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KIEPE ELEKTRIK

Limit Switch

REL EX II 2D
REL EX II 3D

APPLICATION

KIEPE limit switches of type REL EX are suited for use in materials handling equipment, conveying systems, loading plants and mixing equipment for bulk material in stationary equipment for limiting the path of moving machine parts and for limiting travel paths under harsh environmental conditions. The KIEPE limit switches Type REL EX are suited for use in explosive atmosphere with conductive dust, Group II, category 2 , in zone 21 and 22 (Type REL EX II 2D) or categorie 3, only in zone 22 (Type REL EX II 3D).

The Kiepe limit switch type REL EX complies with the ATEX Directive 94/9/EG and meets the safety objectives of the Low Voltage Directive 2006/95/EC. KIEPE limit switch Type REL EX features a robust cast iron housing and is equipped with 2 force-actuated changeover contacts with snap-action function with two adjustable trip points.

Note:
The limit switch must only be used in electrical control circuits.

FUNCTION

The limit switch operates, when the roller lever is deflected. The roller lever can be mounted at any angle on the serrated shaft in steps of 12° and can be deflected in either direction of rotation up to maximally 75°. 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 backautomatically after deflection.

Note:
Swicthing angles up to 15° should be set at the factory.

TECHNICAL DATA

Designation		Limit switch Type REL EX ATEX-Version
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; flamable, conductive dust
ATEX-Identification		
for Zone 21, 22	REL EX II 2D	⟨Ex⟩ II 2D Ex t IIIC T85°C Db IP67
for Zone 22	REL EX II 3D	⟨Ex⟩ II 3D Ex t IIIC T85°C Dc IP67
ATEX-Certificate		EPS 12 ATEX 1 479 X
Mechanics		
Enclosure		Cast iron DD-paint yellow, RAL 1004
Roller lever		Stainless steel, roller: brass; with serration
Mounting		2 slotted holes for M10-Screws
Installation position		Horizontal, tilt angle up to about 30°
Deflection of roller lever		Maximum +/- 75°
Mechanical reliability		> 10,000 actuations
Gross weight		5.4 kg
Electrical system		
Switching System		2 changeover contacts (SPDT with snap action), 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 with 2x screw plug, 1x cable gland (added)
Utilization category		AC-15: 230V; 1.5A DC-13: 60V; 0.5A DC-13: 24V; 2A
Connection cross section		0.75 mm^2 to 1.5 mm^2
Protective conductor connection		M4, Protection class I: Protective earthing
Rated insulation voltage U_i		250 V
Rated impulse withstand voltage U_{imp}		2.5 kV, overvoltage category II, degree of pollution 3
Conventional thermal current I_{th}		6 A
Contact reliability		30,000 operations with 100% I_e
Ambient conditions		
Permissible ambient temperature		–25 °C ... +60 °C
Protection rating		IP65 and IP67 in accordance with EN 60529

SELECTION CHART

Type	Area of application Explosive dust atmosphere	Contact configuration SPDT	Order number
REL EX 011 II 2D	occurs in normal operation occasionally	2	92.096 230.606
REL EX 011 II 3D	not occurs in normal operation or infrequently ad for a short time	2	92.096 521.606

Spare parts and accessories:	
EX-Cable gland; M25 x 1.5; sealing area ∅11 mm to ∅16 mm	113.52.01.20.01
EX-Screw plug; M25 x 1.5	113.52.87.20.01
Roller lever, stainless steel, roller: brass; with serration	94.047137.102

Important advice!

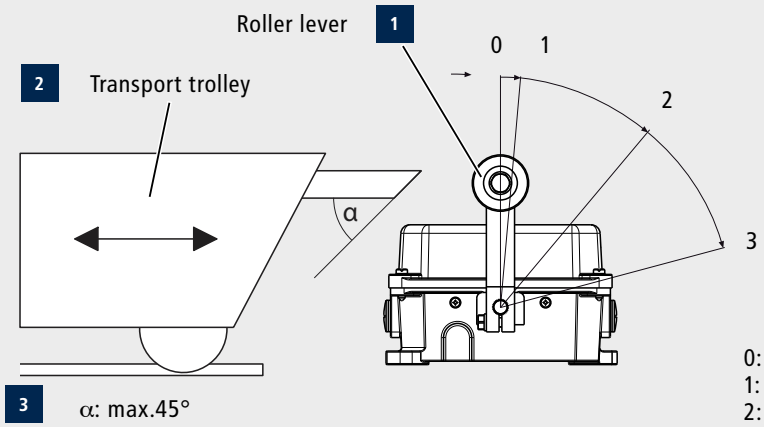
The cable gland and screw plugs are carried out according to EC-Type Examination Certificate.
The use of other cable glands or screw plugs may void the divice operation approval!

MOUNTING

The limit switch of Type REL EX 1 is fastened with two (2) M10 screws on the substructure. The roller of the actuating lever should be deflected by a 45° ramp 3 of the moving machine part 2. The maximum switching angle of the roller lever (3) must not exceed whenever the part of the machine reached the limit position.The roller lever is a wear part and therefore exchangeable. It can be affixed in steps of 12° on the serration shaft. Electrical connection is performed with the device open using the screwed cable gland included in the delivery, directly on the screw joints of the switching elements .

Important advice!
For protection against electrostatic discharge REL EX is provided with conductive components and an external potential equalization connection, to which a minimum of 4 mm² potential equalization cable must be connected directly to the system. All connections must be checked regularly in accordance with the operation instructions.

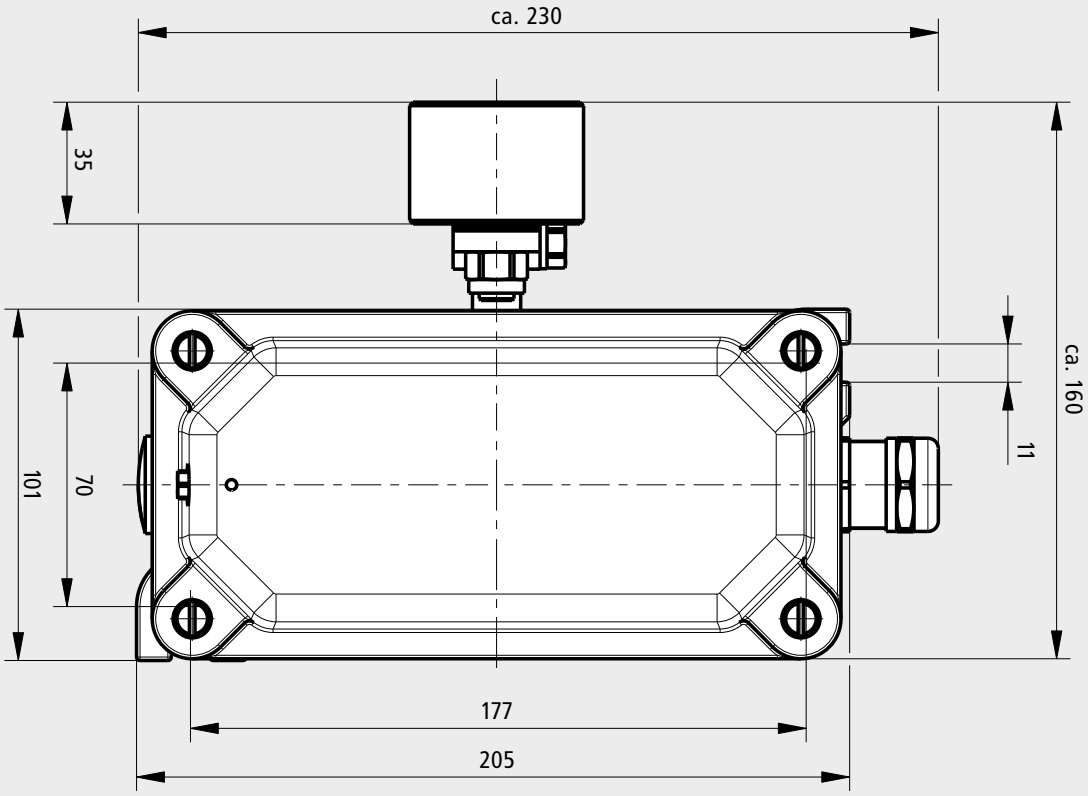
MOUNTING DIAGRAM

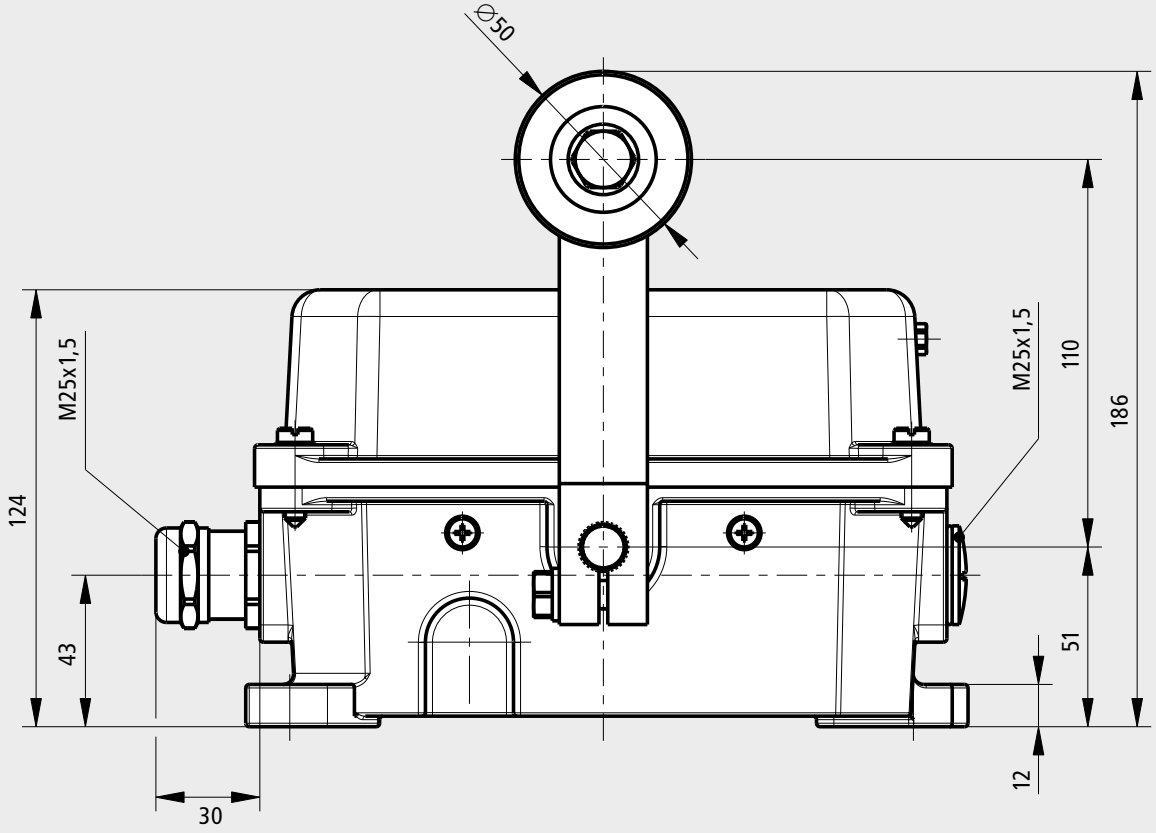


0: Basic setting
1: Switching point for deflection from 5° to 15°
2: Switching point for deflection from 15° to 35°
3: Maximum deflection at 75°

CONNECTION DRAWING

DIMENSIONS





Subject to change without notice

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