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PSR – Phoenix Safety Relay
PSR-THC4

– **Two-hand and safety door control module according to EN 574 Type IIIC**

– **Safety Category 4, EN 954-1**

– **Plug-in screw-cage or spring-cage terminal blocks**

– **Two-channel circuit**

– **Safe isolation**

– **Cross-circuit detection**

– **Housing width 22.5 mm (0.886 in.)**

– **Two enable contacts**

– **One signaling contact**

– **Approvals:** cULus Listed;

1. Short Description

The PSR-...-24UC/THC4/2x1/1x2 safety relays can be used to monitor two-hand control systems according to EN 574 Type IIIC and safety doors.

The module monitors the simultaneity of both inputs in < 0.5 seconds. In this way, up to Safety Category 4 can be achieved in safety circuits according to VDE 0113 Part 1 and EN 954-1. External contactors or expansion modules can be monitored. The module has two enable current paths and one signaling current path with Stop Category 0 according to EN 60204-1/ VDE 0113 Part 1.

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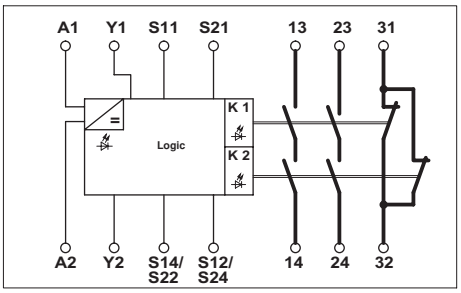
2. Technical Data



PSR-THC4

M 3 7/10

Housing width 22.5 mm (0.886 in.)

	solid [mm²]	flexible [mm²]	AWG
Connection data:	0.2 - 2.5	0.2 - 2.5	25 - 14
Stripping length:	Screw-cage version 7 mm (0.28 in.)		
	Spring-cage version 10 mm (0.39 in.)		

Description		Type	Order No.	Pcs. Pkt.
Safety relay, Category 4	Screw-cage	**PSR-SCP-24UC/THC4/2X1/1X2**	**29 63 72 1**	1
	Spring-cage	**PSR-SPP-24UC/THC4/2X1/1X2**	**29 63 98 3**	1

Technical Data

Input Data		
Nominal input voltage U_N		24 V AC/DC
Permissible range		0.85 - 1.1 x U_N
Typical current consumption at U_N		125 mA AC, 60 mA DC
Voltage at input, start, and feedback circuit		24 V DC, approximately
Typical response time (K1, K2) at U_N		50 ms
Typical release time (K1, K2) at U_N		20 ms
Simultaneity input 1/2		< 0.5 s
Recovery time		< 1 s
Output Data		
Contact version		2 enable current paths, 1 signaling current path
Contact material		Silver stannic oxide, gold-flashed ($AgSnO_2$ 0.2 µm Au)
Maximum switching voltage		250 V AC/DC
Minimum switching voltage		15 V AC/DC
Limiting continuous current		6 A (Form A contact/Form B contact)
Maximum inrush current		6 A
Minimum switching current		25 mA
Maximum shutdown power		Ohmic load / Inductive load
		τ = 0 ms / τ = 40 ms
	24 V DC	144 W / 42 W
	48 V DC	288 W / 42 W
	110 V DC	110 W / 42 W
	220 V DC	88 W / 42 W
	250 V AC	1500 VA
Minimum switching power		0.4 W
Mechanical life		10^7 cycles, approximately
Breaking capacity according to	Cycles: 360/h	24 V (DC 13) 4 A
DIN EN 60947-5-1/VDE 0660 Part 200	3600/h	24 V (DC 13) 2.5 A
Short-circuit protection of the output circuits, external		6 A fast-blow

General Data

Permissible ambient operating temperature	-20°C to +55°C (-4˚F to +131˚F)
Nominal operating mode	100% ED
Degree of protection	According to DIN EN 60529/VDE 0470 Part 1
- Housing	IP 40
- Connection terminal blocks	IP 20
- Mounting location	IP 54, minimum
Mounting position	Any
Mounting	Can be mounted without spacing
Air and creepance distances between circuits	According to DIN EN 50 178:1998-04, safe isolation, reinforced insulation
Impulse voltage withstand level	6 kV
Degree of pollution	2
Surge Voltage Category	III
Dimensions (W x H x D)	22.5 mm x 99 mm x 114.5 mm (0.886 x 3.898 x 4.508 in.)
Cable cross section	0.2 - 2.5 mm^2 (25 - 14 AWG)
Housing material	Polyamide PA, not reinforced

Note: When operating relay modules the operator must meet the requirements for emitted interference for electrical and electronic equipment (EN 50081-2) on the contact side and, if required, take appropriate measures.

3. Connection Notes and Safety Instructions

3.1. Safety Instructions

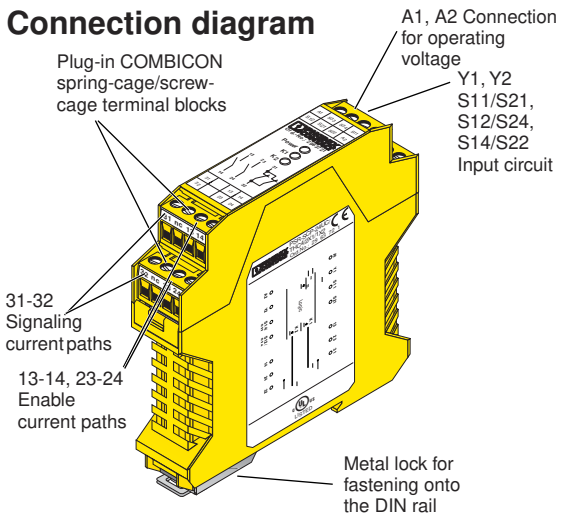
– Please observe the safety regulations of electrical engineering and industrial safety and liability associations.
– Disregarding these safety regulations may result in death or serious damage to persons or property.
– Before working on the device, disconnect the power.
– Startup, mounting, modifications, and upgrades should only be carried out by a skilled electrical engineer.
– Protective covers must not be removed when operating electrical switching devices.
– During operation, parts of electrical switching devices carry hazardous voltages.
– Keep the instruction sheet in a safe place.
– In the event of an error, replace the device immediately.

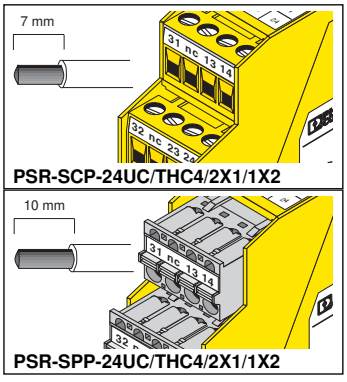
3.2. Connection Notes

To maintain the UL, use copper cables, which are designed for operating temperatures of 75°C (167˚F).

For reliable and safe contacts, strip the connector ends accordingly.

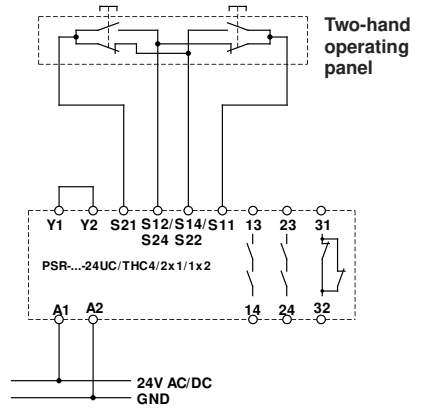
Connection diagram



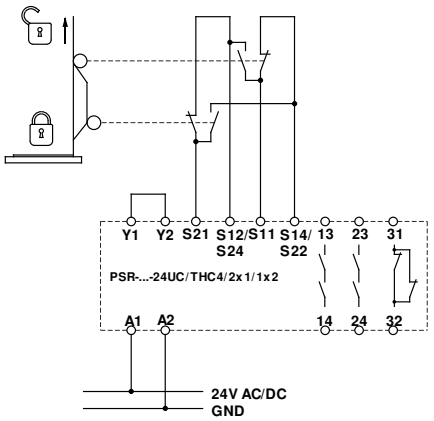


4. Connection Examples

Two-hand control system with equality monitoring < 0.5 s, corresponds to EN 574 Type IIIC, suitable for up to Safety Category 4.



Monitoring of controlling isolating safety devices according to EN 1088 with equality monitoring < 0.5 s, suitable for up to Safety Category 4.



Two-hand control system with equality monitoring < 0.5 s and monitored contact expansion, corresponds to EN 574 Type IIIC, suitable for up to Safety Category 4.