

## Conveyor Belt - Misalignment Switch

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**HES EX II2D**

**HES EX II3D**



## APPLICATION

KIEPE misalignment switches of Type HES EX 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 misalignment switches Type HES EX are suited for use in explosive atmosphere with conductive dust, Group II, category 2, in zone 21 and 22 (Type HES EX II 2D) or categorie 3, only in zone 22 (Type HES EX II 3D).

The KIEPE misalignment switch Type HES EX complies with the ATEX Directive 94/9/EC and meets the safety objectives of the Low Voltage Directive 2006/95/EC.

KIEPE Misalignment switch Type HES EX features a robust aluminum housing and is equipped with 2 force-actuated changeover contacts with snap-action function with two settable switching points.

### Note:

The misalignment switch must only be used in electrical control circuits.

## FUNCTION

The misalignment switch Type HES EX operates, when the roller lever is deflected. The operating angle can be adjusted by an adjustable cam for each switching element.

In addition to the safety shutdown is thereby also a pre-warning feasible. The roller lever is spring-assisted and turns back automatically after deflection.

## TECHNICAL DATA

|  |              |  |
|--|--------------|--|
| Designation                                      |              | Misalignment switch Type HES EX<br>ATEX-Versionn   |
| Type of actuation                                |              | Bidirektional, by roller lever   |
| Complies with                                    |              | DIN EN 60204-1; DIN EN 60947-5-1; EN 620   |
| ATEX   |              |  |
| Complies with ATEX Standard                      |              | DIN EN 60079-0; DIN EN 60079-31 Protection by enclosure „t“  |
| Device group / category                          |              | II / 2D, 3D; flammable, conductive dust  |
| ATEX-Identification                              |              |  |
| for Zone 21, 22                                  | HES EX II 2D | ⊕ II 2D Ex t IIIC T85°C Db IP 67   |
| for Zone 22                                      | HES EX II 3D | ⊕ II 3D Ex t IIIC T85°C Dc IP 67   |
| ATEX-Certifikat                                  |              | EPS 12 ATEX 1 479 X  |
| Mechanics  |              |  |
| Enclosure  |              | Aluminum GK-ALSi 12<br>DD-Paint yellow, RAL 1004   |
| Roller lever                                     |              | Stainless steel, Ø 50 mm, Ball-bear roller   |
| Mounting   |              | 2 slotted holes for M8-Screws  |
| Installation position                            |              | Horizontal, tilt angle up to 30°   |
| Deflection of roller lever                       |              | Maximum +/- 75°  |
| Mechanical reliability                           |              | > 10.000 actuations  |
| Weight   |              | 2.2 kg   |
| Electrical system                                |              |  |
| 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 setting: 10° each)                                       |
| Cable entry                                      |              | 2 Threaded holes M25x1,5<br>with 2x screw plug,1x cable gland (added)                                |
| Utilization category                             |              | AC-15: 230V ; 1,5A<br>DC-13: 60V; 0,5A<br>DC-13: 24V; 2A   |
| Connection cross section                         |              | 0.75 mm² to 1.5 mm²  |
| Protective conductor connection                  |              | M4, Protection class I: Protective earthing  |
| Rated insulation voltage U <sub>i</sub>          |              | 250 V  |
| Rated impulse withstand voltage U <sub>imp</sub> |              | 2,5 kV, overvoltage category II, degree of pollution 3   |
| Conventional thermal current I <sub>th</sub>     |              | 6 A  |
| Contact reliability                              |              | 30.000 operations with 100% I <sub>e</sub>   |
| Ambient conditions                               |              |  |
| Permissible ambient temperature                  |              | −25°C ... +60°C  |
| Protection rating                                |              | IP65 and IP67 according to EN 60529  |

## SELECTION CHART

| Switch Type      | Explosive dust atmosphere   | Contact Configuration<br>SPDT | Order number   |
|------------------|---|-------------------------------|----------------|
| HES EX 011 II 2D | occurs in normal operation occasionally                             | 2                             | 92.096 187.011 |
| HES EX 011 II 3D | not occurs in normal operation or infrequently add for a short time | 2                             | 92.096 319.011 |

### Spare parts and accessories:

|   |                 |
|---|-----------------|
| EX-Cable gland M25 x 1,5; sealing area $\varnothing 11\text{mm}$ to $\varnothing 16\text{mm}$ | 113.52.01.20.01 |
| EX-Screw plug M25 x 1,5   | 113.52.87.20.01 |
| EX-Roller lever, stainless steel, $\varnothing 50\text{mm}$                                   | 93.055 201.101  |

### Important advice!

The cable gland and screw plugs are carried out according to EC-Type Examination Certificate.  
The use of other cable glands or screw plugs may void the device operation approval!

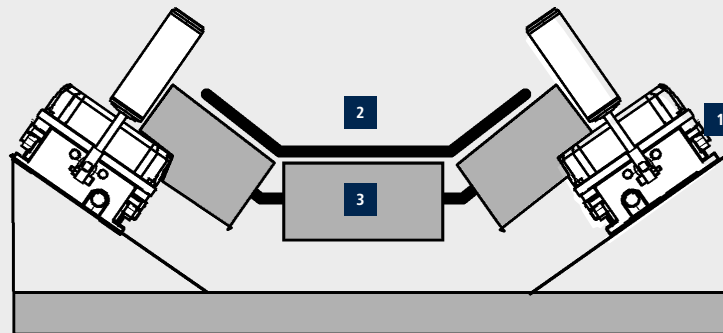
## MOUNTING

The misalignment switch of Type HES EX **1** is fastened with two (2) M8 screws each in installation position on the substructure. In the case of belt misalignment, the belt **2** must not leave the lateral guide rollers **3** and should contact the roller of the misalignment switch perpendicularly. The actuation roller of the switch has no contact with the belt during normal operation of the belt. The roller lever is a wear part and therefore exchangeable. It can be affixed freely on the switch axis.

### Important advice!

For protection against electrostatic discharge HES EX is provided with conductive compounds and an external potential equalization connection, to which a minimum of 4 mm<sup>2</sup> potential equalization cable must be connected directly to the system. All connections must be checked regularly in accordance with the operation instructions.

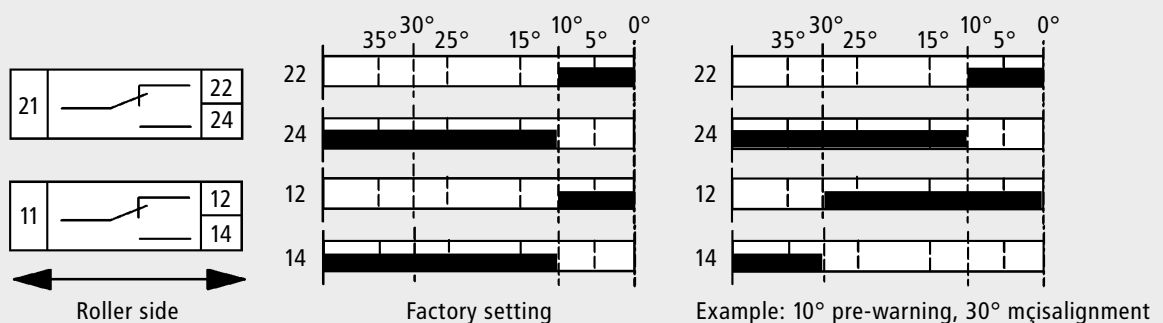
## MOUNTING DIAGRAM



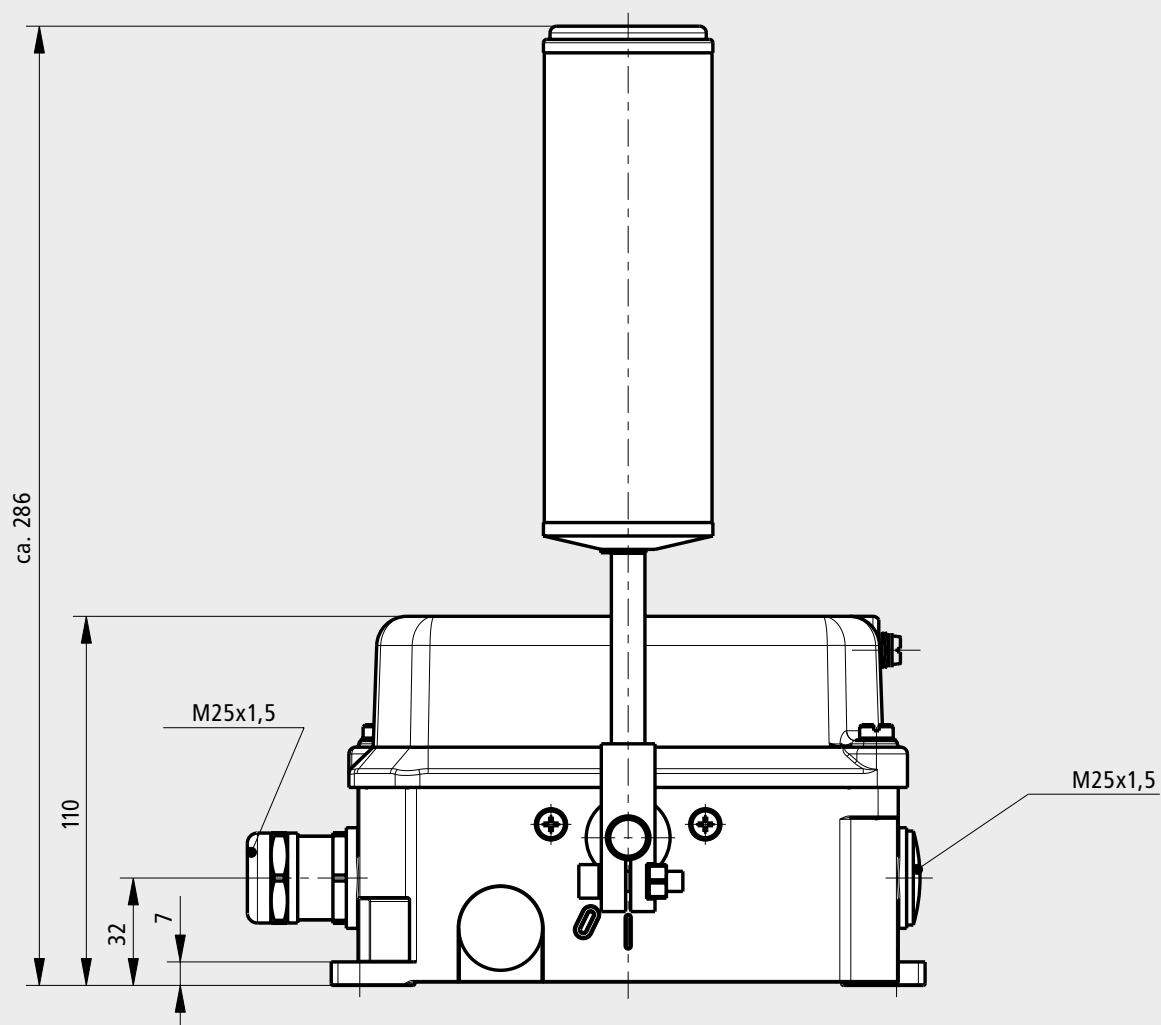
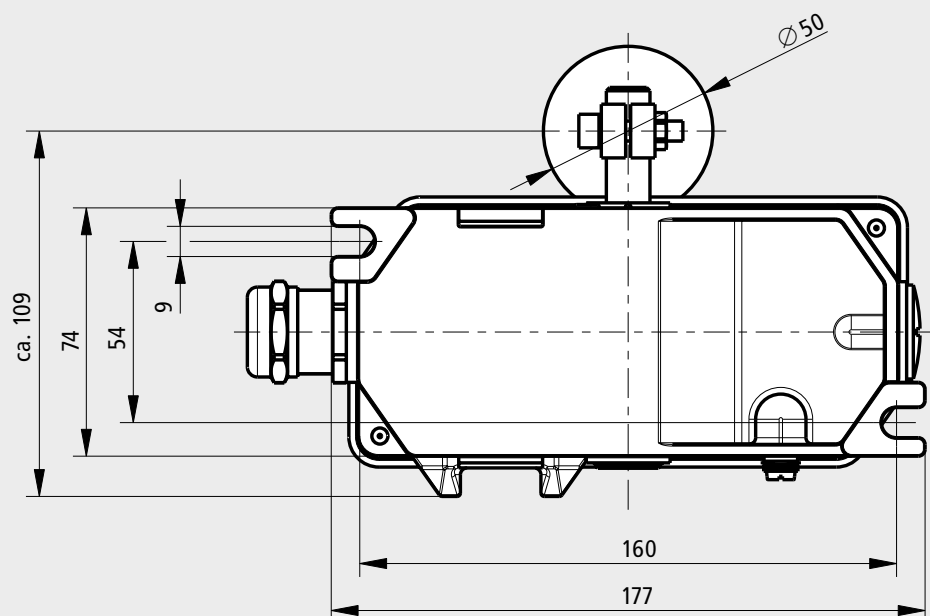
Sketch of conveyor with support rollers and belt

- 1** Misalignment switch
- 2** Belt
- 3** Support roller

## CONNECTION DRAWING



## DIMENSIONS



Subject to change without notice

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