

Characteristics

- Stop category 0
- Safety category 4
- 5 Safety contacts
- 1 Auxiliary contact
- Crossfault monitoring
- Monitored or automatic reset
- Tested for light curtain applications

DIN EN 60204 Section 1 / VDE 0113 Section 1 (11/98) prescribes that power circuits with a safety function must be specified as per Section 9.4.

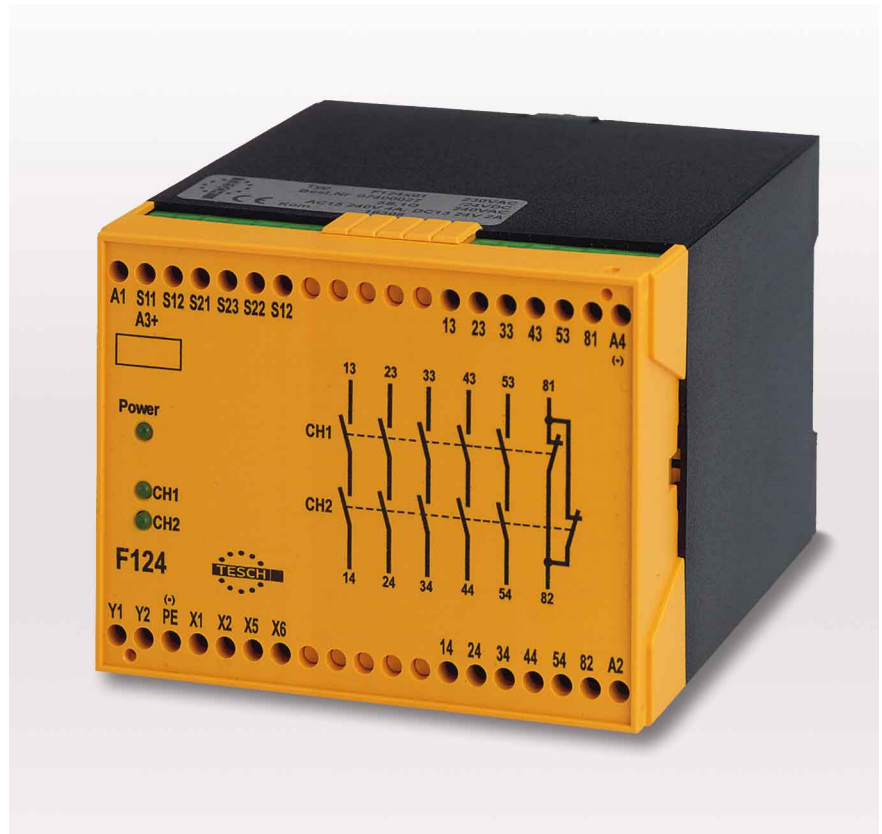
In such safety circuits auxiliary contactors must intervene to guarantee redundancy so that, despite the occurrence of a fault in one of the auxiliary contactors, the safety circuit remains operative.

In every on - off cycle of the machine, the auxiliary contactors must be checked automatically at least once to ensure correct opening and closing of the contacts.

Emergency-stop relay **F124** fulfils this requirement – EN 954-1 to the highest safety category 4.

Mode of Operation

F124 can be used as a safety guard monitor or as an E-stop relay in single or dual channel applications. The dual channel operation shown in wiring example 1 includes crossfault monitoring between both E-stop circuits. That means in case of shorts between



the two E-stop channels the **F124** will de-energise the outputs. This is achieved by an electronic protection circuit in the safety relay. After elimination of the malfunction, the **F124** is ready for operation again. The application with monitored start checks the start circuit (Y1-Y2) and will only activate the **F124** if there is a leading edge in this circuit. The recovery time in this function has to be at least 5s. If wired for autostart function (X5 and X6 linked) the **F124** will be activated automatically by the supply voltage, if the E-stop circuits and the feedback loop (X1-X2) are closed.

In applications, where both E-stop circuits are not closed simultaneously, (e.g. safety gates) channel 2 has to be activated before channel 1. If the inputs S12 and S22 will be activated with external 24V_{DC} (Light curtain application), the negative pole has to be connected to terminal PE. In that case power supply on A1-A2 is only necessary to drive the Power-LED.



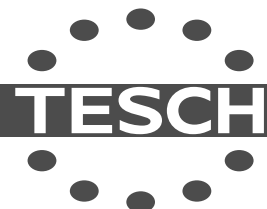
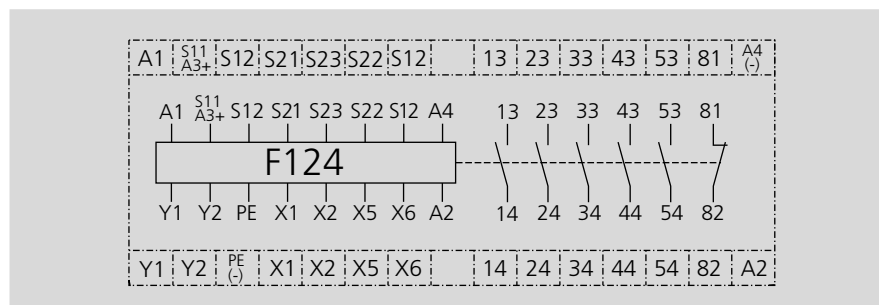
Models and Ordering Data

Contacts	5 Safety Contacts NO 1 Auxiliary Contact NC
Type F124	Order No.
230V _{AC} /24V _{DC}	074 00027*
115V _{AC} /24V _{DC}	074 00028*
48V _{AC} /24V _{DC}	074 00029
24V _{AC} /24V _{DC}	074 00030*
24V _{AC/DC} *	074 00031*

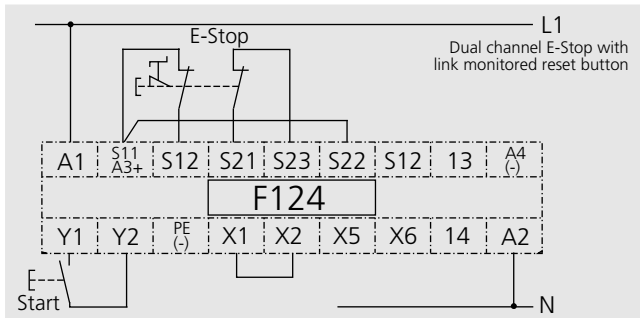
*Version without galvanic isolation, do not connect PE to this type.

* = Approval for U.S./ Canada

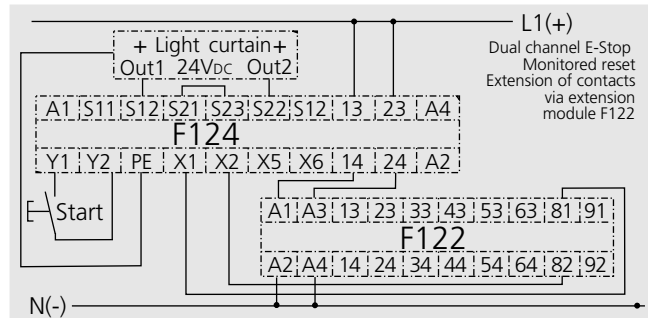
Circuit Diagram



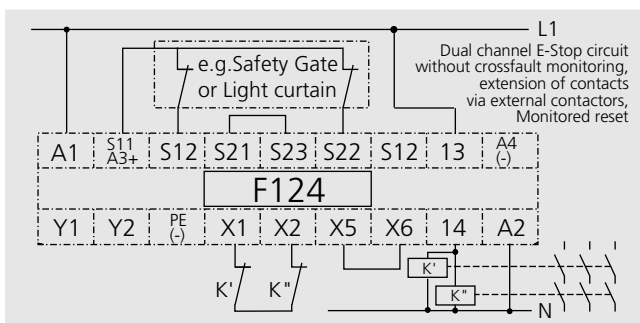
Wiring Example 1



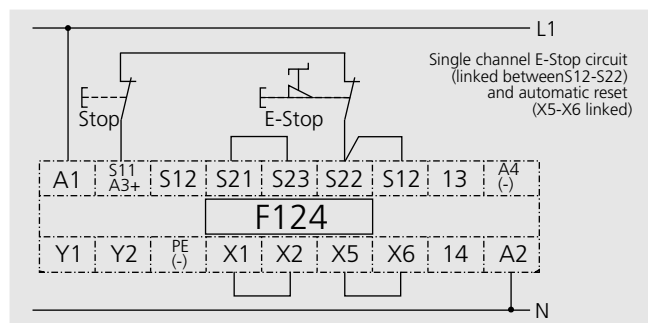
Wiring Example 2



Wiring Example 3



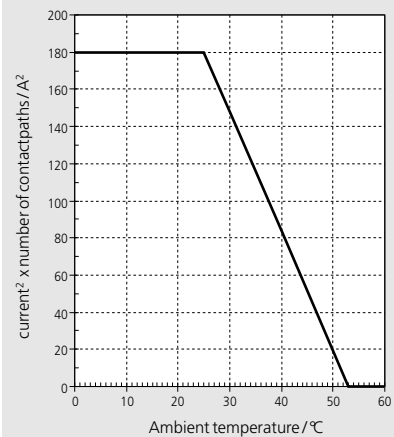
Wiring Example 4



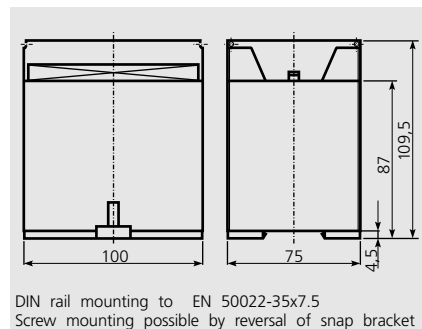
Technical Data

Rated voltage	230/115/48/24V _{AC} ; +24V _{DC} (A3/A4); 24 V _{AC/DC}
Voltage range	0.8 (0.85 at 24V _{DC}) to 1.1 x rated voltage
Power consumption	Approx. 3 W
Rated insulation voltage	250 V
Creep distance and gaps	Overvoltage category III Pollution level 2 to DIN VDE 0110-1 (04/97)
Test voltage	2.5 kV
Ambient temperature	-5 °C to + 50 °C
Mode of protection	Terminals IP 20, IP 40 casing to DIN VDE 0470- 1 (11/92)
Switching capacity	250 V _{AC} ; 6A, 1500 VA / 24 V _{DC} ; 6A, 144 W, preferably with spark arrest
Thermic current I _{th}	According to current summary limit curve (right) (max. 10 A in one current path)
Utilisation categorie	AC-15 250 V 4 A; DC-13 24 V 2 A
Response time	Via reset button: <60 ms; Autostart: <1s
Release time	Via E-stop button: <20 ms; loss of supply: <60 ms
Recovery time	With monitored reset: >5s; with autoreset: > 2s
Output contacts	5 N/O (safety contacts) 1 N/C (auxiliary contact)
Mechanical lifetime	10 ⁷ switching cycles
Switch material	Ag SN O ₂ + 0,5µ Au
Terminals	Terminal box with wire protection
Line cross section	Rigid 4mm ² , flexible 2.5mm ² Connecting lead to be stripped up to max. 4mm
Input current per channel	Approx. 65mA
Control- circuit	Approx. 24 V _{DC}
Contact protection	Screwed-type fuse max. 6 A slow blow Auto.circuit breaker max C10 A quick break
Weight	710g; Typ 24V _{AC/DC} : 550g

Contact De-Rating: Temperature F 124



Dimensional Diagram



DIN rail mounting to EN 50022-35x7.5
Screw mounting possible by reversal of snap bracket

TESCH