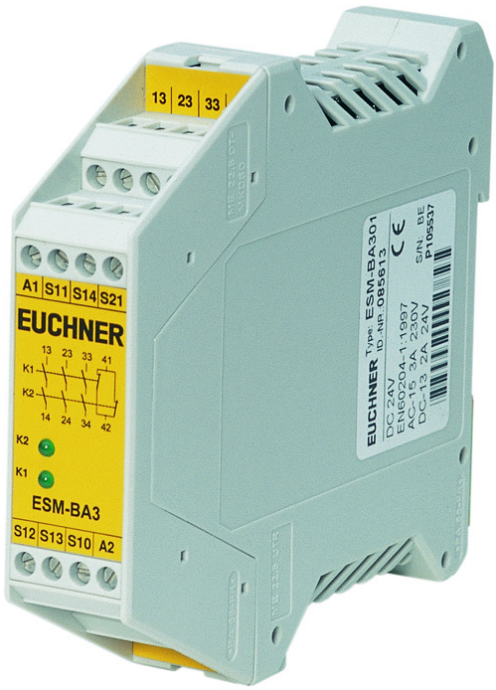
ITEM 087413 ESM-BA303

Description | Technical data | Accessories | Downloads



Features

- ESM-BA.. Usage up to category 4 according to EN ISO 13849-1
- LED status indicators
- 1-channel or 2-channel control
- 3 redundant safety contacts
- 1 auxiliary contact (monitoring contact)
- Short circuit and earth fault/ground fault monitoring

Relay outputs

The outputs are electrically decoupled and of redundant design.

Connection options

By using suitable wiring the following functions can be selected:

- Relay start with automatic start or a start button.
- Monitoring of downstream relays or contactors
- Simultaneity monitoring to monitor safety components over time.
- Relay start using a monitored start button.
- Short circuit monitoring to detect short circuits between the connection cables and to shut down the outputs or prevent relay starting if necessary.

- 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.

Auxiliary contacts

The relays in the series ESM-BA3.. are available with electrically separate normally closed contacts and auxiliary contacts.

Approvals

Mechanical values and environment

Housing material	Polyamide PA6.6
Weight	
Net	0,23 kg
Ambient temperature	-15 ... 40 °C [1]
Degree of protection	IP20
Mechanical life	
operating cycles	10×10^6
Contact material	$AgSnO_2$
Mounting method	Mounting rail 35mm according to DIN EN 60715 TH35
Connection	Connection terminals
Length of control cable	
With conductor cross-section 0.75mm^2	1000 m
	Safety contacts 13/14, 23/24, 33/34
Number of safety contacts	3
	Auxiliary contacts 41/42
Number of auxiliary contacts	1

Electrical connection ratings

Operating voltage	
AC	230 V -10% ... +10%
Power consumption (apparent power)	
At 230 V AC	6,9 VA
Rated insulation voltage U_i	250 V
Rated impulse withstand voltage U_{imp}	
Leakage path/air gaps	4 kV
Overvoltage category according to IEC EN 60664-1	3

Rated supply frequency	50 ... 60 Hz
Degree of contamination (external, according to EN 60947-1)	2
Connection cross-section	0,14 ... 2,5 mm²
Test voltage	
Control system/contacts	2,5 kV
Control voltage	
On S11	18,6 ... 24 V 26 V Start button
Control current	
S11...S14	60 mA
LED indicator	2 status displays (green) for relays K1 and K2
	Safety contacts 13/14, 23/24, 33/34
Type of output	
NO	Relay contacts, floating and positively driven (redundant) [2]
Switching voltage	
AC	max.250 V
DC	max.24 V
Switching current	at 24Vmin.5 mA
Cumulative current	For all contactsmax.15 A [3]
Fusing	
External contact fuses (safety circuit) according to IEC 60269-1	10A gG (T6A / F8A)
Utilization category according to EN 60947-5-1	
AC-15	3A, 250V
DC-13	3A, 24V
AC-12	8A ohmic load, 250V
DC-12	8A ohmic load, 50V
Breaking capacity according to UL	8A 250V AC / 3A 24V DC per contact
	Auxiliary contacts 41/42
Type of output	
NC	Relay contacts, floating
Utilization category according to EN 60947-5-1	
AC-12	2A, 250V
DC-12	2A, 50V
Breaking capacity (VA)	max.500 VA
Breaking capacity according to UL	2A 250V AC / 2A 24V DC per contact

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

Reliability values acc. to EN ISO 13849-1

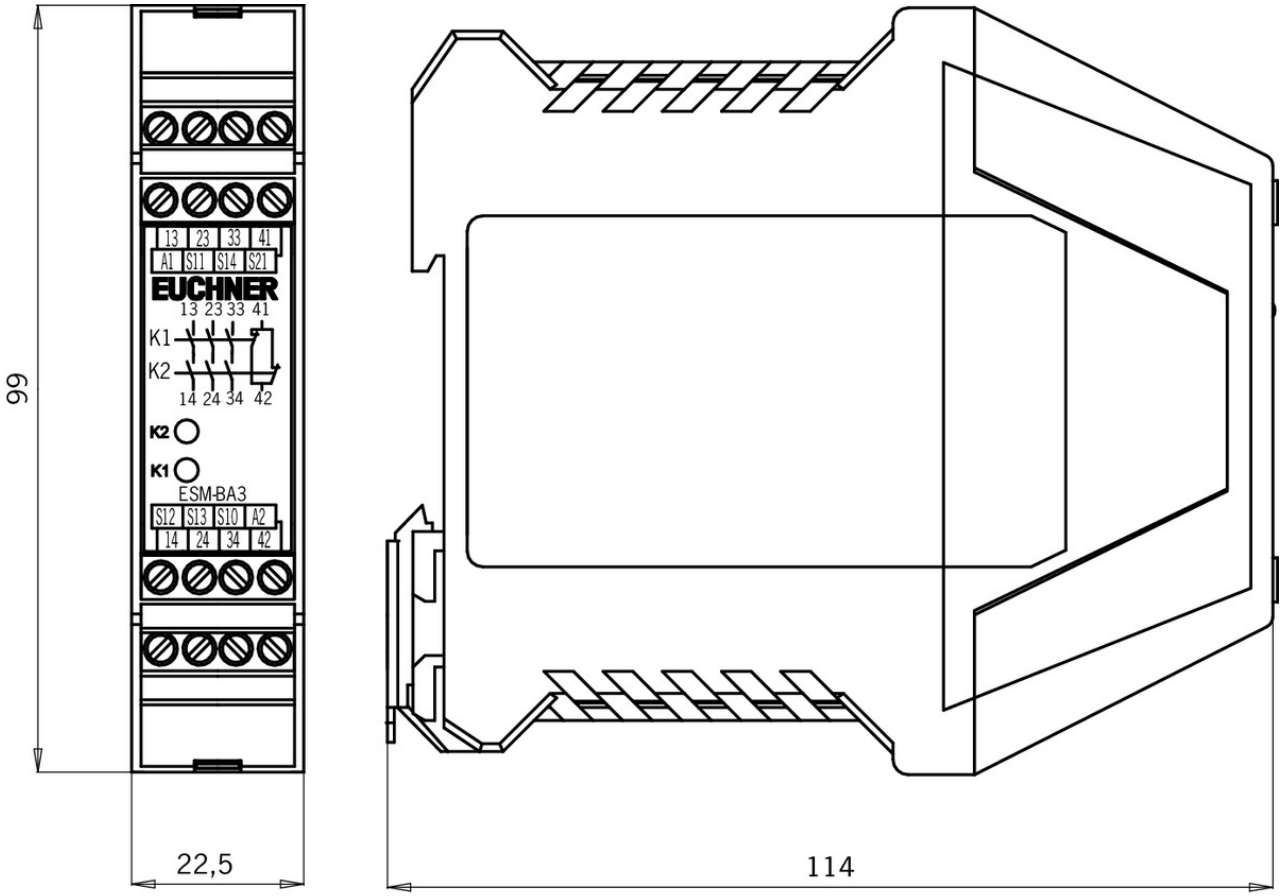
Performance Level	PL e **[4]**
Category	4 **[5]**
PFH_D	1.2×10^{-8} **[6]**
Number of switching cycles	
≤ 0.1 A at 24 V DC	max.500000 1/Jahr
≤ 1 A at 24 V DC	max.350000 1/Jahr
≤ 2 A at 24 V DC	max.100000 1/Jahr
Mission time	20 y **[7]**

[1, 3] If several ESM-BA3.. devices are closely spaced under load, the max. cumulative current at the ambient temperature of T=20°C is 9A; at T=30°C is 3A; at T=40°C is 1A. If these currents are exceeded, a spacing of 5mm between the devices must be observed.

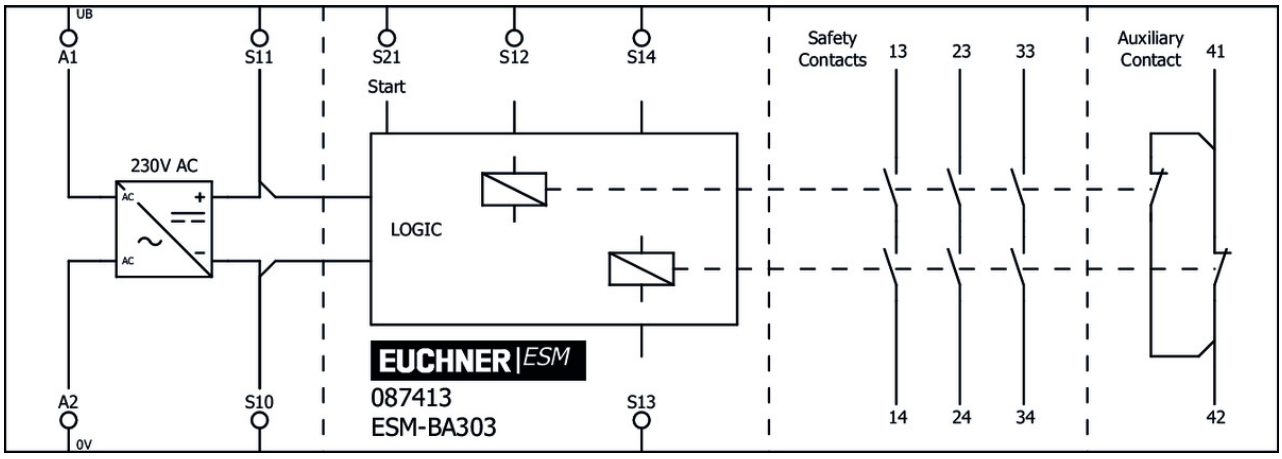
[2] Positively driven relay according to EN 50205

[4, 5, 6, 7] This value is dependent on the number of switching cycles and the switching current.

Dimension drawing



Block diagram



Instructions

Basisgerät Baureihe ESM-BA3..

	Doc. no.	Version	Language	Download
Basisgerät Baureihe ESM-BA3..	090073	07-04/15		1.3 MB
Emergency Stop Safety Relay ESM-BA3..	090073	07-04/15		1.3 MB

Catalogs

Sicherheitsrelais ESM Safety Relays ESM Relais de sécurité ESM 安全继电器 ESM

	Doc. no.	Version	Language	Download
Sicherheitsrelais ESM	110650	05-02/13		6.7 MB
Relais de sécurité ESM	110652	05-02/13		6.8 MB
Safety Relays ESM	110651	05-02/13		6.7 MB
安全继电器 ESM	155884	05-02/13		4.6 MB

Magnetisch codierte Sicherheitsschalter CMS Système de sécurité sans contact CMS Magnetically Coded Safety Switches CMS

	Doc. no.	Version	Language	Download
Magnetisch codierte Sicherheitsschalter CMS	086823	09-02/18		2.3 MB
Système de sécurité sans contact CMS	090606	09-02/18		2.3 MB
Magnetically Coded Safety Switches CMS	086824	09-02/18		2.3 MB

Declaration of conformity

EU-Konformitätserklärung

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