



- Safety relays with performance level up to Cat.4, PLe compliant to EN/BS 13849-1
- Multifunction version with frontal trimmer for function selection
- Dedicated versions for emergency stop, light curtains and two-hand control devices
- Expansion module
- Compact design with 35mm DIN rail mounting.

### Safety relays

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**SRB... SERIES**

- 24VAC/DC auxiliary supply
- For safety control of emergency stop, safety switch and magnetic sensors
- Expansion module of safe outputs
- 35mm DIN rail mounting
- 17.8mm width.



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**SRA... SERIES**

- 24VDC auxiliary supply
- Multifunction version with frontal trimmer for function selection
- For safety control of light curtains, two-hands control devices, laser scanner and RFID
- 35mm DIN rail mounting
- 22.5mm width.

	Emergency stop	Safety switch	Magnetic sensors	Two-hand control devices	Safety devices with OSSD outputs (light curtains, laser scanner, RFID,...)	Mechanical safety interlock	Expansion module of safe outputs
<b>SRBES20</b>	●	●	●			●	
<b>SRBES31</b>	●	●	●			●	
<b>SRBEM41</b>							●
<b>SRATH21</b>				●			
<b>SRALC21</b>					●		
<b>SRASM20</b>					●		
<b>SRAMF21</b>	●	●	●	●	●	●	

## SRB... series



SRBES...



SRBEM41

**new**

Order code	Auxiliary supply voltage	Type of output contact	Function	Qty per pck	Wt
	[V]			n°	[kg]
Single function.					
<b>SRBES20</b>	24V AC/DC	2NO	Emergency stop	1	0.209
<b>SRBES31</b>		3NO+1NC	Emergency stop	1	0.230
Safe outputs expansion module.					
<b>SRBEM41</b>	24V AC/DC	4NO+1NC	Expansion module	1	0.239

### General characteristics

LOVATO Electric safety relays are designed for applications up to Category 4 and performance level up to PLe according to EN/ISO/BS 13849-1.

The SRB ... safety relays are designed in order to monitor and control safety circuits in applications with:

- Emergency stops
- Security accesses
- Magnetic safety switches
- Safety limit switches
- Electromechanical interlocks.

They are also used to safely control the circuits for lift cabin leveling and inspection of the lifting pit, according to EN/BS 81-20 and EN/BS 81-50 lift standards.

SRBEM41 is an expansion module to extend the number of safe outputs.

### Main characteristics

- Auxiliary supply voltage: 24VAC / DC
- 35mm DIN rail mounting (IEC / EN / BS 60715)
- Compact size: 17.8mm wide
- Double or single channel operation
- Control up to 3 NO safety outputs with electromechanical relay with forced guidance
- Start / reset operating mode (manual, automatic or monitored manual)
- Diagnostics of the safety circuit through indications of LEDs for power supply, safety input status and status of the safety outputs
- The short circuit between the two input channels is detected
- In the event of a fault, the safe outputs are deactivated (contacts opened)
- 1 NC auxiliary output (SRBES31) that can be used for remote status indication
- Removable screw terminal connection
- Front protection degree: IP40
- Terminal protection degree: IP20.

### Certifications and compliance

Certifications obtained: cULus, TUV.

Compliant with standards: Cat. 4, PLe according to EN/BS 13849-1, EN/BS 81-20, EN/BS 81-50 (SRBES20 and SRBES31 only).

## SRA... series



SRAMF21

**new**

Order code	Auxiliary supply voltage	Type of output contact	Function	Qty per pck	Wt
	[V]			n°	[kg]
Single function.					
<b>SRATH21</b>	24VDC	2NO+1PNP	Two-hand control devices	1	0.150
<b>SRALC21</b>	24VDC	2NO+1PNP	Devices OSSD	1	0.150
<b>SRASM20</b>	24VDC	2NA	Devices OSSD	1	0.150
Multifunction.					
<b>SRAMF21</b>	24VDC	2NO+1PNP	Multi-function	1	0.150

### General characteristics

The LOVATO Electric SRA... safety relays are designed in order to monitor and control safety circuits in applications with:

- SRATH21: monitoring of two-hand control devices
- SRALC21: monitoring of safety devices equipped with OSSD (light curtains, laser scanner, RFID)
- SRASM20: monitoring of devices equipped with OSSD and integrated safety functions.

The SRAMF21 multifunction safety relay offers the possibility of having all the safety functions of SRB series and the three SRA codes above in one device. This is achieved by simply selecting the desired function using the dedicated frontal trimmer.

The SRAMF21 multifunction safety relay monitors and controls safety circuits in applications with:

- Emergency stops
- Security accesses
- Magnetic safety switches
- Safety limit switches
- Electromechanical interlocks
- Input from OSSD (for ESPE and RFID), automatic restart or monitored manual restart
- Command of two-hand control devices
- Control for type 2 photocells, manual or automatic restart.

### Main characteristics

- Auxiliary supply voltage: 24VDC
- 35mm DIN rail mounting (IEC / EN / BS 60715)
- 1 PNP output for system monitoring
- 1 feedback input from external contactors
- 1 test input (for light curtains)
- Alarm diagnostics through LED flashing
- Front protection degree: IP20
- Terminal protection degree: IP20.

### Certifications and compliance

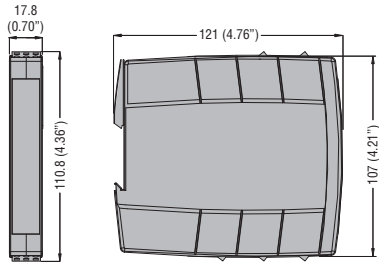
Certifications (pending): cULus, TUV.

Compliant with standards: Cat. 4, PLe according to EN/BS 13849-1.

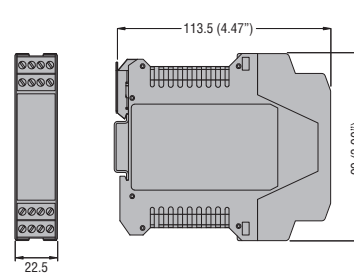
# 10 Safety Relays

Dimensions [mm (in)]  
Wiring diagrams

## SRBES20 - SRBES31 - SRBEM41



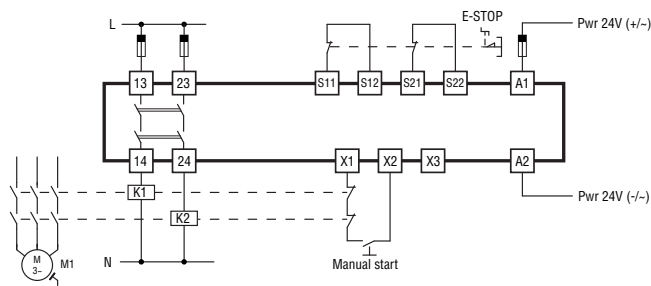
## SRATH21 - SRALC21 - SRASM20 - SRAMF21



## Wiring diagrams

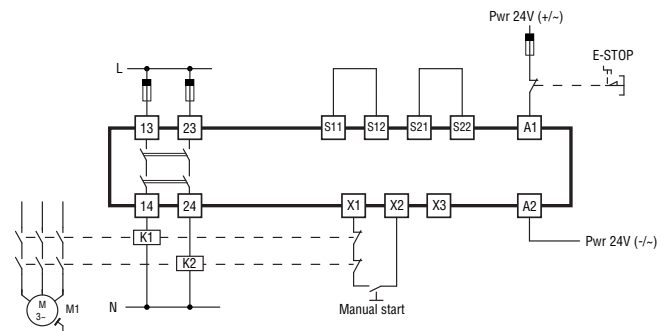
### SRBES20

Double channel mode, manual start



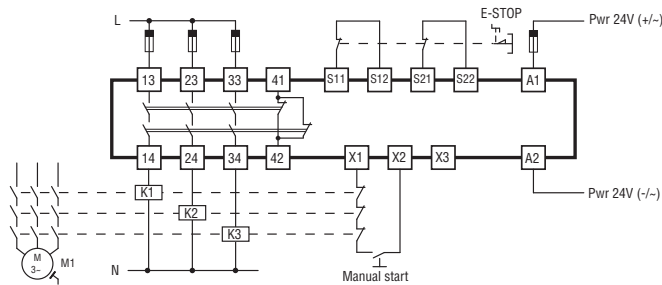
### SRBES20

Single channel mode, manual start



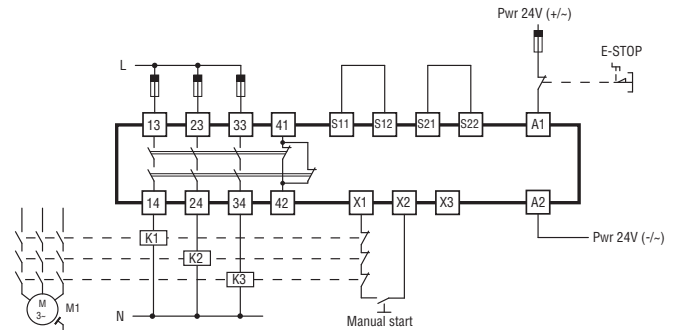
### SRBES31

Double channel mode, manual start



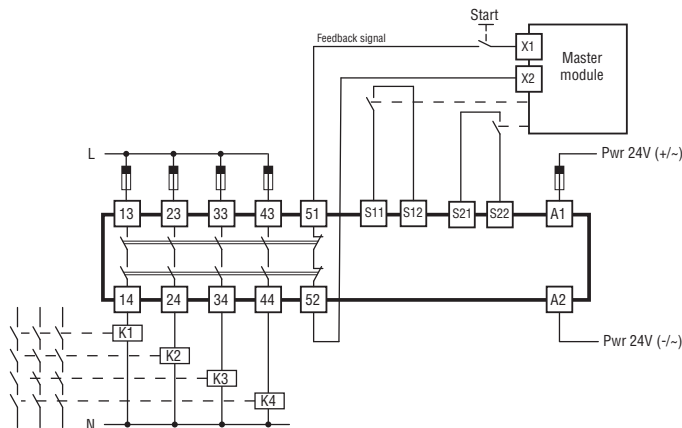
### SRBES31

Single channel mode, manual start



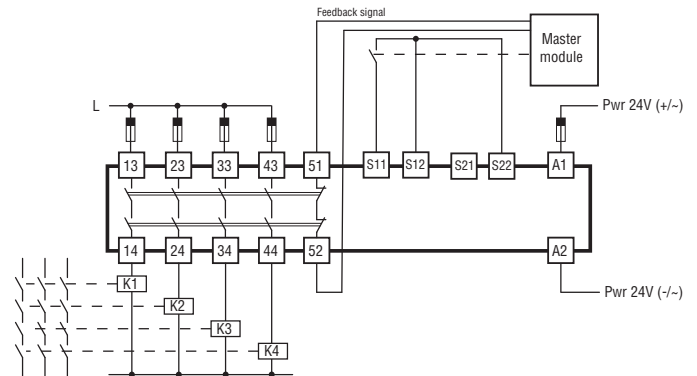
### SRBEM41

Double channel mode



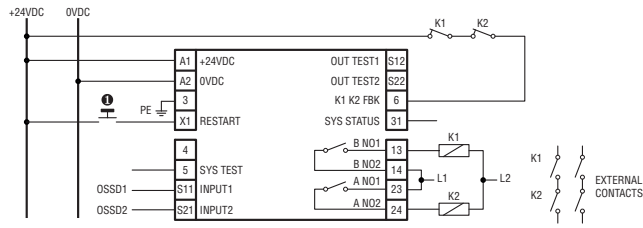
### SRBEM41

Single channel mode

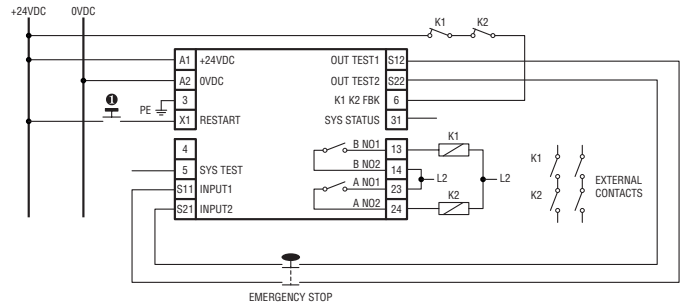
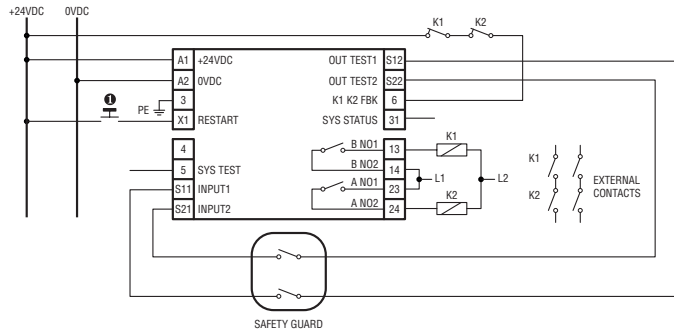


### SRAMF21

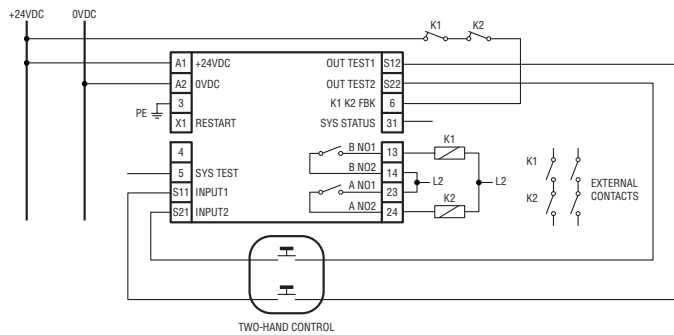
1A, 1C mode: OSSD inputs



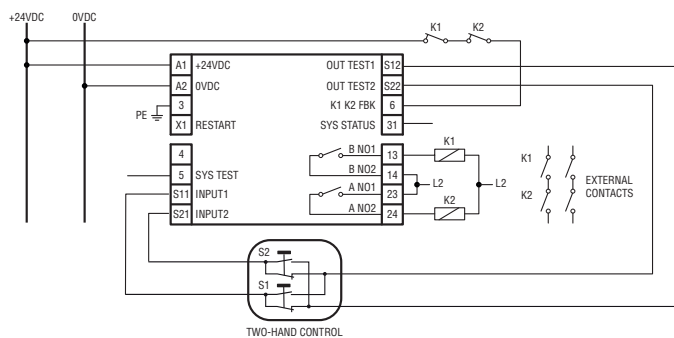
2A, 2M, 2C mode: security accesses and emergency stops.



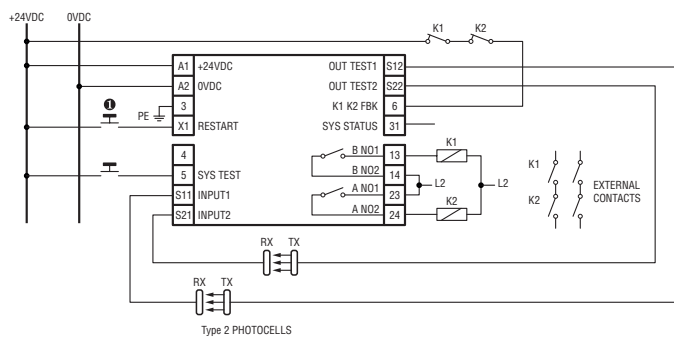
Mode 3A: two-hand control devices



Mode 3C: two-hand control devices, changeover contacts



Mode 4A, 4C: light curtains



ⓘ Not necessary when used in automatic mode.

# 10 Safety Relays

## Technical characteristics

Type	SRBES20	SRBES31	SRBEM41	SRATH21	SRALC21	SRASM20	SRAMF21
<b>AUXILIARY SUPPLY</b>							
Nominal auxiliary voltage supply	24VAC/DC			24VDC			
Operating range	22...26VDC, 20.4...27.6VAC			19...29VDC			
Frequency range	50-60Hz			-			
Overvoltage category	III						
Insulation voltage	4kV						
Protection	Short circuit with PTC			Signaling output protected from overload		-	Signaling output protected from overload
<b>INPUTS</b>							
Number	2						
Resistance input circuit	Max 1k $\Omega$			-			
Input current	Typical 5mA			Typical 4.3mA			
Input voltage	-	0-35VDC		0-30VDC			
<b>OUTPUTS</b>							
Number of safe outputs NO	2	3	4	2	2	2	2
Number of safe outputs NC	-	1	-	-	-	-	-
Number of feedback outputs	-	-	1NC	1PNP	1PNP	-	1PNP
Type	Voltage free contacts, relays with forced guided contacts			Relays with forced guided contacts			
Ratings	AC1 250V: 6A - 2000VA AC15 230V: 3A - DC1 24V: 6A DC13 24V: 2.5A			AC1 250V: 6A - 2000VA AC15 230V: 5A DC13 24V: 2A			
UL 508 ratings	Pilot duty: B300 - R300			Pilot duty: B300 - Q300			
Mechanical life	>10 <sup>7</sup> operations						
Electrical life AC1 at 360 commutations/h	10 <sup>5</sup> operations						
<b>SAFETY PARAMETERS</b>							
ISO 13849-1 security category	Cat. 4						
ISO 13849-1 performance level	PLe						
<b>AMBIENT CONDITIONS</b>							
Degree of protection	IP40 on front, IP20 on terminals			IP40 on front, IP20 on terminals			
Degree of pollution	2						
Operating temperature	-25...+60°C			-25...+55°C			
Storage temperature	-30...+70°C						
Relative humidity	R.H. $\leq$ 95%						
<b>CERTIFICATIONS AND COMPLIANCE</b>							
Certifications	cULus, TUV						
Compliance	Cat. 4, PLe according to EN/BS 13849-1, EN/BS 81-20, EN/BS 81-50		Cat. 4, PLe according to EN/BS 13849-1	Type 4 according to EN/BS 61496 Cat. 4, PLe according to EN/BS ISO 13849-1		-	Type 4 according to EN/BS 61496 Cat. 4, PLe according to EN/BS ISO 13849-1