

## Datasheet - TK 235 ST-AS



AS interface safety at work / Safety switchgear / Safety switches / 235 AS / AS - 235 Offset roller lever K



- AS-Interface M12 connector
- Metal enclosure
- Wide range of alternative actuators
- Good resistance to oil and petroleum spirit
- 30 mm x 63,5 mm x 30 mm
- Actuator heads can be repositioned by 4 x 90°
- Mounting details to EN 50047
- AS-Interface LED and status display
- Integrated AS-Interface
- Suitable for AS-i Power24

(Minor differences between the printed image and the original product may exist!)

### Ordering details

Product type description	TK 235 ST-AS
Article number	TK 235 ST-AS
EAN Code	
eCl@ss	27-27-26-01

### Approval

Approval



### Classification

Standards	EN ISO 13849-1, IEC 61508
PL	up c
Control category	up 1
PFH	1.14 x 10 <sup>-6</sup> / h
- notice	up to max. 100000 switching cycles/year
SIL	up 1
Mission time	20 Years


If a fault exclusion for hazardous damage of the 1-channel mechanics is authorized and an adequate protection against tampering is ensured, suitable for use up to:

Standards	EN ISO 13849-1, IEC 61508
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PL	up d
Control category	up 3
PFH value	1.01 x 10 <sup>-7</sup> /h
- notice	up to max. 100000 switching cycles/year
SIL	up 2
Mission time	20 Years

## Global Properties

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Permanent light	AS - 235 Rollenhebel K
Standards	EN 50295, EN 60947-5-1, EN ISO 13849-1, IEC 61508
Compliance with the Directives (Y/N) 	Yes
Suitable for safety functions (Y/N)	Yes
Actuator type	E to EN 50047
Materials	
- Material of the housings	Zink
- Material of the connector	Metal film
- Material of the contacts	Silver
Housing coating	painted
Housing construction form	Norm construction design
Weight	

## Mechanical data

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Design of electrical connection	connector plug M12, 5-pole, can be rotated
Mechanical life	1.000.000 operations
Switching frequency	max. 5000 /h
Design of actuating element	Offset roller lever
Actuating force	min. 9 N
restistance to shock	30 g / 11 ms
Resistance to vibration	10 ... 150 HZ, Amplitude 0,35 / 5 g
Positive break force	19
Actuating speed for vertical actuation	
- Max. Actuating speed	1 m/s

## Ambient conditions

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Ambient temperature	
- Min. environmental temperature	-25
- Max. environmental temperature	+60
- Min. Storage and transport temperature	-25
- Max. Storage and transport temperature	+85
Relative humidity	30 ... 95
- non-condensing	
- non-icing	
Protection class	IP67 to IEC/EN 60529

## Electrical data

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Design of control element	Opener (NC)
Switching principle	Creep circuit element
- positive break NC contact 	
Number of auxiliary contacts	0

Number of safety contacts	2
Rated impulse withstand voltage $U_{imp}$	800 V
Rated insulation voltage $U_i$	32 VDC
Thermal test current $I_{the}$	10 A
Utilisation category	AC-15: 230 V / 4 A, DC-13: 24 V / 1 A
Max. fuse rating	6 A gG D-fuse

## Electrical data - AS interface

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AS-i Supply voltage	18 ... 31.6 VDC, Protection against polarity reversal
AS-i operating current	≤ 50
AS-i Device insulation	internally short-circuit proof
AS-i Specification	
- version	V 3.0
- Profile	S-0.B.F.F
AS-i Inputs	
- Channel 1	Data bits DI 0/DI 1= dynamic code transmission
- Channel 2	Data bits DI 2/DI 3= dynamic code transmission
AS-i Outputs	DO 0 ... DO 3 not used
AS-i Parameter bits	P1 ... P3 not used
- P0	Channel 2 switched
AS-i input module address	0
- Default on address 0, programmable via the AS-Interface Master or Hand-held programming device	

## LED switching conditions display

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LED switching conditions display (Y/N)	Yes
AS-i LED switching conditions display	
(1) yellow LED	Channel 1 / AS-i SaW Bit 0,1
(2) green/red LED (AS-i duo LED)	Supply voltage / Communication error / slave address = 0
(3) yellow LED	Channel 2 / AS-i SaW Bit 2,3

## ATEX

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Explosion protection categories for gases	None
Explosion protected category for dusts	None

## Dimensions

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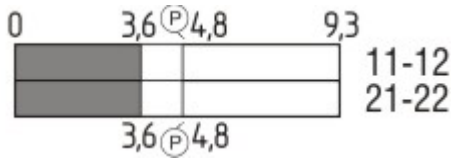
Dimensions of the sensor	
- Width of sensor	30
- Height of sensor	115,10
- Length of sensor	30

## Pin assignment

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1	AS interface +
2	None
3	AS interface -
4	None
5	Functional earth connection

## Switch travel diagram



Notes Switch travel diagram

- Contact closed
  - Contact open
  - Setting range
  - L Break point
  - P Positive opening sequence/- angle
- VS** adjustable range of NO contact  
**VÖ** adjustable range of NC contact  
**N** after travel

## Ordering suffix

The applicable ordering suffix is added at the end of the part number of the safety switch.

Order example: TK 235 ST-AS-FK

...-FK \$missingName\$

## Ordering code

**(1)(2)** 235 **(3)**-AS

**(1)**

**Z** Snap action

**T** Slow action

**(2)**

**S** Plunger S

**R** Roller plunger R

**1R** Offset roller lever 1R

**K** Angle roller lever K

**3K** Angle roller lever 3K

**4K** Angle roller lever 4K

**K4** Angle roller lever K4

**1H** Roller lever 1H

**12H** Roller lever 12H

**14H** Roller lever 14H

**7H** Roller lever 7H

**(3)**

**ST** connector plug M12, Metal film

**FK** Connection for flat cable

## Documents

Operating instructions and Declaration of conformity (it) 309 kB, 09.10.2018

Code: mrl\_zt235-236as\_it

Operating instructions and Declaration of conformity (pt) 314 kB, 09.10.2018

Code: mrl\_zt235-236as\_pt

**Operating instructions and Declaration of conformity (de)** 320 kB, 09.10.2018

Code: mrl\_zt235-236as\_de

**Operating instructions and Declaration of conformity (es)** 312 kB, 09.10.2018

Code: mrl\_zt235-236as\_es

**Operating instructions and Declaration of conformity (da)** 301 kB, 09.10.2018

Code: mrl\_zt235-236as\_da

**Operating instructions and Declaration of conformity (nl)** 346 kB, 09.10.2018

Code: mrl\_zt235-236as\_nl

**Operating instructions and Declaration of conformity (en)** 313 kB, 09.10.2018

Code: mrl\_zt235-236as\_en

**Operating instructions and Declaration of conformity (fr)** 314 kB, 09.10.2018

Code: mrl\_zt235-236as\_fr

**Operating instructions and Declaration of conformity (jp)** 422 kB, 09.10.2018

Code: mrl\_zt235-236as\_jp

**Operating instructions and Declaration of conformity (pl)** 327 kB, 09.10.2018

Code: mrl\_zt235-236as\_pl

**TÜV certification (de, en)** 249 kB, 20.01.2017

Code: z\_235p03

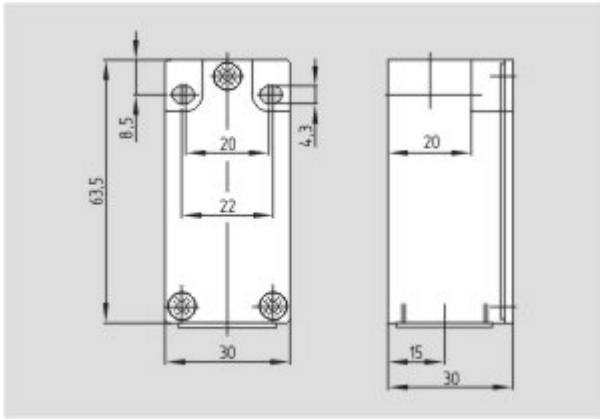
## Images

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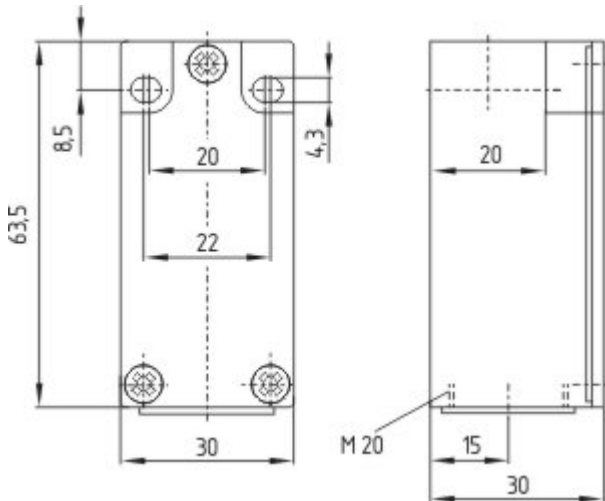


Product photo

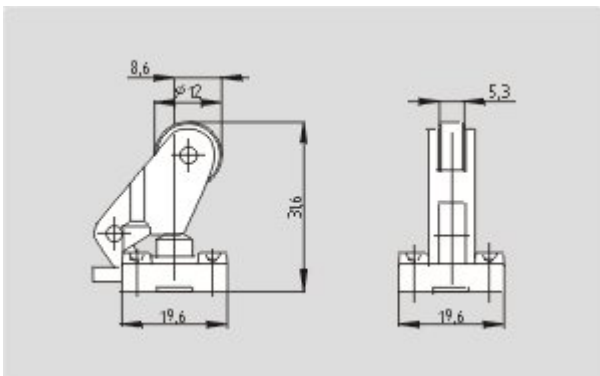
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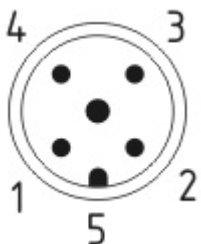
Dimensional drawing (basic component)



Dimensional drawing (basic component)



Dimensional drawing (actuator)



Contact arrangement