
Reverse polarity protection	
On version $U_B = 24V$ DC	
Power consumption	
at 24V DC	1,2 W
Degree of contamination (external, according to EN 60947-1)	2
Connection cross-section	0,14 ... 2,5 $\text{mm}^2$
Test voltage	
Control system/contacts	2,5 kV

Control voltage	On S11	24 V
Control current	S11...S14	40 mA
LED indicator		2 status displays (green) for relays K1 and K2
<b>Safety contacts 13/14, 23/24, 33/34</b>		
Type of output	NO	Relay contacts, floating, positively driven (redundant) [2]
Switching voltage	AC	max.250 V
	DC	max.24 V
Switching current		at 24Vmin.20 mA
Cumulative current		For all contactsmax.10,5 A
Fusing		
External contact fuses (safety circuit) according to IEC 60269-1		10A gG (T4A / F6A)
Utilization category according to EN 60947-5-1	AC-15	3A, 250V
	DC-13	3A, 24V
	AC-12	6A ohmic load, 250V
	DC-12	1.25A ohmic load, 24V
<b>Auxiliary contacts S23/S24</b>		
Type of output	NC	As monitoring contact for safety relay

## Miscellaneous

in compliance with	EN 60439-1: 1999 + A1: 2004; EN 60947-1: 2007; EN 60947-5-1: 2004; EN 60947-7-1: 2002; EN 61000-6-2: 2005; EN 61000-6-3: 2007; EN ISO 13849-1: 2015; EN 62061: 2005 + AC: 2010 + A1: 2013 + A2: 2015; EN 60204-1: 2007
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## Reliability values acc. to EN ISO 13849-1

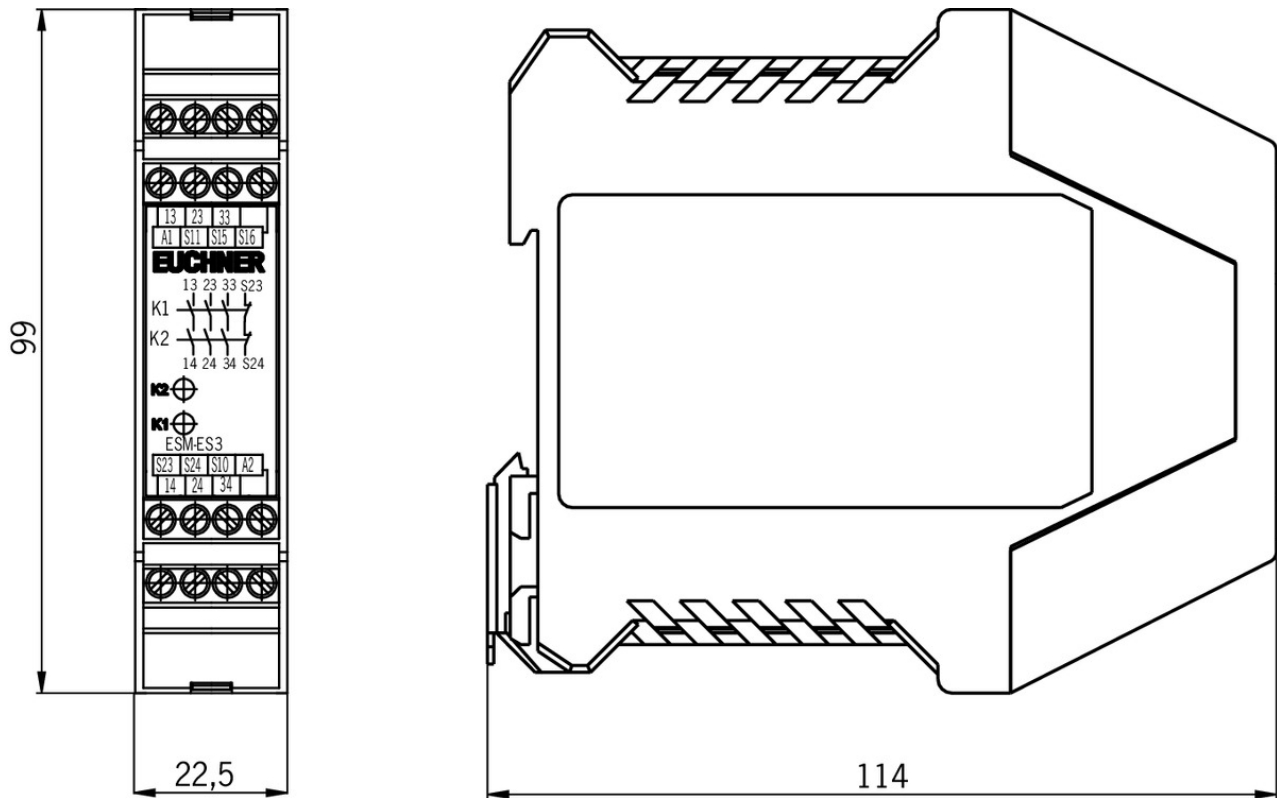
Performance Level	PL e [3]	
Category	4 [4]	
PFH <sub>D</sub>	$1.2 \times 10^{-8}$ [5]	
Number of switching cycles	≤ 0.1 A at 24 V DC	max.400000 1/Jahr
	≤ 1 A at 24 V DC	max.73000 1/Jahr
	≤ 2 A at 24 V DC	max.17000 1/Jahr
Mission time	20 y [6]	

[1] All the electrical connections must either be isolated from the mains supply by a safety transformer according to EN 61558-2-6 with limited output voltage in the event of a fault, or by other equivalent isolation measures.

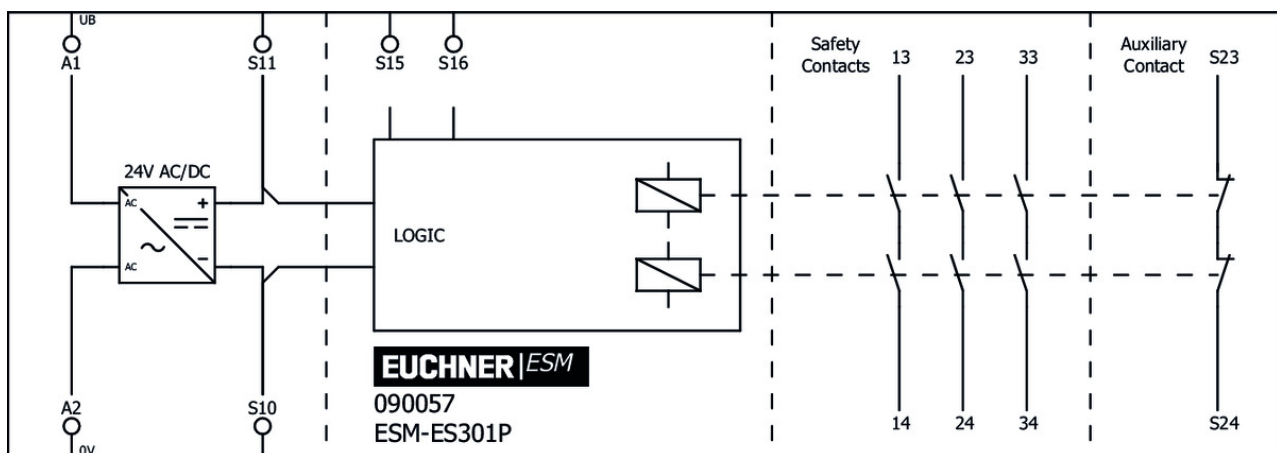
[2] Positively driven relay according to EN 50205

[3, 4, 5, 6] This value is dependent on the number of switching cycles and the switching current.

### Dimension drawing



### Block diagram



### Connection material

Connection kit ESM...P, screw terminals

**097194** ESM-F-AK4

▼ Features

- › Plug-in screw terminals safety relay ESM
- › Can be coded

▼ Connection kit ESM...P, spring terminals





**097195** ESM-F-KK4

▼ Features

- › Plug-in spring terminals safety relay ESM
- › Can be coded






## Instructions

▼ Sicherheits-Kontakterweiterung ESM-ES3..

	Doc. no.	Version	Language	Download
Sicherheits-Kontakterweiterung ESM-ES3..	090074	07-02/15		 0.6 MB
Safety Expansion Contact Block ESM-ES3..	090074	07-02/15		 0.5 MB

## Declaration of conformity

▼ EU-Konformitätserklärung

	Doc. no.	Version	Language	Download
EU-Konformitätserklärung	2090791	15-04/17		 0.3 MB
Declaración UE de conformidad				
Déclaration UE de conformité				
Dichiarazione di conformità				
EU declaration of conformity			