

# Belt Conveyor – Misalignment Switch

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**HES**



## APPLICATION

KIEPE belt misalignment switches of type HES are designed for heavy duty application and used at fixed belt conveyors according to DIN EN 620 requirements in order to keep the risk of unintentional operation as low as possible. The lateral movement of the conveyor belt is monitored and by switching off the conveyor in the case of unacceptable belt drift, the belt monitoring prevents damage and destruction of the belt and the machine.

The Kiepe type HES misalignment switch complies with the Low Voltage Directive 2006/95/EC. It features a robust aluminum housing and is equipped with 2 force-actuated changeover contacts with snap-action function with two adjustable switching points.

Note: The misalignment switch may only be used in control circuits.

## FUNCTION

Inadmissible belt drift occurs when the belt edge approaches the end of the supporting rollers through lateral movement and surpasses it. Then the actuator (roller lever) is operated and displaced. In the case of displacement of the actuator, the cam operating switches are activated.

The switching angle can be set via an adjustable camshaft. In this way, a pre-warning can be implemented in addition to the safety shutdown. As soon as the belt moves correctly, the roller lever will automatically return to its home position.

## TECHNICAL DATA

|                                                  |                                                                                                                |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Designation                                      | Misalignment Switch Type HES                                                                                   |
| Type of actuation                                | Bidirectional                                                                                                  |
| Complies with                                    | DIN EN 60204-1<br>DIN EN 60947-5-1<br>EN 620                                                                   |
| Suited for                                       | Control units and systems in accordance with DIN EN 60204                                                      |
| <b>Mechanics</b>                                 |                                                                                                                |
| Enclosure                                        | Aluminum GK-ALSi 12                                                                                            |
| Finish                                           | DD-paint yellow, RAL 1004                                                                                      |
| Actuating lever                                  | Stainless steel; Ø 50.5 mm, ball-bearing roller                                                                |
| Mounting                                         | 2 slotted holes for M8-screws                                                                                  |
| Installation position                            | Horizontal, tilt angle up to about 30°                                                                         |
| Deflection of roller lever                       | Maximum +/-75°                                                                                                 |
| Mechanical reliability                           | > 10,000 actuations                                                                                            |
| Weight                                           | 2.2 kg                                                                                                         |
| <b>Electrical system</b>                         |                                                                                                                |
| Switching system                                 | 2 changeover contacts (SPDT with snap action);<br>cam operated positive-making switches; gold plated           |
| Switching range                                  | 5°...15° and 15°...35°, adjustable, factory set at 10 degrees each                                             |
| Cable entry                                      | Threaded holes 2x M25x1,5 with each<br>1x screwed cable gland: sealing area Ø 11 mm to Ø 16 mm; 1x dummy screw |
| Utilization category                             | AC-15: 230 V; 1.5 A<br>DC-13: 60 V; 0.5 A<br>DC-13: 24 V; 2 A                                                  |
| Connection cross section                         | 1 mm <sup>2</sup> to 2,5 mm <sup>2</sup>                                                                       |
| Protective conductor connection                  | in the casing; M4; Class I: protective earthing                                                                |
| Rated insulation voltage U <sub>i</sub>          | 250 V                                                                                                          |
| Rated impulse withstand voltage U <sub>imp</sub> | 2.5 kV; degree of pollution III                                                                                |
| Conventional thermal current I <sub>th</sub>     | 6 A                                                                                                            |
| Contact reliability                              | 30,000 operations with 100% I <sub>e</sub>                                                                     |
| <b>Ambient conditions</b>                        |                                                                                                                |
| Permissible ambient temperature                  | -25°C... +70°C                                                                                                 |
| Extended ambient temperature                     | -40°C... +70°C (type HES 7xx)                                                                                  |
| Protection rating                                | IP65 / IP67 in accordance with EN 60529                                                                        |

## SELECTION TABLE

| Type    | Contact configuration<br>SPDT | Extended temperature range<br>-40 °C ... +70 °C | Ventilation membran | Order number   |
|---------|-------------------------------|-------------------------------------------------|---------------------|----------------|
| HES 011 | 2                             |                                                 |                     | 92.057 020.011 |
| HES 017 | 2                             |                                                 | x                   | 92.057 020.017 |
| HES 711 | 2                             | x                                               |                     | 92.057 020.711 |

### Equipment options:

Devices for two-wire bus-system

### Spare parts and accessories:

|                                                   |                 |
|---------------------------------------------------|-----------------|
| Cable gland M25x1,5; sealing area Ø11mm to Ø16 mm | 113.52.02.20.01 |
| Screw plug; M25 x 1,5                             | 113.52.87.20.02 |
| Cover HES                                         | 93.066 839.004  |
| Roller lever, stainless steel, Ø50,5 mm           | 93.055 201.101  |

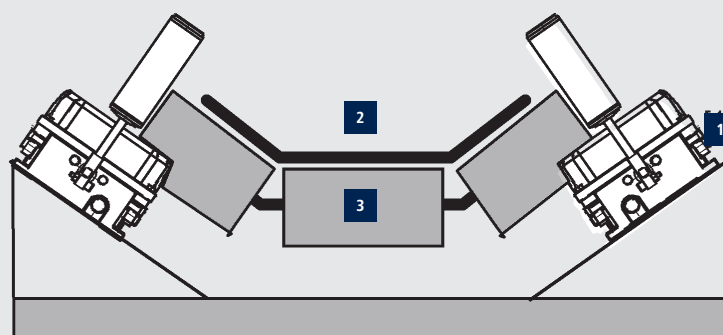
## MOUNTING

Type HES **1** misalignment switches are fastened in installation position on a substructure with 2 M8 screws each. In the case of misalignment, the belt **2** must not leave the lateral guide rollers. The position of the misalignment switches shall be chosen such that the belt **2** makes contact with the actuation roller of the misalignment switch preferably perpendicularly. The actuation roller of the misalignment switch is not touched during normal operation.

The roller lever can be replaced and can be affixed freely in the directions of rotation on the switch axis.

The electrical connection is made directly at the screw joints of the switching elements in the housing via the cable gland, included in the delivery. A second cable gland is possible when replacing the screw plug on the opposite site.

## MOUNTING DIAGRAM



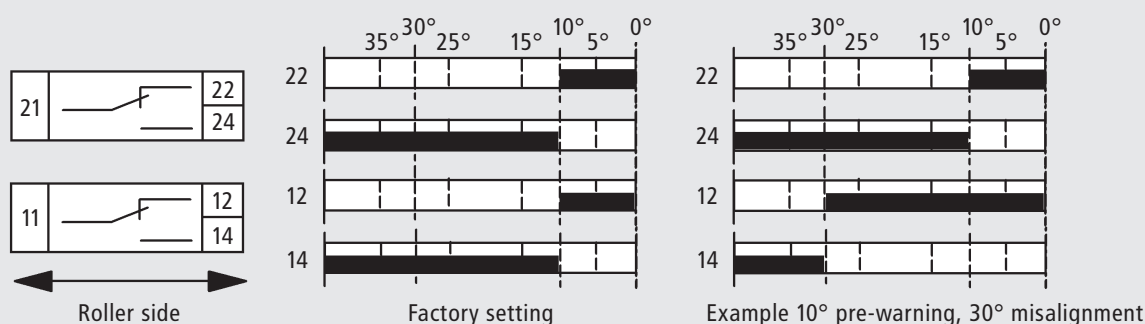
Sketch of conveyor with support rollers and belt

**1** Misalignment Switch

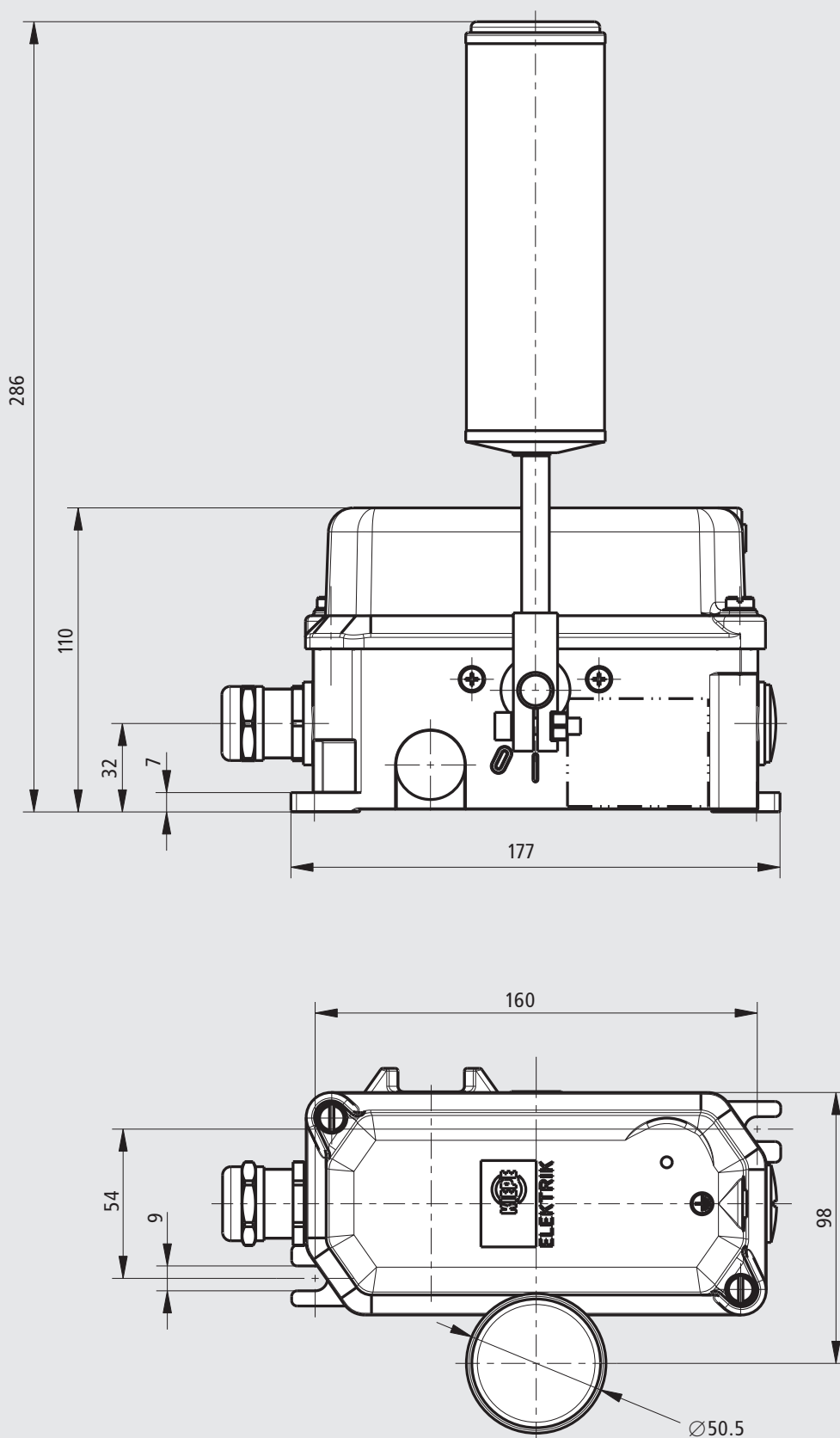
**2** Belt

**3** Support roller

## CONNECTION DRAWING



## DIMENSIONS



Subject to change without notice.

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