Safety Relay F126

E-Stop Relay and Safety Gate Monitor

Characteristics

- Stop category 0
- Safety category 4
- 2 Safety contacts
- 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 closure of the contacts.
Emergency-stop relay **F126** fulfils this requirement – EN954-1 - to the highest safety grade 4.

The **F126** is available for single or dual channel operation with or without crossfault monitoring

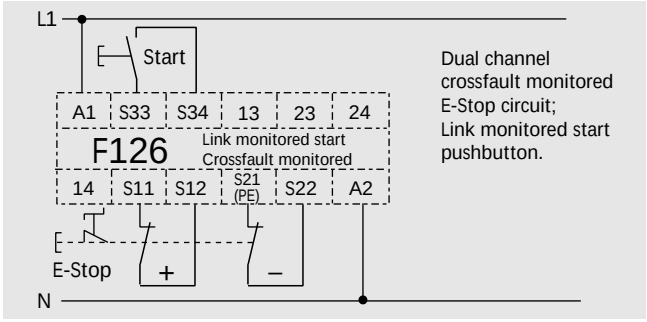
Mode of Operation

The dual channel operation shown in wiring examples 1 and 2 includes crossfault monitoring between both E-stop circuits.

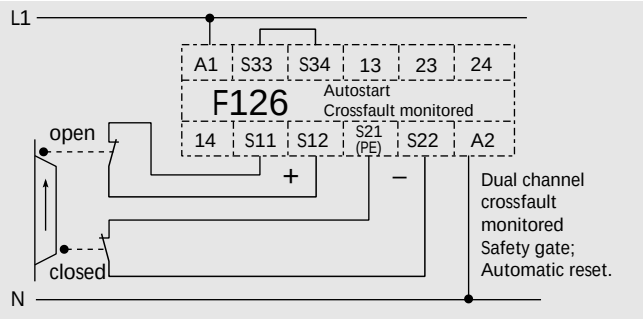
That means in case of shorts between the two E-stop channels the **F126** will de-energise the outputs. This is achieved by an electronic protection circuit in the safety relay.
After elimination of the malfunction, the **F126** is ready for operation again.
The versions with monitored start check the start circuit (S33/S34) and will only activate the **F126** if there is a leading edge in this circuit.

Versions with autostart function will be activated automatically by the supply voltage if the E-stop circuits and the feedback loop (S33/S34) are closed.
If the inputs S12 and S22 are activated with external 24VDC, the negative pole has to be connected to S21 (Light curtain application).
To control N/C contacts from external contactors the feedback loop should be connected in series between S33 and S34.

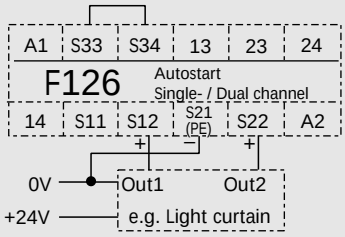
Wiring Example 1



Wiring Example 2



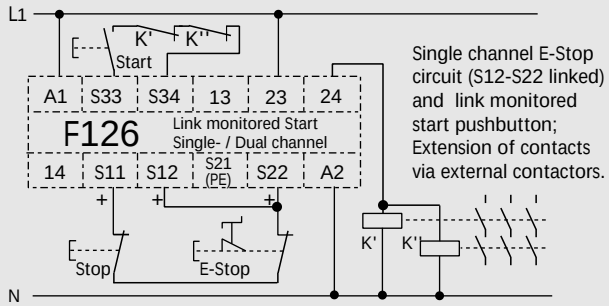
Wiring Example 3



Activation as well as supply via 24VDC semiconductor-outputs (without activation of the "Power LED"); Automatic reset

Only the types "F126 single- / dual channel" allow to activate both channels with +24VDC.

Wiring Example 4

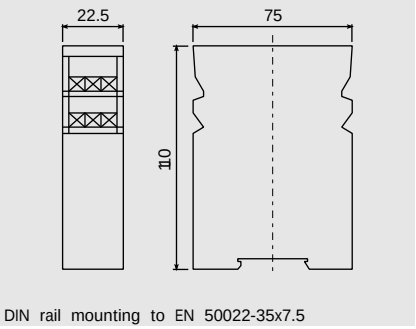


Single channel E-Stop circuit (S12-S22 linked) and link monitored start pushbutton; Extension of contacts via external contactors.

Technical Data

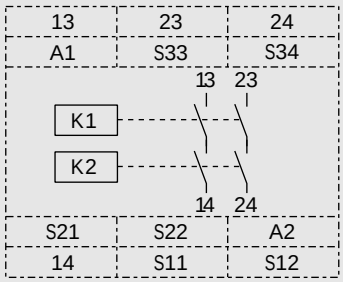
Rated voltage	230 / 115VAC ; 24VAC/DC
Voltage range	0.8 to 1.1 x rated voltage
Power consumption	approx. 4W
Rated insulation voltage	250V
Creep distance and gaps	Overvoltage category III Pollution level 2 to DIN VDE 0110-1 (11/98)
Test voltage	2.5 kV
Ambient temperature	- 5℃ to +55℃
Mode of protection	Terminals IP 20, IP 40 casing to DIN VDE 0470- 1 (11/92)
Switching capacity	250VAC; 1200VA / 24VDC; 144W, preferably with spark arrest
Thermic current I_{th}	max. 6 A in one current path
Utilisation categorie	AC-15 250V 5A; DC-13 24V 3 A
Response time	Via reset button : <60ms; Autostart: <300ms
Release time at rated voltage	Via E-stop button: <15ms; loss of supply: <140ms
Recovery time	>0.1s after E-stop or light curtain operation >1s after loss of supply
Output contacts	2 N/O (safety contacts)
Mechanical lifetime	10^7 switching cycles
Switch material	$AgSnO_2$ 0.5µ Au
Terminals	Terminal box with wire protection
Line cross section	Rigid 4 mm², flexible 2.5 mm² Connecting lead to be stripped up to max. 4mm
Control circuit	ca. 24VDC
Contact protection	Screwed-type fuse: max 6A slow blow Auto circuit breaker: max C10A
Weight	215g, Type 24VAC/DC 160g

Dimensional Diagram



DIN rail mounting to EN 50022-35x7.5

Circuit Diagram



Models and Ordering Data

Contacts	2 Safety contacts			
	Autostart, Crossfault monitored	Autostart, Single-/ Dual channel	Link monitored start, Crossfault mon.	Link mon. start, Single-/Dual channel
Type F 126	**Order-No.**			
230 VAC	074 00045	074 00048	074 00051	074 00054
115 VAC	074 00046	074 00049	074 00052	074 00055
24 VAC / DC	074 00047	074 00050	074 00053	074 00056

Please select suitable type according to the application shown in the wiring examples.

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