

Safety Control Relay HR1S-AC

- 1NC or 2NC safety input type, such as E-Stops or Interlock Switches
- EN ISO 13849-1 PLe, Safety Cat 3 compliant, and EN 62061 SIL 3
- Fault diagnosis function with dual safety circuits.
- Internal relay operations can be monitored with LED Indicator.
- Finger-safe protection
- 22.5mm wide, 35mm DIN rail mounting
- UL listed, CSA certified, TÜV NORD approved



Part Numbers

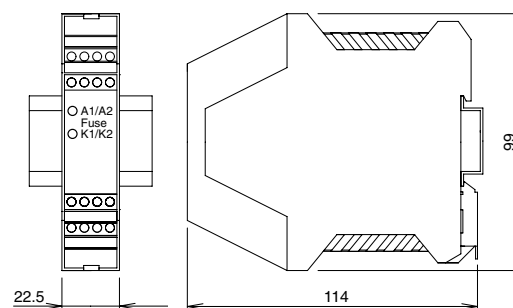
Part Numbers	Terminal Style
HR1S-AC5121	Integrated Terminal Block
HR1S-AC5121P	Removable Terminal Block

Specifications

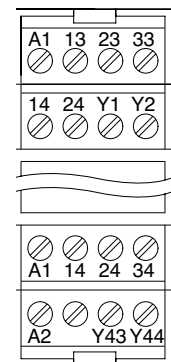
Operating Temperature	-10 to 55°C (no freezing)	
Degree of Protection	Terminal: IP20, Housing: IP40	
Rated Power Voltage	24V AC (-20 to +10%) 50/60 Hz 24V DC (±20%)	
Power Consumption	AC: 2.2 VA (24V AC) maximum DC: 1.2W (24V DC) maximum	
Overcurrent Protection	Electronic	
Control Circuit Voltage	24V	
Performance Level (PL)	e (EN ISO 13849-1)	
Safety Category	3 (EN 954-1)	
Safety Integrity Level (SIL)	3 (EN 62061)	
Response Time	100ms maximum	
Input Synchronization Time	Unlimited	
Overvoltage Category	III	
Pollution Degree	2	
Rated Insulation Voltage	300V	
Safety Outputs	Instantaneous (Stop Cat 0)	3NO
	Auxiliary Contact	1NO (transistor, PNP)
Output Contact Ratings	Safety Circuit	AC-15 C300: Ue= 240VAC, Ie=0.75A
		DC-13 Ue=24VDC, Ie=2A
	Transistor Circuit	24V/20mA
	Minimum Applicable Load	17V/10mA (initial value)
Operation Frequency	1200 operations/h maximum	
Rated Current	Safety circuit output total: 10.5A maximum	
Wire Size	HR1S-AC5121: 1 × 2.5mm ² , 2 × 0.75mm ² maximum HR1S-AC5121P: 1 × 2.5mm ² , 2 × 1.5mm ² maximum	
Weight	160g	

Use a 4A fuse (Type gL) for power fuse protection.
Use a 4A (Type gL) or a 6A fast blow fuse for output fuse protection.

Dimensions (mm)

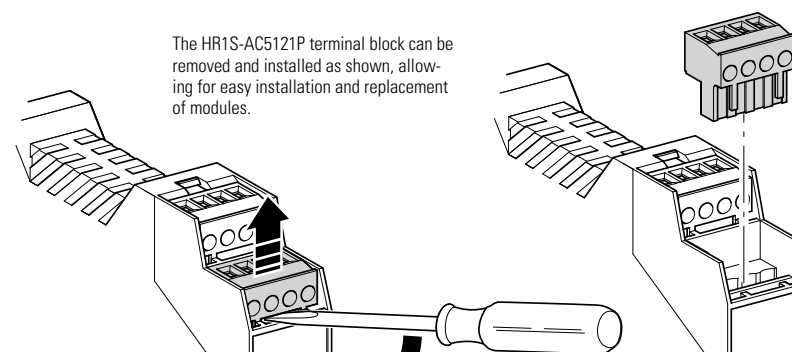


Terminal Arrangement



LED Indicator

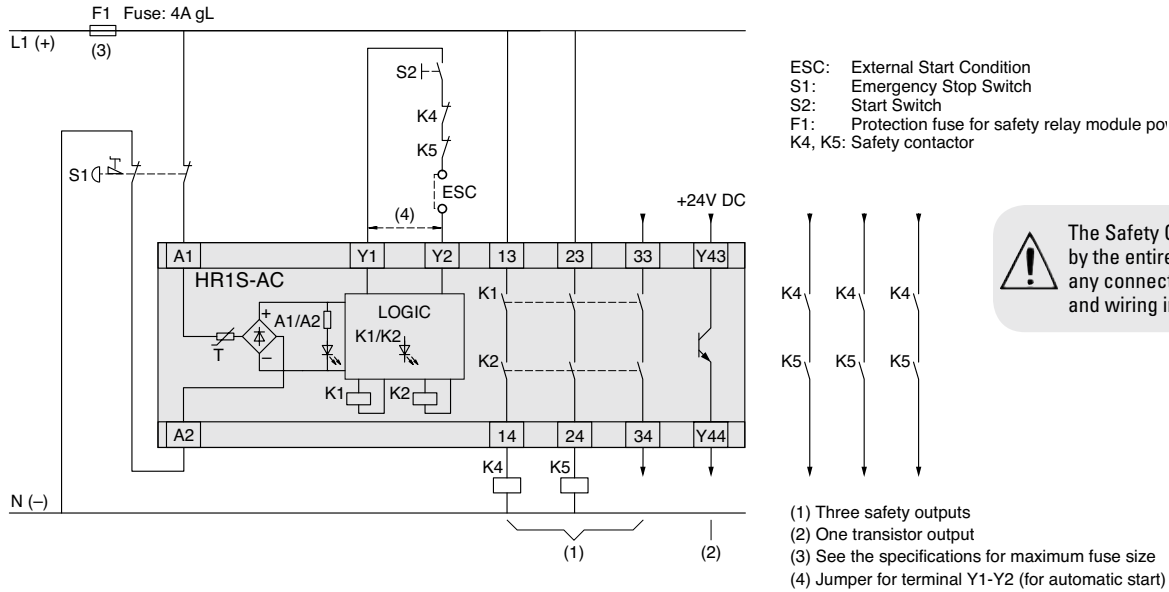
- A1/A2 Fuse: Turns on when power circuit is normal. Turns off when power is interrupted or the electronic fuse blows.
- K1: Turns on when K1 relay operates.
- K2: Turns on when K2 relay operates.



The HR1S-AC5121P terminal block can be removed and installed as shown, allowing for easy installation and replacement of modules.

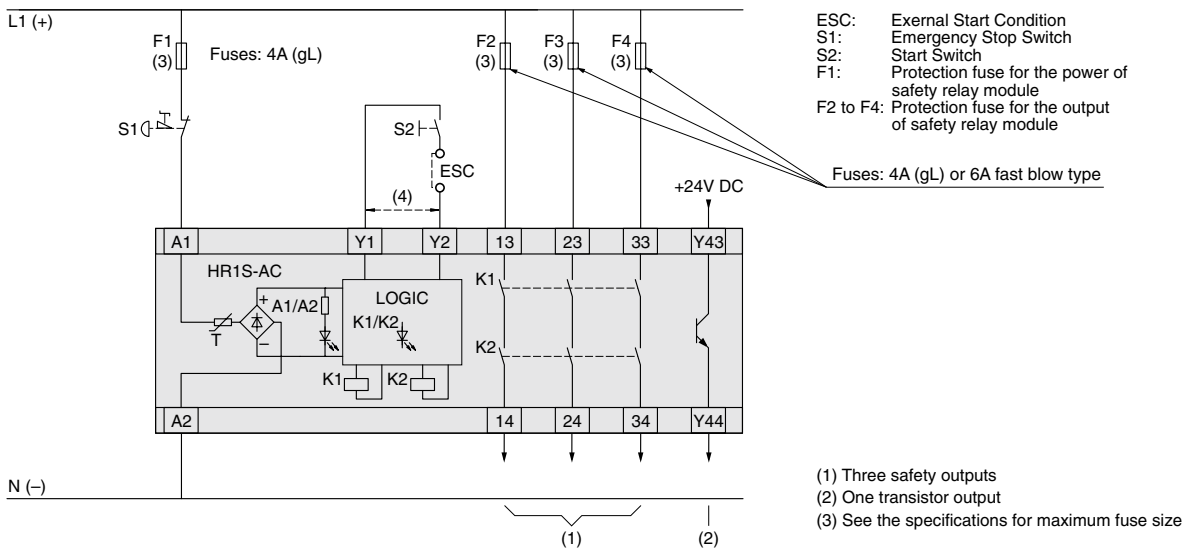
HR1S-AC Wiring Diagram

Safety Category 3 Example Circuit (using an emergency stop switch with 2NC contacts)

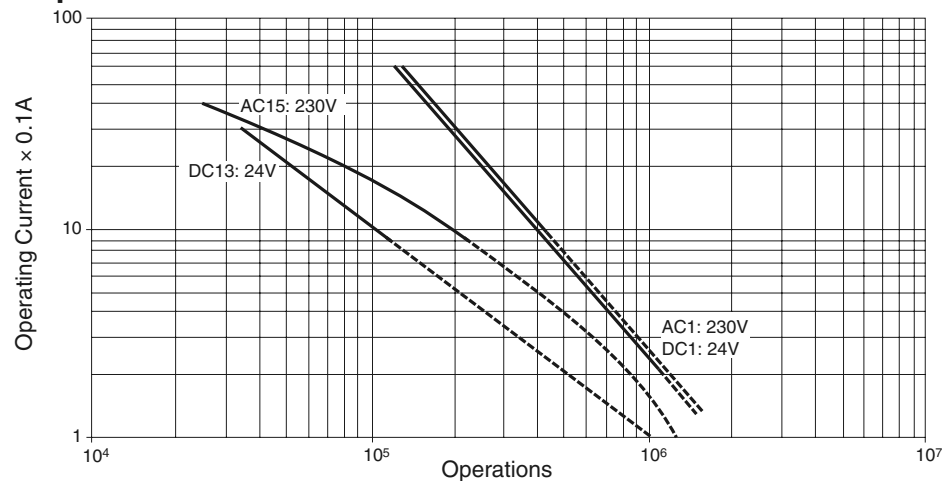


The Safety Category is achieved by the entire control system. Take any connected safety equipment and wiring into consideration.

Safety Category 1 Example Circuit (using an emergency stop switch with 1NC contact)

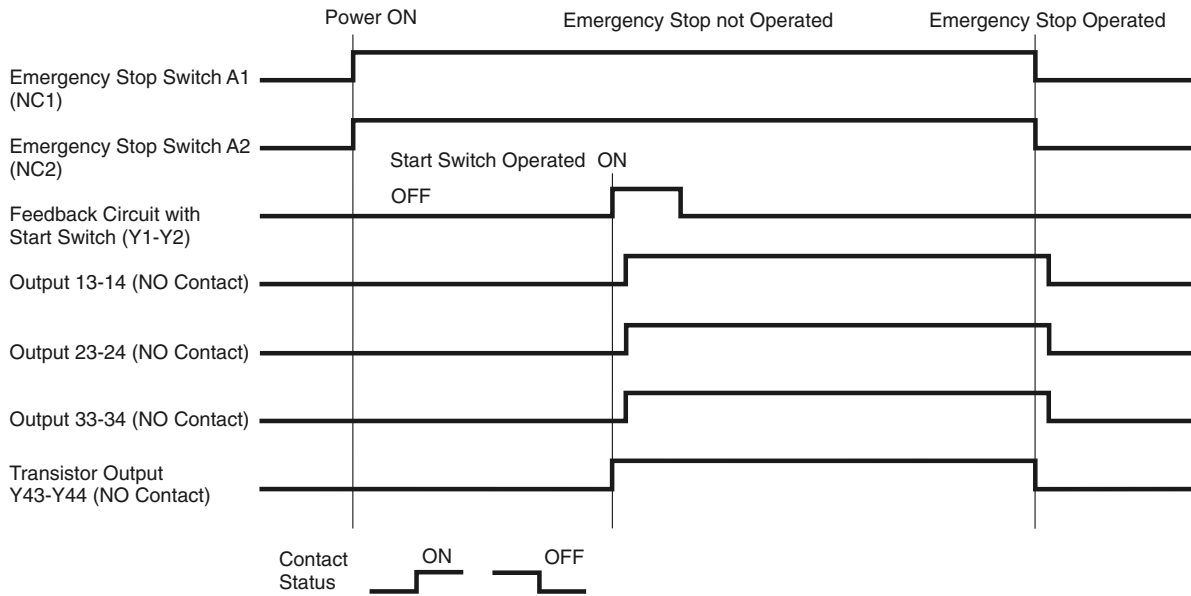


Output Contact Electrical Life

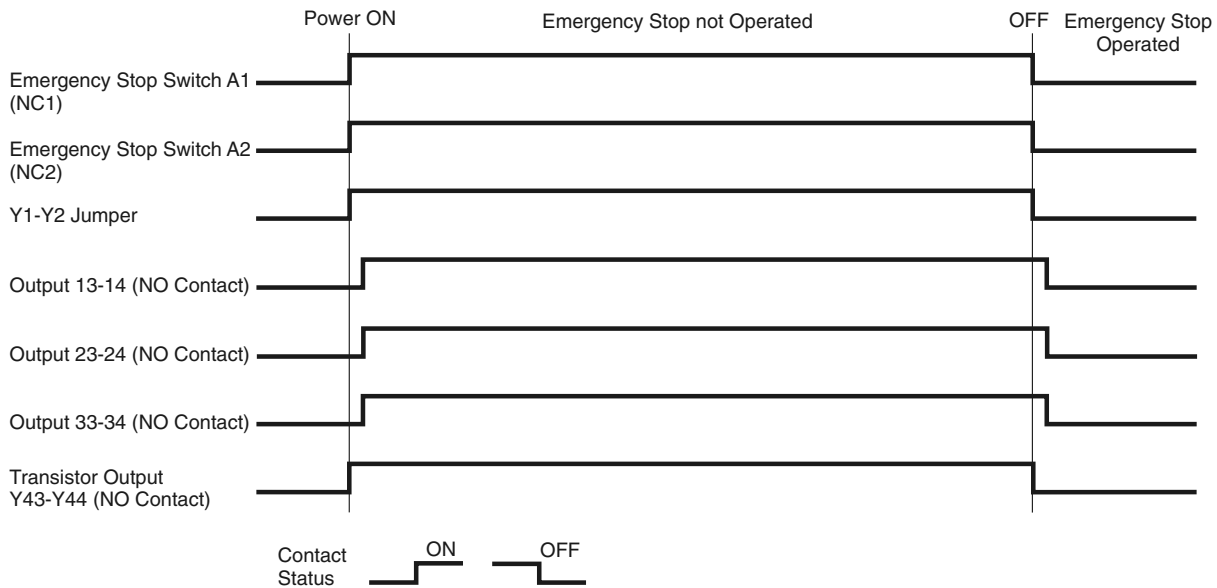


HR1S-AC Safety Relay Module Operation Chart

When Using a Start Switch



When not Using the Start Switch



Specifications and other descriptions in this document are subject to change without notice.

