

Datasheet - TR 235-02Z

Position switch / 235 Metal enclosure - DIN EN 50047 with Actuator / 235 Roller plunger r



Preferred typ



- 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
- 1 Cable entry M 20 x 1.5

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

Ordering details

Product type description	TR 235-02Z
Article number	101168156
EAN code	4030661221021
eCl@ss	27-27-26-01

Approval


Approval



Classification

Standards	ISO 13849-1
B _{10d} Opener (NC)	20.000.000
Mission time	20 Years
notice	$MTTF_d = \frac{B_{10d}}{0,1 \times n_{op}}$ $n_{op} = \frac{d_{op} \times h_{op} \times 3600 \text{ s/h}}{t_{cycle}}$

Global Properties

Product name	T 235 Rollendruckbolzen R
Standards	IEC 60947-5-1, ISO 13849-1, BG-GS-ET-15
Compliance with the Directives (Y/N) 	Yes
Suitable for safety functions (Y/N)	Yes
Actuator type	C to EN 50047
Materials	
- Material of the housings	Zink
- Material of the contacts	Silver
Housing coating	painted
Housing construction form	Norm construction design
Weight	155 g


Mechanical data

Design of electrical connection	Screw connection
Cable section	
- Min. Cable section	0,75 mm ²
- Max. Cable section	2.5 mm ²
Mechanical life	20.000.000 operations
Switching frequency	max. 5000 /h
notice	All indications about the cable section are including the conductor ferrules.
Design of actuating element	Roller plunger
Actuating force	min. 9 N
Bounce duration	in accordance with actuating speed
Switchover time	in accordance with actuating speed
Positive break force	19 N
Actuating speed with actuating angle 30° to switch axis	
- Min. Actuating speed	120 mm/min
- Max. Actuating speed	1 m/s

Ambient conditions

Ambient temperature	
- Min. environmental temperature	-30 °C
- Max. environmental temperature	+80 °C
Protection class	IP67

Electrical data

Design of control element	Opener (NC)
Switching principle	Creep circuit element
- positive break NC contact 	
Number of auxiliary contacts	0 piece
Number of safety contacts	2 piece
Rated impulse withstand voltage U _{imp}	6 kV
Rated insulation voltage U _i	500 V
Thermal test current I _{the}	10 A
Utilisation category	AC-15: 230 V / 4 A, DC-13: 24 V / 1 A
Required rated short-circuit current	1000 A
Max. fuse rating	6 A gG D-fuse

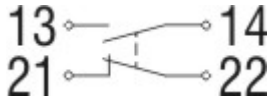
ATEX

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

Dimensions

Dimensions of the sensor	
- Width of sensor	30 mm
- Height of sensor	86 mm
- Length of sensor	30 mm

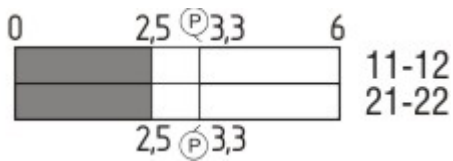
Diagram



Note Diagram

- positive break NC contact
- active
- no active
- Normally-open contact
- Normally-closed contact

Switch travel diagram



Notes Switch travel diagram

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

Ordering suffix

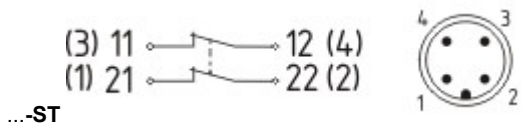
The applicable ordering suffix is added at the end of the part number of the safety switch.

Order example: TR 235-02Z-**1637**

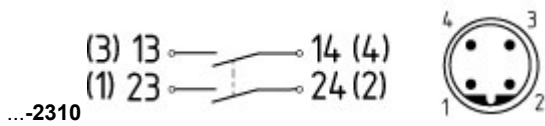
...-**1637** 0,3 µm gold-plated contacts

...-**NPT** Cable entry NPT 1/2"

M12 connector with A-coding
 Rated impulse withstand voltage U_{imp} : 0,8 kV
 Rated insulation voltage U_i : 50 V
 Operating current I_e : AC-15: 50 V / 4 A



Caution! The versions with connector may only be used in PELV circuits to EN 60204-1.



M12 connector with B-coding
 Rated impulse withstand voltage U_{imp} : 0,8 kV
 Rated insulation voltage U_i : 50 V
 Operating current I_e : AC-15 50 V / 4 A
 Caution! The versions with connector may only be used in PELV circuits to EN 60204-1.

...-2574

\$missingName\$

Ordering code

(1)(2) 2(3)5-(4)Z(5)-(6)-(7)-(8)-(9)

(1)

Z

T

(2)

S

R

4S

4R

1R

K

3K

4K

K4

1H

7H

10H

12H

14H

AF

(3)

3

5

(4)

02

11

20

(5)

H

UE

(6)

without

ID

NPT

Snap action

Slow action

Plunger S

Roller plunger R

Plunger 4S

Roller plunger 4R

Offset roller lever 1R

Offset roller lever K

Angle roller lever 3K

Angle roller lever 4K

Angle roller lever K4

Roller lever 1H

Roller lever 7H

Rod lever 10H

Roller lever 12H

Roller lever 14H

Spring rod lever AF

slim design

large design

2 Opener (NC)

1 Normally open contact (NO) / 1 Opener (NC)

2 Normally open contact (NO), (Switch with 2 NO contacts are not for security tasks)

Slow action with staggered contacts

Slow action with overlapping contacts

Cable entry M20

IDC method of termination

cable entry NPT 1/2"

ST	M12 connector with A-coding (<i>Caution! The versions with connector may only be used in PELV circuits to EN 60204-1.</i>)
ST-2310	M12 connector with B-coding (<i>Caution! The versions with connector may only be used in PELV circuits to EN 60204-1.</i>)
(7) 2574	
(8) 2138	Roller lever 7H for Position switches with safety function
(9) 1637	gold-plated contacts

Documents

Operating instructions and Declaration of conformity (da) 304 kB, 21.08.2013

Code: mrl_ZT235_236_da

Operating instructions and Declaration of conformity (de) 302 kB, 09.03.2016

Code: mrl_ZT235_236_de

Operating instructions and Declaration of conformity (en) 334 kB, 09.03.2016

Code: mrl_ZT235_236_en

Operating instructions and Declaration of conformity (pl) 358 kB, 16.04.2014

Code: mrl_ZT235_236_pl

Operating instructions and Declaration of conformity (pt) 323 kB, 15.07.2014

Code: mrl_ZT235_236_pt

Operating instructions and Declaration of conformity (es) 318 kB, 13.04.2016

Code: mrl_ZT235_236_es

Operating instructions and Declaration of conformity (it) 300 kB, 16.04.2014

Code: mrl_ZT235_236_it

Operating instructions and Declaration of conformity (fr) 321 kB, 16.04.2014

Code: mrl_ZT235_236_fr

Operating instructions and Declaration of conformity (jp) 574 kB, 16.04.2014

Code: mrl_ZT235_236_jp

Operating instructions and Declaration of conformity (nl) 318 kB, 16.04.2014

Code: mrl_ZT235_236_nl

CCC certification (cn) 782 kB, 28.06.2016

Code: q_235p02

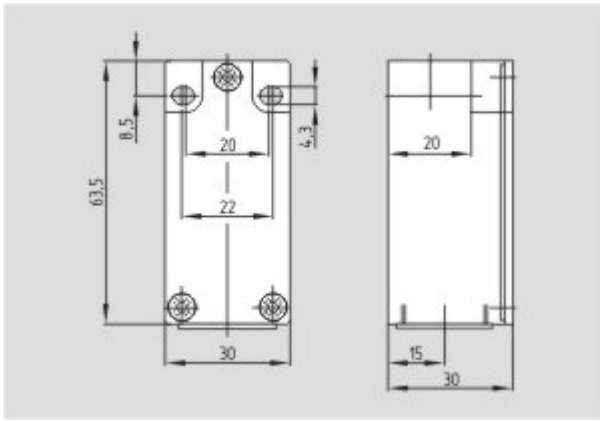
CCC certification (en) 803 kB, 28.06.2016

Code: q_235p01

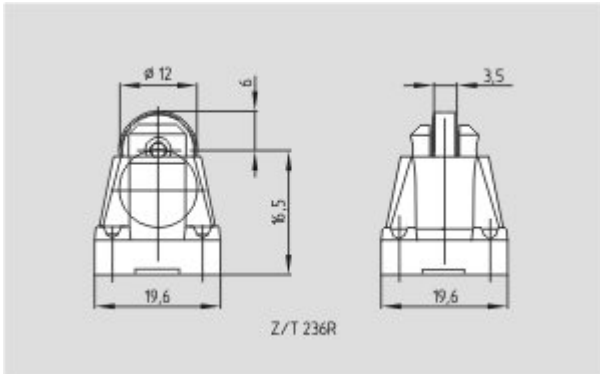
EAC certification (ru) 844 kB, 05.10.2015

Code: q_6037p17_ru

Images



Dimensional drawing (basic component)



Dimensional drawing (actuator)

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The data and values have been checked thoroughly. Technical modifications and errors excepted.
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