

FF-SRE6029 Extension Module



FEATURES

- Complies with the Machinery Directive 98/37/EC
- Meets the applicable parts of the US & Canadian regulations and standards ANSI/RIA/OSHA
- Redundant and positive-guided contacts
- Output: four NO contacts and two NC contacts
- LED indicates status of internal relays
- Very high mechanical and electrical lifetime
- Switching current from 10 mA to 5 A
- Slim housing width 22,5 mm / 0.89 in

TYPICAL APPLICATIONS

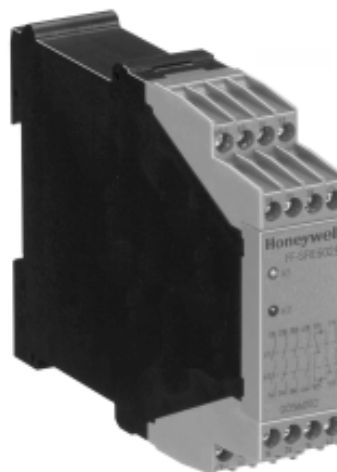
- Contact multiplication of safety devices with the External Device Monitoring capability, like
 - FF-SYB and FF-SB safety light curtains
 - FF-SR safety control modules
 - FF-SM safety mats



(pending)



(pending)



The FF-SRE6029 Extension Module provides contact multiplication for safety devices with External Device Monitoring (EDM) capability (e.g. FF-SRS e-stop modules, FF-SYB, and FF-SB light curtains, FF-SM safety mats).

This product has two safety relays with positive-guided contacts to ensure redundancy and offers four NO and one NC safety contact.

Its slim housing of only 22,5 mm (0.89 in) width allows this safety control module to fit into most cabinets and even helps to keep the overall cabinet size small.

⚠ 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-SRE6029 Extension Module

SPECIFICATIONS

- Contact multiplication of safety devices with EDM capability



Input	Nominal voltage	24 Vac (-20 %, + 10 %), 24 Vdc (-10 %, +10 %)			
	Nominal consumption	ac: 3,4 VA • dc: 1,5 W			
	Nominal frequency	50 Hz to 60 Hz			
Output	Contacts	4 NO, 1 NC (plus 1 NC for External Device Monitoring Loop)			
	Contact type	Safety relay, positive-guided			
	Response time	max. 35 ms (delay on de-energisation)			
	Delay on energisation	max. 20 ms			
	Switching capability	Power factor = 1 with resistive load			
	Current range (min. to max.)	10 mA to 5 A			
	Voltage range (min. to max.)	0,1 to 250 Vac			
	Switching capability per AC15 (EN 60947-5-1)	NO contact : 3 A / 230 Vac NC contact : 2 A / 250 Vac			
	Typical Electrical Life Expectancy	Power factor = 1 at 230 Vac (see Figure 1, note 1)			
		<i>Current</i>	<i>Operations</i>	<i>Current</i>	<i>Operations</i>
		0,5 A	5 500 000	2 A	1 000 000
		1 A	2 000 000	5 A	250 000
	Typical Power Factor (cos φ)	Limitation factor F (see Figure 2, note 2)			
		<i>Cos φ</i>	<i>F</i>	<i>Cos</i>	<i>F</i>
		0,3	0,45	0,7	0,85
		0,5	0,7	1	1
	Operating frequency	1200 operating cycles/h			
	Fuse rating	6 A time delayed (max.)			
	Mechanical life	20 000 000 operating cycles			
General	Temperature range	- 15° C to + 55° C (5° F to 131° F) at 90% humidity (max.)			
	Sealing	Housing: IP 40 • Terminals: IP 20			
	Housing material	Thermoplastic			
	Vibration resistance (IEC/EN 60 068-2-6)	Amplitude: 0,35 mm • Frequency: 10 to 55 Hz			
	Wire connection	Solid wire: 1 x 4 mm ² [12 AWG] or 2 x 2,5 mm ² [14 AWG] Stranded wire with sleeve: 1 x 2,5 mm ² [14 AWG] or 2 x 1,5 mm ² [16 AWG]			
	Wire/conductor attachment	M3,5 screw terminals			
	Mounting	Quick install rail mounting IEC/EN 60715 (width: 35 mm/1.38 in)			
	Weight	205 g / 0.45 lb			

ORDERING INFORMATION

Note 1: Install arc suppressors across load to avoid module contact arcing and ensure specified contact life expectancy.

Note 2: Total operations = operations (power factor 1) x limitation factor F.

Example:

U = 230 Vac, I = 1 A, power factor cos φ = 0,5
Switching power P = U x I = 230 VA
Contact life (cos φ = 1, P = 230 VA) = 2 000 000 operations (see Figure 1)
Limitation factor F (cos φ = 0,5) = 0,7 (see Figure 2)
Contact life (cos φ = 0,5, P = 230 VA) = F x contact life (cos φ = 0,5, P = 230 VA) = 2 000 000 x 0,7 = 1 400 000 operations.

FIGURE 1. TYPICAL CONTACT LIFE FOR 100 % RESISTIVE LOAD

(power factor cos φ = 1, note 1)

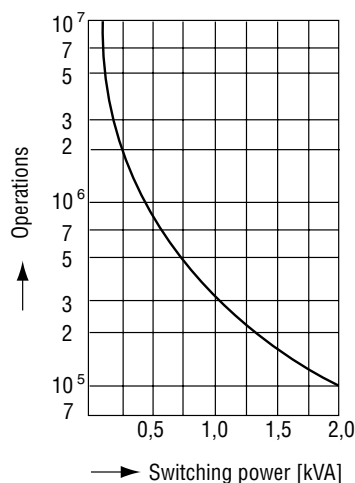
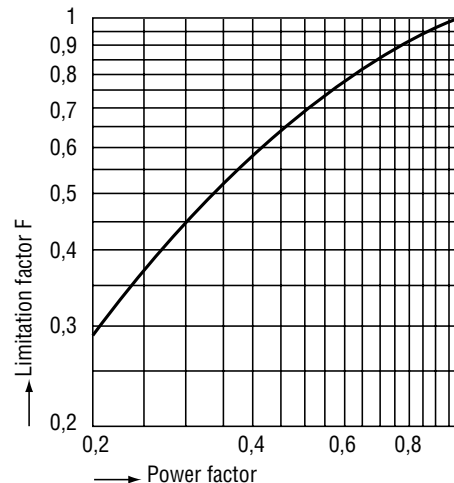
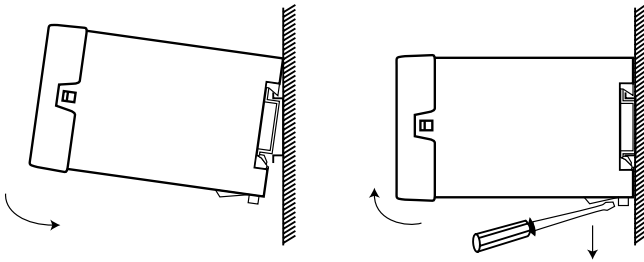


FIGURE 2. LIMITATION FACTOR FOR INDUCTIVE LOADS

(power factor cos φ < 1, note 2)



INSTALLATION DIAGRAM

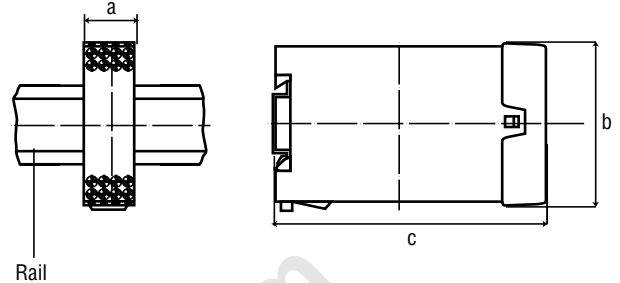


MOUNTING DIMENSIONS

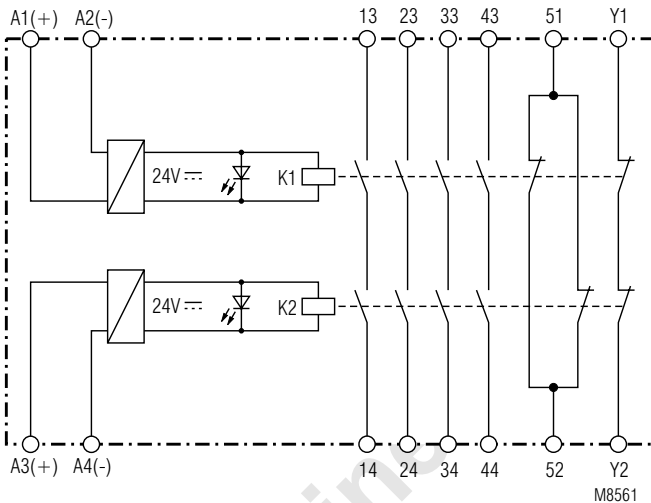
Width: 22,5 mm / 0.89 in;

Height: 90 mm / 3.55 in

Depth: 121 mm / 4.76 in



INTERNAL CIRCUITRY

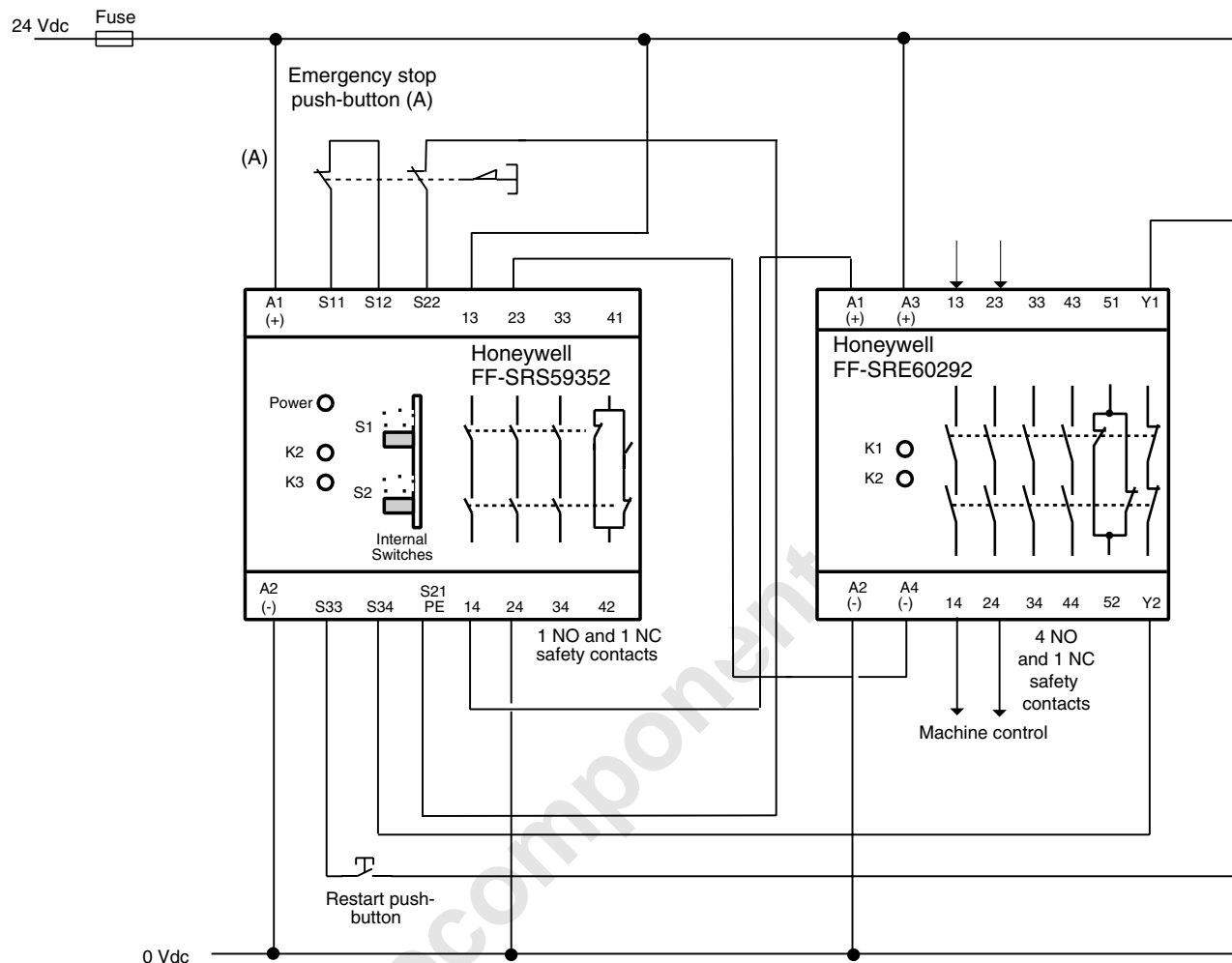


TERMINAL ARRANGEMENT

A1 (+)	A2 (-)	51	52
13	23	33	43
Honeywell FF-SRE60292 			
14	24	34	44
A3 (+)	A4 (-)	Y1	Y2

APPLICATION EXAMPLES

Connection of an FF-SRS59352 emergency stop module



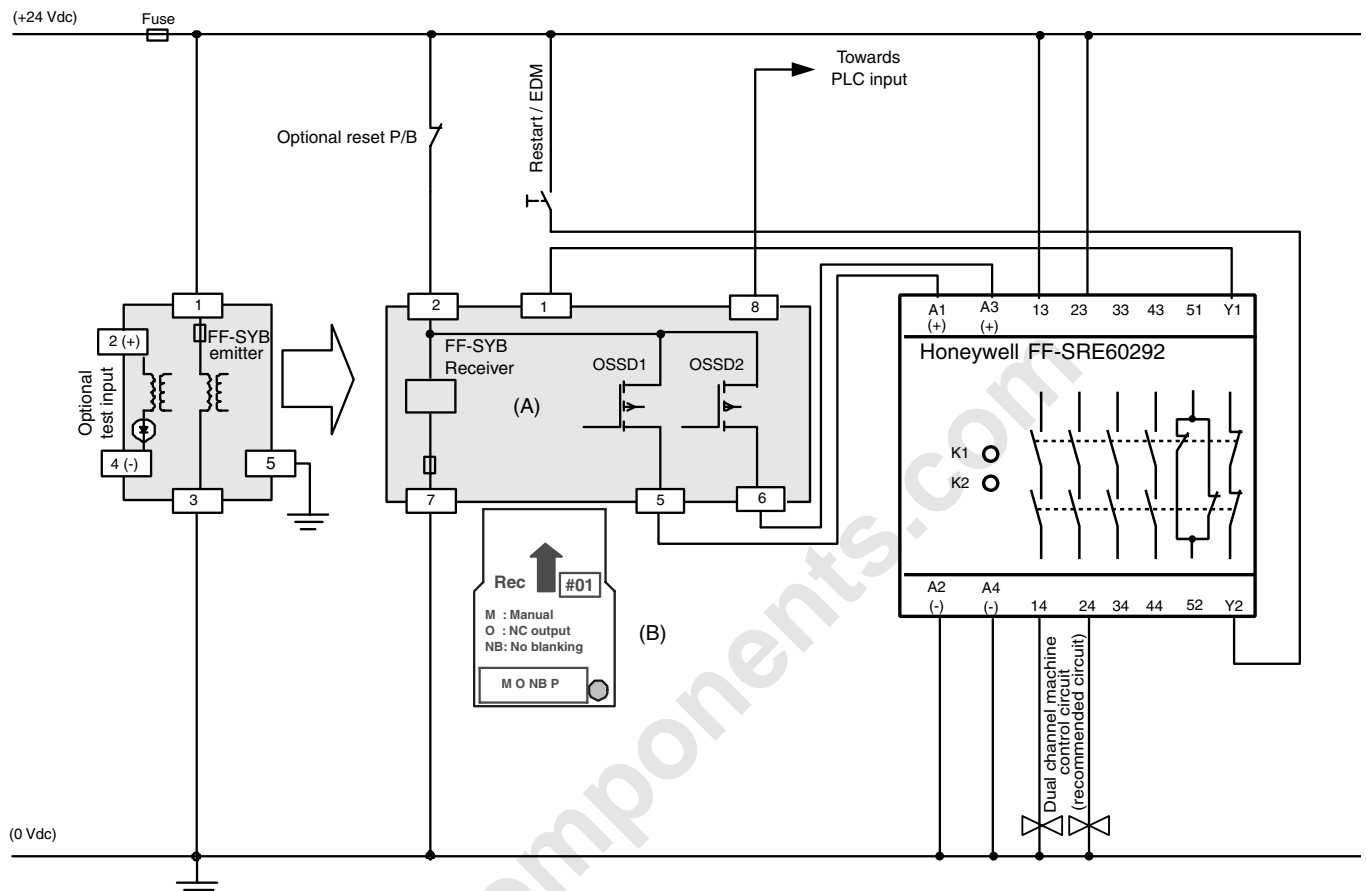
After activation of the safety device (see application note (A)), the normally open safety contacts of the FF-SRS59352 dual channel emergency stop module (13/14 to 33/34) and the connected FF-SRE6029 extension module (13/14, 23/24, 33/34, 43/44) will open. The normally closed contacts (41/42, 51/52) will close. The LED relay output indicators (K2, K3 and K1, K2) of both modules go off indicating that the internal safety relays are de-energized. After removing the emergency stop condition, press and release the restart push-button to restart the FF-SRS59352 emergency stop module. If the FF-SRE6029 extension module is operating properly, the normally closed contact (Y1/Y2) for the External Device Monitoring is closed and both safety modules are energising their internal safety relays. The normally open contacts will close and the normally closed contacts will open. The LED relay output indicators all illuminate. This action will allow the machine to operate.

APPLICATION NOTES:

Note (A): Dual channel output safety devices with relay outputs or safety switches (examples)

- emergency stop push-button
- safety light curtains (FF-SB, FF-LS), single beam (FF-SPS4), modular safety light curtains (FF-SCAN),
- safety mats (FF-SM)
- safety limit or interlock switches (e.g. CPS, GK, GSS)

Connection of an FF-SYB type 4 safety light curtain



After interrupting the sensing field of the FF-SYB safety light curtain, both static safety outputs (5, 6) of the receiver switch off. Then, the normally open contacts of the connected FF-SRE6029 extension module (13/14, 23/24, 33/34, 43/44) will open and the normally closed contacts (51/52, Y1/Y2) will close. The LED relay output indicators (K1, K2) of the module go off indicating that the internal safety relays K1 and K2 are de-energized.

After clearing the sensing field of the FF-SYB safety light curtain, press and release the restart push-button to restart the receiver. If the FF-SRE6029 extension module is operating properly, the normally closed contact (Y1/Y2) for the External Device Monitoring (EDM) is closed and the static safety outputs of the FF-SYB receiver are energising. The normally open contacts of the FF-SRE6029 module will close and the normally closed contacts will open. The LED relay output indicators K1 and K2 illuminate. This action will allow the machine to operate.

APPLICATION NOTES:

Note (A): Dual channel output safety devices with static safety outputs AND External Device Monitoring (EDM) function (e.g. FF-SYB safety light curtains).

Note (B): CONFIGURATION CARDS

Various mode settings are possible with the FF-SYB safety light curtain (e. g. start / restart, muting, floating blanking) using configuration cards. The example above uses the factory setting configuration card for the receiver (#1: manual start, no muting, no blanking). Refer to the FF-SYB installation manual for more information.

Warranty and remedy

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Contact your local sales office for warranty information. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace without charge those items it finds defective. The foregoing is Buyer's sole remedy and is **in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.**

While we provide application assistance, personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

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