



F111 E-Stop Relay

E-Stop Relay and Safety Gate Monitor

Features

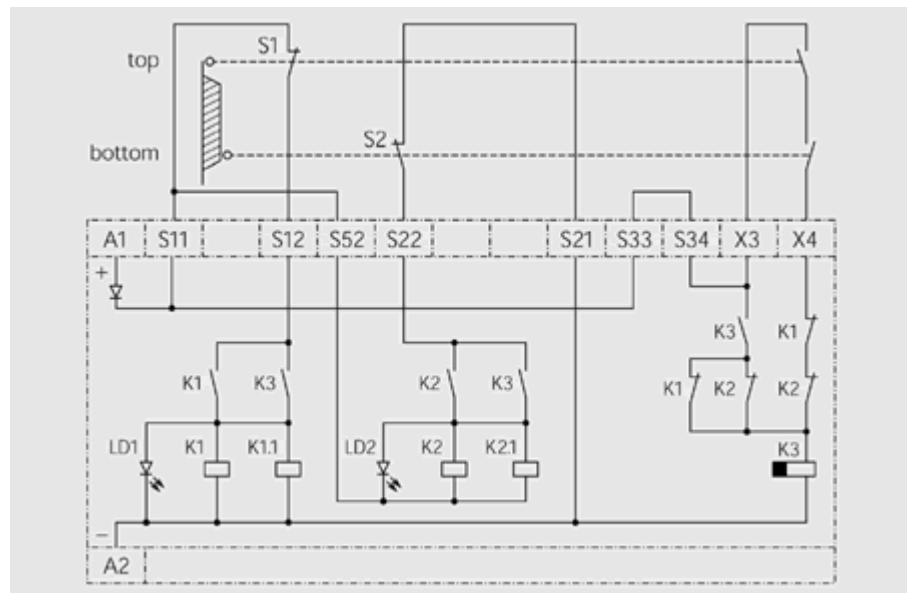
- Stop grade 0
- Safety grade 4
- 3 safety contacts
- 2 ancillary contacts
- 24 VDC
- Detection of shorts Self-monitoring

DIN EN 60204 Section 1 / VDE 0113 Section1 (06/93) prescribes that power circuit with a safety function must be specified as per Section 9.4. In such safety circuits auxiliary contactors must intervene to guarantee redundancy so that, despite the occurrence of a fault in one of the auxiliary contactors, the safety circuit remains operative. In every on-off cycle of the machine, the auxiliary contactors must be checked automatically at least once to ensure correct opening and closure of the contacts.



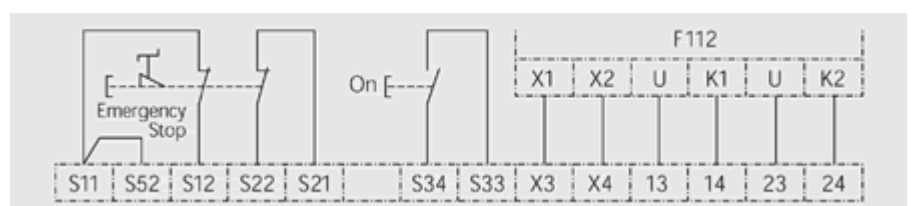
Emergency - stop relay **F111** fulfils this requirement – EN 954-1 (3.97) – to the highest safety grade 4 as well. Model **F111** can be used as a safety guard monitor or as an emergency-stop relay (single-or double channel version; pay attention to wiring examples). Protection against shorts exists in case of application involving a 2 - channel emergency - stop switch. That means in case of shorts in the emergency stop circuit the emergency-stop model **F111** will break the contact. This will be effected by an electronic circuit-breaker in the safety relay. After the cause of the malfunction has been eliminated, **F111** is ready for operation again.

Wiring Examples 1 and 2



Wiring example 1 (with internal wiring): 2-channel safety guard monitor with forced-switching limit switches. There set is locked and released by the limit switches "make" contacts. Application for automated production installations.

Wiring example 2: 2-channel emergency stop circuit and 2-channel multiplication of contacts with F112.

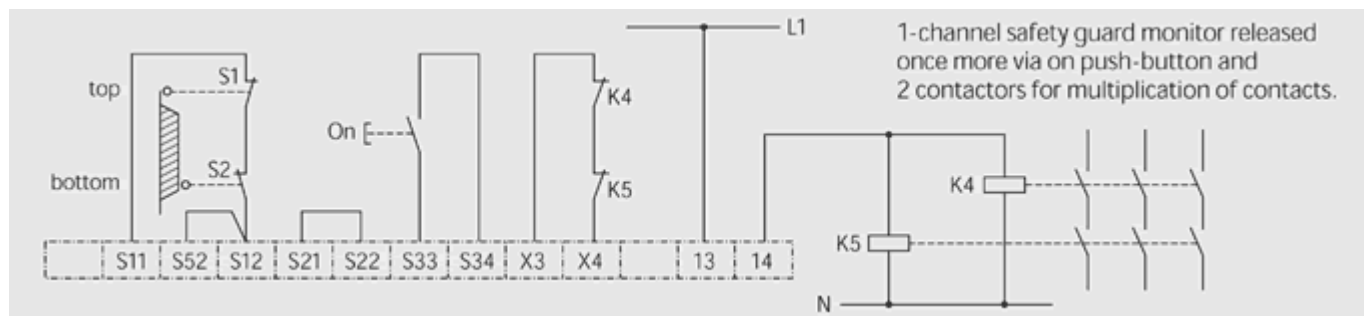


Wiring example 3 see technical data

F111 E-Stop Relay



Wiring Example 3



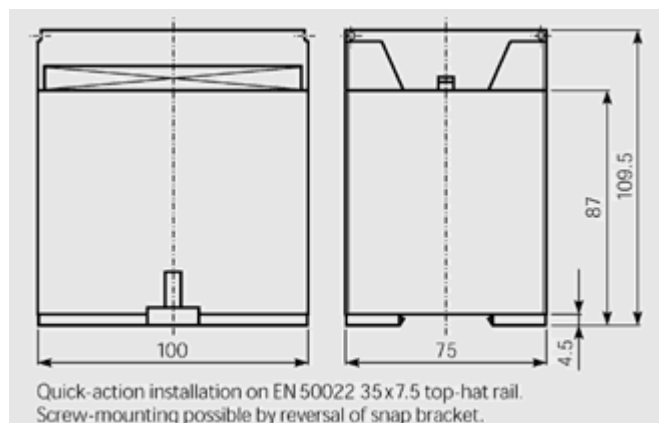
Technical Data

Rated voltage	24 V _{DC}
Voltage range	0.8 to 1.1 x rated voltage
Power consumption	approx. 3 W
Rated insulation voltage	250 V
Surface-leakage paths and air gaps	Overvoltage category III Pollution level 2 to DIN VDE 0110-1 (01/89) and DIN VDE 0110-2 (01/89)
Test voltage	2.5 kV
Ambient temperature	-5 °C to +55 °C
Mode of protection	IP20 terminals, IP40 casing to DIN VDE 0470-1 (11/92)
Switching capacity	250 V _{AC} ; 5 A; 1200 VA/120 W 24 V _{DC} preferably with spark arrest
Utilisation category	AC-15 250 V 5 A; DC-13 24 V 3 A
Response time	on: approx. 350 ms; off: approx. 15 ms
Output contacts	3 N/O (safety contacts) 1 N/C, 1 N/O (auxiliary contacts)
Mechanical service life	10 ⁷ switching cycles
Switch material	AgSnO, 0.5 µ Au
Terminal bolts	Terminal box with wire protection
Line cross section	rigid 4 mm ² , flexible 2.5 mm ² , connecting lead to be stripped up to max. 4 mm
Control circuit	approx. 24 V _{DC}
Output contact fuse	6 A slow blow

Models and Ordering Data

Contacts	3 N/O (safety contacts) 1 N/O (auxiliary contact) 1 N/C (auxiliary contact)
Type F111	Order No.
24 V _{DC}	074 00008

Dimensional Drawing



Circuit Diagram

