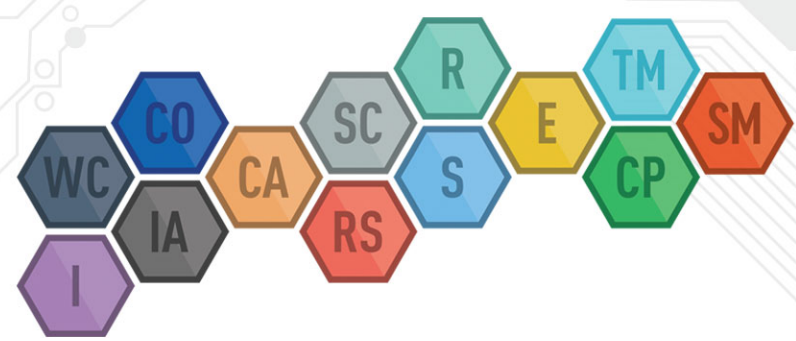




Panasonic



SF-M Series Safety Relays

Michael Neugebauer
Product Engineer



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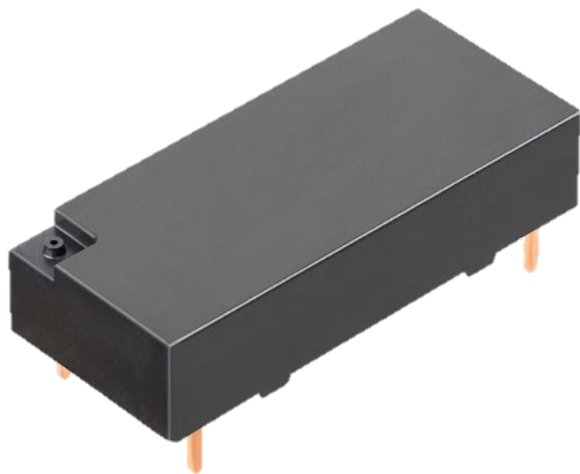
- SF-M Relay Introduction
- Market Trends
- Target Applications
- Comparison Chart



SF-M Series Safety Relay

Dimensions

33(L) × 14(W) × 7.8(H) mm

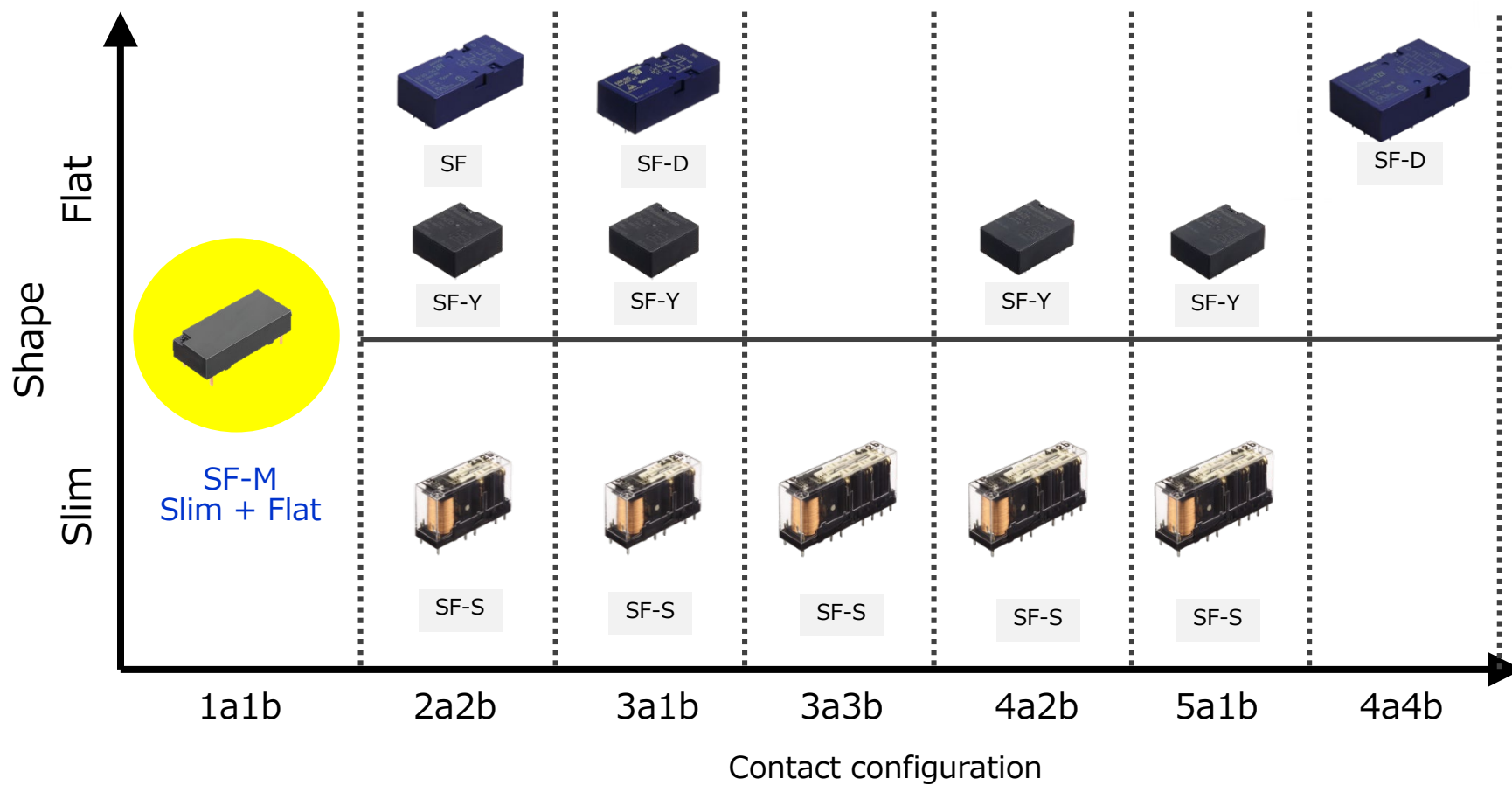


Features

- **1 Form A 1 Form B contact arrangement**
Forcibly guided contact structure
compliant with IEC61810-3 (EN50205)
- **Low profile and slim footprint**
Save space on the circuit board
- **Low holding power (100mW)**
Reduces power consumption and
contributes to overall energy savings
- **Sealed or flux-resistant construction**
Reflow capable for flux-resistant



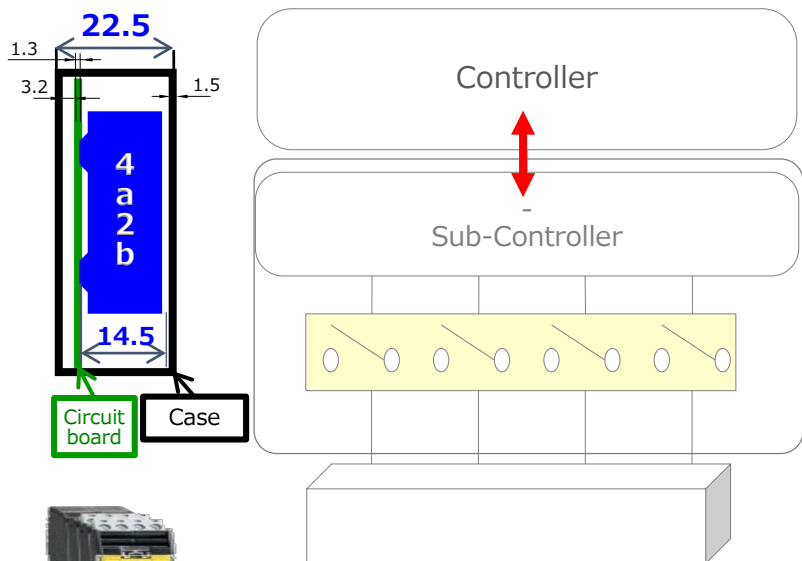
Safety Relay Lineup



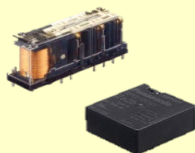
Market Trends

• Individualized Control & Standard Adoption

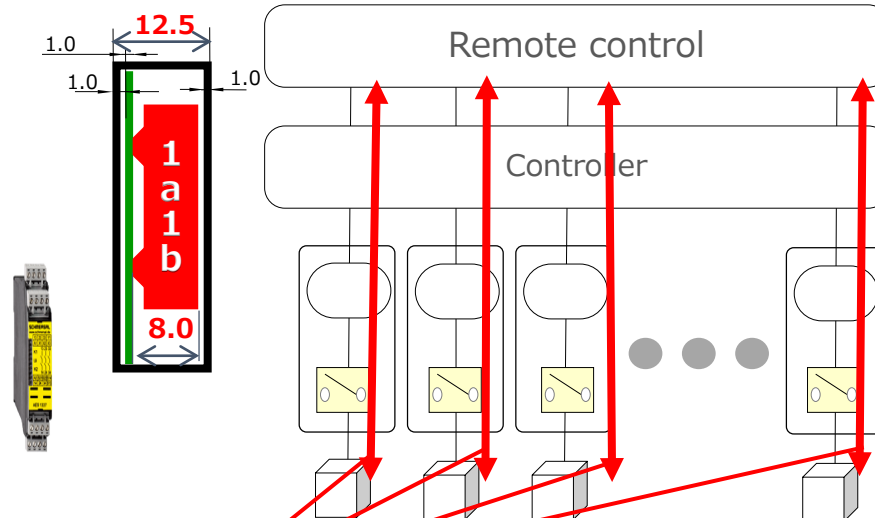
◆ Previous method (centralized control)



Components used:
Safety Relay with
four or more poles

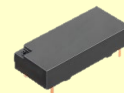


◆ Next-generation method (individualized control)



**Monitoring each
load individually**

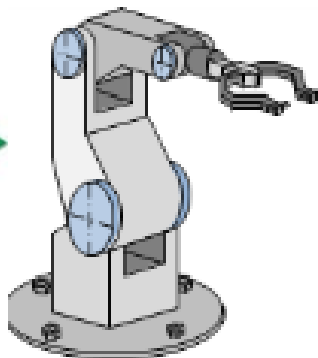
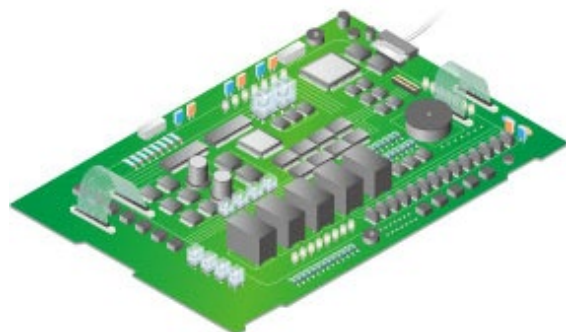
Components used:
Safety relay
1a1b



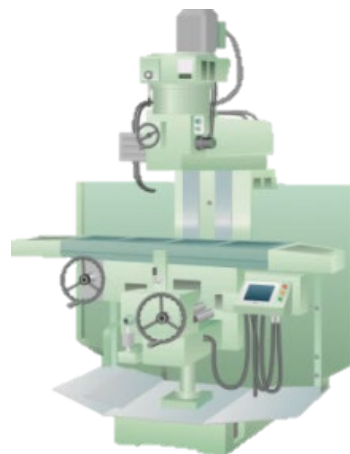
Target Market and Applications

■ Safety Circuit Boards & Industrial Equipment

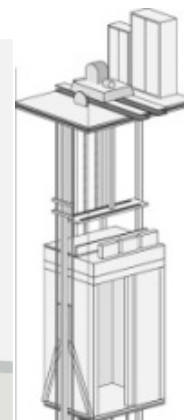
◆ Robots



◆ Machine tools



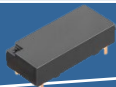
◆ Elevators



■ Safety Relay Units



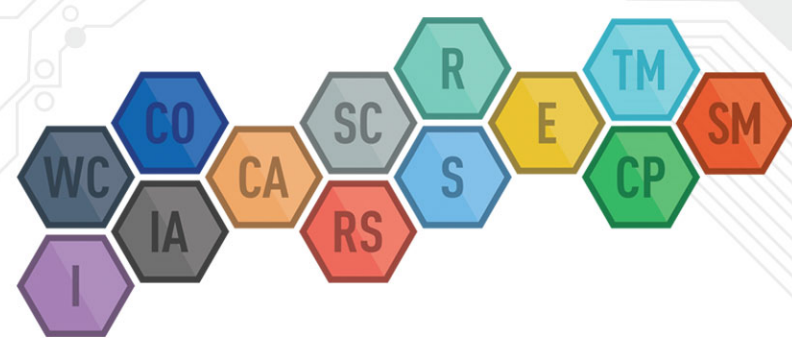
Competitor Comparison

	Panasonic	Company A	Company B
	SF-M (Flat type) 	Slim type	Slim type
Dimension	33 (W) × 14 (L) × 7.8 (H) mm	28 (W) × 6 (L) × 15.5 (H) mm	28 (W) × 12.7 (L) × 25.4 (H) mm
Assembly area	462 mm ² × 2	168 mm ² Sideways 434 mm ² + bent terminals	355 mm ²
Contact Arrangement	1a1b	1a1b	1a1b, 2c
Electrical life (Resistance load)	NO contact: 6 A/250 VAC, 100,000 ops 6 A 30 VDC 100,000 ops NC contact: 4 A/250 VAC, 100,000 ops 4 A 30 VDC 100,000 ops	6 A 250 V AC 10,000 operations	NO contact: 6A 240 V AC, 100,000 ops 6A 24 V DC 10,000 ops NC contact: 3A 240 V AC, 100,000 ops 3A 24V DC 10,000 ops
Rated operating power	270 mW	210 mW	Approx. 700 mW
Holding power	100 mW and over	-	-
Ambient temperature	-40 to +85°C	-40 to +80°C	-40 to +70°C
Insulation distance (Between contact and coil)	Form A contact: Reinforced insulation 5.5 mm/5.5 mm (clearance/creepage) Form B contact : Basic insulation 4 mm/4 mm (clearance/creepage)	-	-
Protection structure	RTII, RTIII	RTIII	RTII, RTIII





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Thank You!

SF-M Series
Safety Relays

For questions, please contact Michael Neugebauer:
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