kiepe.INDUSTRY

EMERGENCY STOP SWITCH

HEN 22x/23x WITH SAFETYBUS

 # 91.043 450.xxx

APPLICATION

Kiepe pull-rope emergency stop switches type HEN 22x and 23x are SafetyBus variants of the proven Kiepe pull-rope emergency stop switch type HEN and are used in accordance with the requirements of EN 620 and BGI 710 and in compliance with DIN EN ISO 13850 as emergency stop devices to be actuated on both sides as a supplementary protective measure on belt conveyor systems.

With the functionally coordinated ratchet system, the emergency stop signal can be triggered over a distance of up to 2x 125 m per switch.

The emergency stop signal is transmitted to a safety relay via a 2-wire bus using a SafetyBus module. Signal transmissions over long distances can thus be realized economically.

Kiepe pull-wire emergency stop switches type HEN 22x and 23x are compliant with the Machinery Directive 2006/42/EC and the EMC Directive 2014/30/EU.

They may only be used in combination with Dupline® safety relays in control circuits and require a Dupline® bus signal generated by a channel generator for power supply. (www.dupline.de)

The HEN aluminum housing of types HEN 22x and 23x is equipped with a positive opening contact that supplies the input signal for the SafetyBus.

Taking into account the safety data and maintenance recommendations, the pull-rope emergency stop switches type HEN with SafetyBus module can be used in safety circuits in accordance with DIN EN ISO 13849 up to Performance Level e (PL e).

FUNCTION

The pull-rope emergency stop switch is actuated by means of a pull rope, which is connected to the red release lever on both sides. The switching device of the pull-rope emergency stop switch is positive-locking and is supported by a snap-action function. The emergency stop signal is implemented with a positively actuated NC contact that changes the status of the SafetyBus module.

Each SafetyBus module is supplied, clocked and synchronized by the signal of a channel generator and occupies two addresses. The signals on the addresses are required for safety monitoring via a safety relay. This detects errors on the bus, discrepancies in the signal output and the signal change.

SafetyBus modules and safety relays must be coordinated and programmed before installation.

After the emergency stop function is triggered, the switching device locks in the "0" switch-off position.

By actuating the reset lever in switching position "1", the switching contact is closed again and the bus module releases the safety relay again.

Resetting the pull-rope emergency stop switch must not cause the conveyor system to start up.

TECHNICAL DATA

Designation	Pull-rope emergency stop switch type HEN 22x and 23x Emergency stop device with latching with Safetybus for safety circuit	
Type of actuation	Bidirectional (double-side)	
Complies with	EN 60947-5-5; EN 61000 -6-3, EN 61326-3-1	
Suited for	Control circuits in accordance with DIN EN 60204-1	
Mechanics		
Enclosure	Aluminum	
Finish	PU 2K-paint Enclosure – yellow (RAL 1004), release lever – red (RAL 3000), reset lever – blue (RAL 5010)	
Mounting	2 x M8	
Installation length pull rope	2 x 125m (depending on the design of the external tension springs and the maximum temperature fluctuation)	
Actuation force	30 N ± 10 N	
Weight	1.7 kg	
Electrical system (safety circuit)		
Switching system	1 positive opening NC contact with gold contacts, self-cleaning Signal transmission via Dupline® SafetyBus module	
Cable entry (included in scope of supply)	2 x M25 x 1,5, with red transport lock (1x screwed cable gland: sealing area Ø 11 mm to Ø 16 mm; 1x dummy screw)	
Utilization category	AC-15: 230 V / 6 A DC-13: 125 V / 0,8 A DC-13: 24 V / 2 A	
Connection cross section (max.)	2.5 mm^2	
Protective conductor connection	In the casing; M4	
Rated insulation voltage U_i	400 V	
Rated impulse withstand voltage U_{imp}	2.5 kV, degree of pollution III	
Conventional thermal current I_{th}	16 A	
Ambient conditions in accordance with DIN EN 60947-5-5		
Permissible ambient temperature	–25 °C...+70 °C (possible in operation down to -40°C)	
Protection rating (EN 60529)	IP 67	
Reliability and Safety Data		
Safety classification Depending upon system architecture	DIN EN ISO 13849 -1 (up to PLd) DIN EN 62061 (up to SIL 2)	
Electrical Reliability	at DC-13: 24 V / 2 A at AC-15: 230 V / 6 A	B10d > 25.000 actuations B10d >25.000 actuations

SELECTION TABLE

Type	SPDT postitive opening ⊖	Dupline® SafetyBus module	Extended temperature range -40°...+70°	Ordering code
Prepared for Dupline® SafetyBus module				
HEN 221	1			91.043 450.221
HEN 222	2			91.043 450.222
HEN 421	1		x	91.043 450.421
With Dupline® SafetyBus module				
HEN 231	1	x		91.043 450.232
HEN 232	2	x		91.043 450.232
HEN 431	1	x	x	91.043 450.431

Note:
The devices fullfill the requirements of the bus module manufacturer for the safe operation of its SafetyBus module.

Spare parts and accessories:	
Screwed cable gland M25 x 1.5 (sealing area 11 mm to 16 mm)	113.52.02.20.01
Dummy screw M25 x 1.5	113.52.87.20.02
Cover including seal and screws	93.066 839.004
Dupline® SafetyBus module incl. connector	95.301 772.001
Programming adaptor for SafetyBus module (8 pole, 200 mm)	94.065 083.005
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, Steel, Support distance 3,5 m, 2x100m	95. 303 191.101
Fixing Foot S2	96.038 986.120
Bus supply and operating components	on request

MOUNTING

Pull-rope emergency stop switches of type HEN 22x or 23x are each fastened to the substructure with 2 M8 screws in the installation position in the middle between the anchor hooks of the pull-rope system (see mechanical installation diagram).

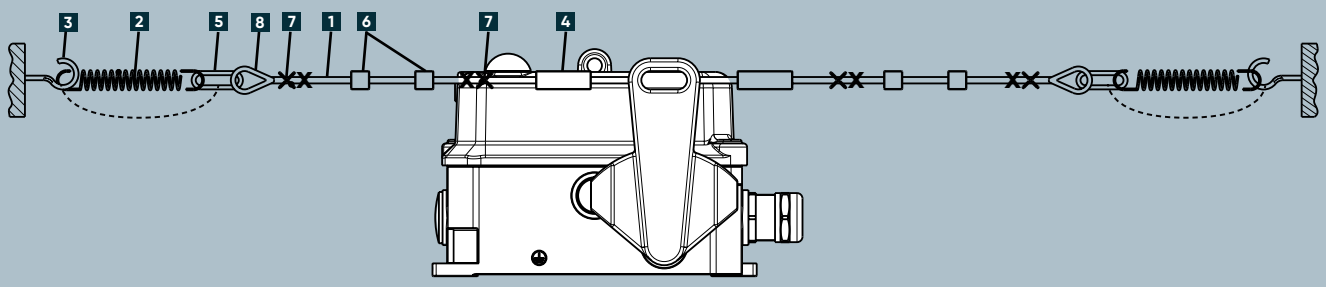
The SafetyBus module must be programmed before the electrical installation. Programming is carried out in accordance with the Dupline® Carlo Gavazzi specifications (www.dupline.com) After programming, the 2-wire bus cable is electrically connected to the connection terminals in the pull-rope emergency stop switch using the cable gland included in the scope of delivery.

The pull rope is tensioned with tension springs between the anchor hooks and attached to the release lever. After adjusting the tension springs, the actuating force and actuating travel for triggering the switch must be checked for compliance with the specified requirements and adhered to.

Note:
A channel generator and a safety relay are required for proper operation and to supply the bus modules. Contact via (www.dupline.com)

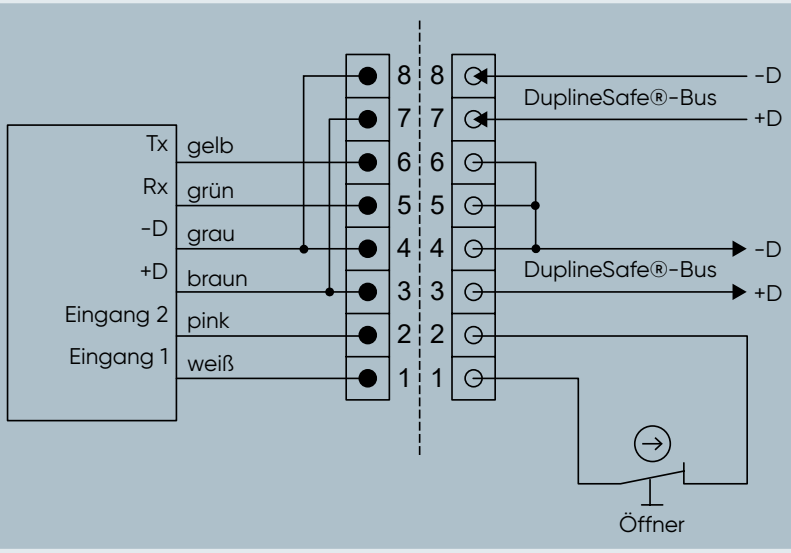
The tension springs are designed for cable systems with Kiepe devices at recommended temperature changes in a straight installation. Deviations from this may require a different spring design or an adapted spring tension for wire break detection.

MOUNTING DIAGRAM



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

CONNECTION DRAWING



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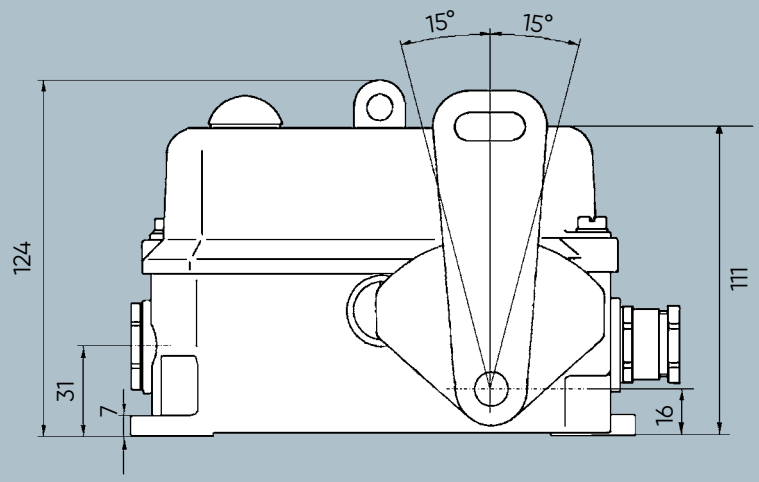

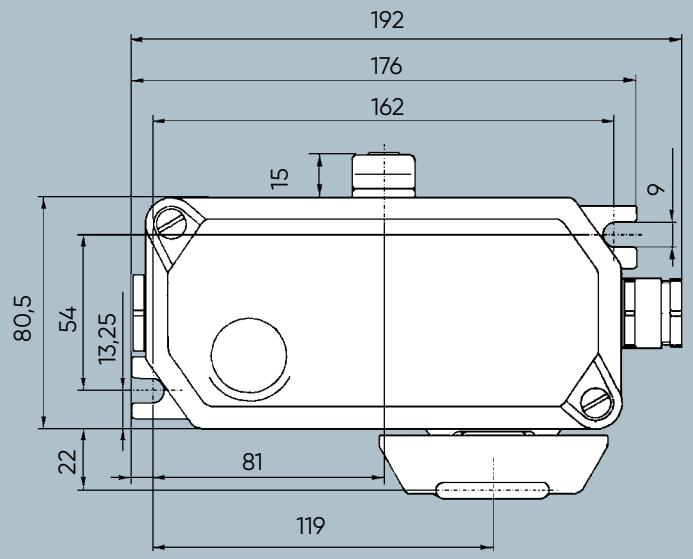

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