

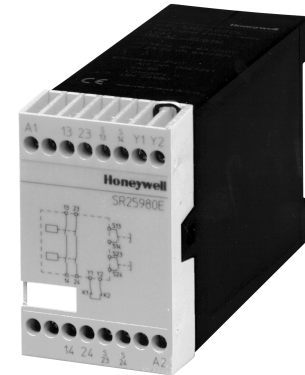
FF-SR25980 Two-hand Safety Module

FEATURES

- Complies with the Machinery Directive 98/37/EC and UL 508
- Type 3 A per EN 574
- Gold plated, 5 µm contacts 3 A allow low current
- Mechanical life up to ten million operations
- Electrical life up to one million operations
- Switching current up to 10 A
- Voltage drop protection
- 45 mm / 1.77 in width

TYPICAL APPLICATIONS

- Secondary protection for robotics



FF-SR25980

Two-hand safety controls ensure protection against hand injury due to dangerous machine movement. A two-hand safety control system is made up of two elements: a control board and a safety control module. The control board has two control devices that force the use of two-hand activation simultaneously. The safety control element is a device like the FF-SR25980 two-hand safety module. This control module relay is linked to the control board and is located in an enclosure.

The module will accept input from the two control devices (between S13/S14 and S23/S24) if Y1/Y2 are jumpered (or closed). When both input contacts close within half a second and remain closed, the two normally open safety contacts (13/14 and 23/24) will close. If these input contacts fail to close within half a second, or if power has been removed, another activation is required.

When one of the input contacts opens, the two normally open safety contacts of the FF-SR25980 module will open immediately.

⚠ WARNING

MISUSE OF DOCUMENTATION

- The information presented in this product sheet (or catalogue) is for reference only. DO NOT USE this document as system installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

FF-SR25980 Two-hand Safety Module

SPECIFICATIONS

- Two-hand Safety Control for hand injury protection



FF-SR25980

Input	Nominal voltage	120 Vac (-15%, +10%), 230 Vac (-20%, +10%), 24 Vdc (-10%, +10%)
	Nominal consumption	120 and 230 Vac: 4 VA; 24 Vdc: 2,5 W
	Nominal frequency	50 to 60 Hz
	Nominal voltage between S13/S14 and S23/S24	24 Vdc with 35 mA current; control line length must not exceed 30 m / 98 ft and must be routed separately from power cables
	Time required for simultaneous contact closure S13/S14 and S23/S24	0,5 s
Output	Contact complement	2 NO contacts
	Contact type	Safety relay, positive-guided
	Response time	Activation/deactivation by inputs S13/S14 and S23/S24: 30 ms
	Switching Capability	Power factor = 1 with resistive load
	Current Range (min. to max.)	1 mA to 10 A (See Note 1)
	Voltage Range (min. to max.)	0,1 to 250 Vac/dc
	Switching capability (per ac15: EN 60947-5.1)	NO contact: 5 A / 250 Vac
	Typical Electrical Life Expectancy	Power factor = 1 at 230 Vac/dc (See Note 2)
	3 A	1 000 000 operations
	5 A	500 000 operations
	10 A	220 000 operations
	Typical Power Factor (cos φ)	Limitation Factor (See Note 3)
	0,3	0,45
	0,5	0,70
	0,7	0,85
	1	1
	Mechanical life	Ten million switching operations
	Fuse Rating	6 A time delayed
General	Temperature range	-15 °C to +55 °C / 5 °F to 131 °F at max. 90% humidity
	Sealing	Housing: IP 40 • Terminals: IP 20
	Housing material	Thermoplastic
	Vibration resistance	Amplitude 0,35 mm; Frequency 10 to 55 Hz
	Conductor connection	1 x 4 mm ² solid (max.) [12 AWG] or 2 x 1,5 mm ² (max.) [16 AWG] stranded wire with sleeve DIN 46288
	Conductor attachment	M 3,5 screws terminals; wire contacts are enclosed to prevent electrical shock
	Mounting	Quick install rail mounting EN 50022-35
	Weight	410 g / 0.90 lb

ORDERING INFORMATION

FF-SR25980 □

Voltage:
2 = 24 Vdc
E = 120 Vac
G = 230 Vac

Note 1: To ensure the 1 mA capability during the lifetime of the contact, NEVER exceed 300 mA or 60 V.

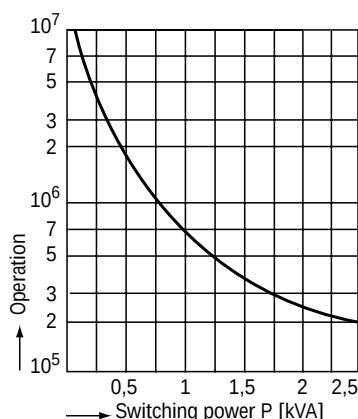
Note 2: Install arc suppression device across load to avoid module contact arcing and ensure specified relay life expectancy.

Note 3: Total operations = Operations at power factor 1 multiplied by the limitation factor. If the power factor is 0,5 at 230 Vac, 3 A (1 000 000 operations), the limitation factor is 0,70.

1 000 000 x 0,70 = 700 000 total operations.

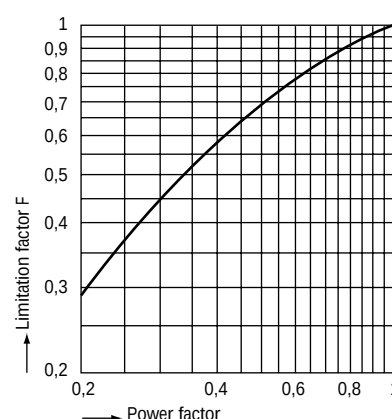
CONTACT LIFE FOR 100% RESISTIVE LOAD (TYPICAL)

Power factor = 1 (cos φ)

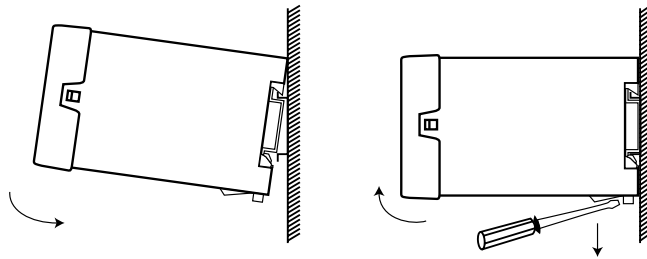


LIMITATION FACTOR FOR INDUCTIVE LOADS

Power factor < 1 (cos φ)

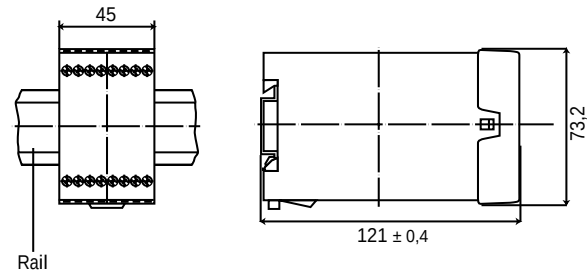


INSTALLATION DIAGRAM



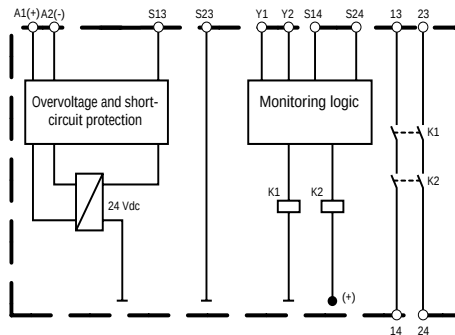
MOUNTING DIMENSIONS

Width: 45 mm / 1.77 in; Height: 74 mm / 2.9 in; Depth: 121 mm / 4.76 in

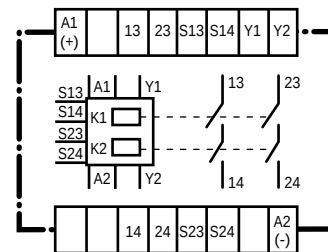


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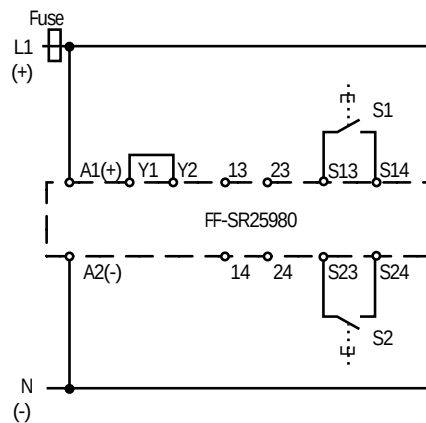
INTERNAL CIRCUITRY



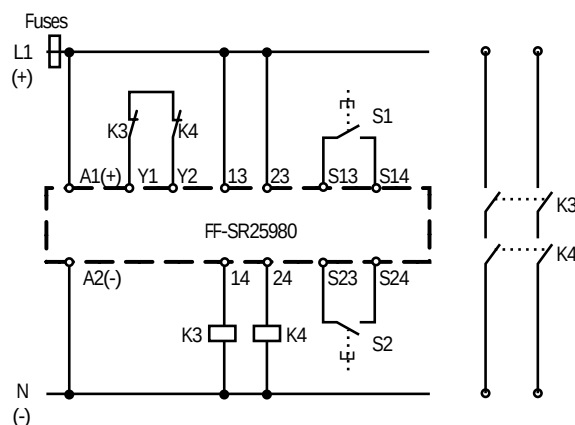
WIRING DIAGRAM



TYPICAL APPLICATION SCHEMATICS



Two-hand control



Two-hand control with contact reinforcement via external positive guided safety contacts

FUNCTIONAL DIAGRAM

