

EMERGENCY STOP SWITCH

PRS

91.063 293.xxx



APPLICATION

Kiepe pull-rope emergency stop switches type PRS are used as emergency stop devices as supplementary safety measures on fixed belt conveyors. The pull rope is symmetrically tensioned on both sides of the red release lever.

The exclusive use of glass fiber reinforced plastic and stainless steel is designed especially for applications in harsh environments such as potassium salt and rock salt factories, seaports and urea, recycling and composting facilities.

With the pull-rope system functionally aligned, the emergency stop signal can be triggered over a distance of up to 100 m for each switch.

Kiepe pull-rope emergency stop switch types PRS comply with Machinery Directive 2006/42/EC.

They must only be used in control electrical circuits.

The PRS glass fiber reinforced plastic housing offers space for 2 NC and 1 changeover contact. The versions PRS 101/102 use also a NO contact for a signal lamp. Only one contact of each changeover contact must be used for auxiliary circuit switches.

Taking into consideration the safety data and maintenance recommendations, the pull-rope emergency stop switch type PRS can be used in safety circuits in accordance with **DIN EN ISO 13849 up to Performance Level d (PL d)**.

FUNCTION

The pull-rope emergency stop switch is actuated by a pull rope **1** connected on both sides of the red release lever.

The switching of the pull rope switch is controlled by a cam and supported by a spring function (snap action). The self-cleaning contacts are actuated simultaneously and it may be carried out a cross comparison of the contacts of an external control unit.

The emergency stop signal is performed with positive-making normally closed (NC) contacts in accordance with the closed circuit principle.

After the emergency stop function is triggered, the switching mechanism is locked in the shut-off position "0". The signal lamp in the lid of PRS 101 or 102 is switched on. When the blue reset lever is actuated in switch position "1", the switching contacts are reactivated, the signal lamp is off and the conveyor belt is prepared for being turned back on again.

Note: Resetting the pull rope emergency stop switch must not cause in start up the conveyor system.

TECHNICAL DATA

Designation	Pull-rope emergency stop switch type PRS – emergency stop device with latching function	
Type of actuation	Bidirectional (double-side)	
Complies with	DIN EN 60947-5-5; IEC 60947-5-5	
Suited for	Control circuits in accordance with DIN EN 60204 -1	
Pull-rope length, approved	2 x 50 m (typically)	
Mechanics		
Material	Enclosure : release lever: reset lever:	Thermoplast resin, yellow (similar RAL 1004) red (similar RAL 3000) blue (similar RAL 5010)
Mounting	2 x M6	
Actuation force	20 N ± 5 N	
Net weight (typic)	480 g	
Electrics		
Switching system	„Snap action“ micro switches (SPDT), positive opening according to IEC 60947-5-1	
Cable entry	Threaded holes 3x M25 x 1.5 with each dummy screws, 1x cable gland enclosed (sealing area Ø 9 mm to Ø 17 mm)	
Utilization category	AC-15: DC-13:	230 V / 1.5 A 24 V / 2 A
Connection cross section (max.)	2.5 mm ²	
Protective conductor connection	Protection class II, Protective insulation	
Rated insulation voltage U _i	250 V	
Rated impulse withstand voltage U _{imp}	2.5 kV, degree of pollution III	
Conventional thermal current I _{th}	6 A	
Signal lamp	LED in the lid	
Voltage U _b for signal lamp	PRS 101: 230 V AC PRS 102: 24 V DC	
Current consumption of lamp	20 mA	
Ambient conditions in accordance with DiN EN 60947-5-5		
Permissible ambient temperature	- 25 °C ... + 70 °C	
Protection rating (EN 60529)	IP 67	

Reliability and Safety Data		
Electrical reliability	DC-13: 24 V / 2 A	B10d = 200,000 cycles
	AC-15: 230 V / 1.5 A	B10d = 840,000 cycles
Safety classification Depending upon system architecture	DIN EN ISO 13849-1	Up to PLd
	DIN EN 62061	Up to SIL2
Mechanical reliability		200,000 cycles

SELECTION TABLE

Switch type	Contact configuration			Integrated signal lamp	Membrane	Order number
	N.C.	SPDT	N.O.			
PRS 001	2	1	-	-		91.063 293.001
PRS 101	2	1	(1)	LED 230 V AC		91.063 293.101
PRS 102	2	1	(1)	LED 24 V DC		91.063 293.102
PRS 901	2	1	-	-	in cable gland	91.063 293.901

Spare parts and accessories

PA cable gland M25	113.51.00.20.10
PA-Cable gland M25 with Membrane	on request
Dummy screw M25	113.43.87.20.01
Replacement lid PRS 001	94.059 408.001
Replacement lid PRS 101 with LED-Block 230 V AC	93.059 431.001
Replacement lid PRS 102 with LED-Block 24 V DC	93.059 431.002
Mounting Kit, Steel, Support distance 2,5 m, 2 x 50 m	95.064 096.101
Mounting Kit, Stainless Steel AISI 304, Support distance 2,5 m, 2 x 50 m	95.064 096.501
Quick Clamp - Mounting Kit, Stainless Steel AISI 304, Support distance 3,5 m, 2x100m	95. 303 191.502
Fixing Foot S2	96.038 986.120

MOUNTING

Pull-rope emergency stop switches of types PRS are centered between the anchor hooks **3** of the pull-rope system and each fastened to the substructure in installation position with 2x M6 screws.

Electrical connection is performed with the device open using the screwed cable gland included in the delivery, directly on the terminal block [X10] to [X22] (see the connection drawings).

The signal lamp of DC-Variant PRS 102 can be connected without regarding the polarity of the voltage.

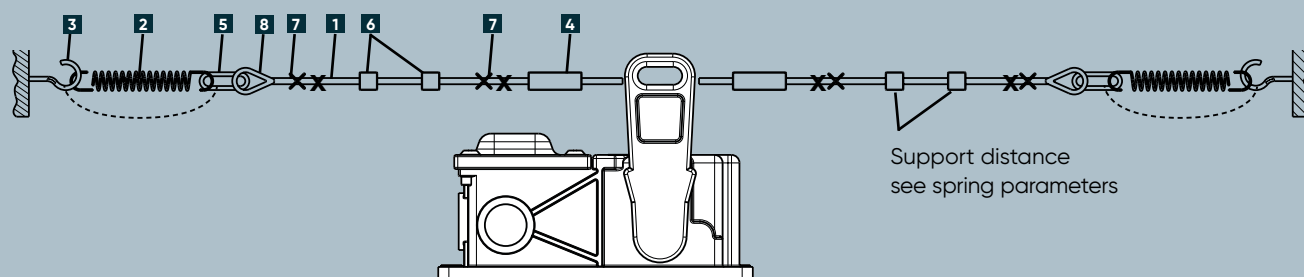
The pull-rope **1** is tensioned by tension springs **2** between the anchor hooks **3** and fastened onto the red release lever.

After the tension springs **2** have been adjusted, the actuation force and path for triggering the switch must be tested to ensure compliance with specified requirements.

Note:

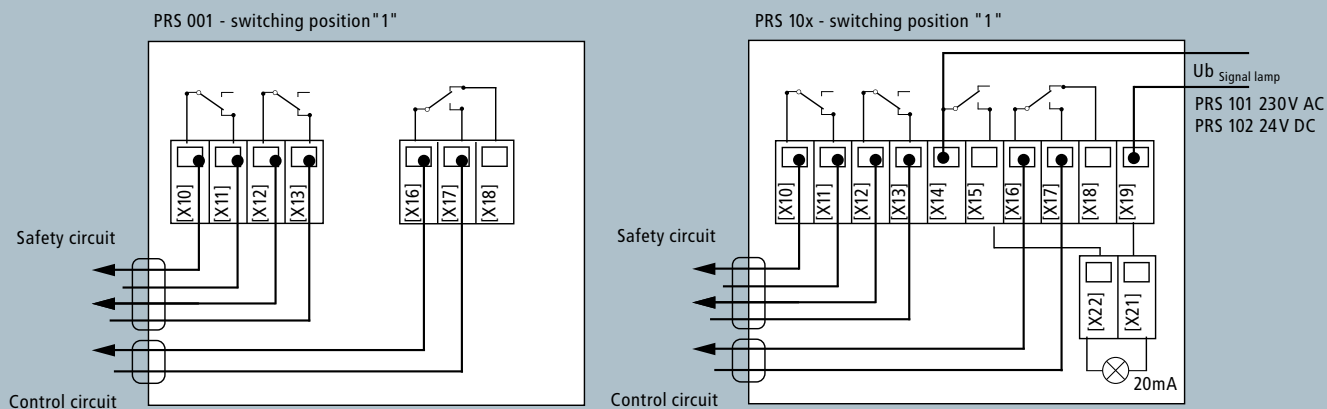
The Kiepe tension springs are designed for pull rope systems with Kiepe devices at recommended temperature changes in a straight installation. Deviations from that may need other spring design or adjusted tensioning for wire break detection.

MOUNTING DIAGRAM



- | | | |
|-------------------------|-----------------------|---------------------|
| 1 Pull rope | 4 Turnbuckle | 7 Clamp (2x) |
| 2 Tension spring | 5 Quick link | 8 Thimble |
| 3 Anchor hook | 6 Rope support | |

CONNECTION DRAWING



DIMENSIONS

