



TR 235-02ZH

- Metal enclosure
- 30 mm x 63,5 mm x 30 mm
- 1 Cable entry M 20 x 1.5
- Mounting details to EN 50047
- Wide range of alternative actuators
- Good resistance to oil and petroleum spirit
- Actuator heads can be repositioned by 4 x 90°

Data

Ordering data

	TR 235-02ZH
	101144999
EAN (European Article Number)	4030661135175
eCl@ss number, Version 9.0	27-27-26-01

Approval - Standards

cULus
cCSAus
CCC
EAC

General data

Product name	M 235 roller plunger _R
	IEC 60947-5-1
	ISO 13849-1
	BG-GS-ET-15
Housing construction form	Norm construction design
Actuator type to DIN EN 50047	C
Enclosure material	Zink
Enclosure coating material	painted
Material of the contacts, electrical	Silver
Gross weight	142 g

General data - Features

Number of safety contacts	2
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Safety appraisal

	ISO 13849-1
Mission Time	20 Year(s)

Safety appraisal - Safety outputs

B10d Normally-closed contact (NC)	20,000,000 Operations
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Mechanical data

Actuating element	Roller plunger
Mechanical life, minimum	20,000,000 Operations
Actuating force, minimum	9 N
Positive break force, minimum	19 N
Actuating speed, minimum	120 mm/min
Actuating speed, maximum	1 m/s
Note (Actuating speed)	Actuating speed with actuating angle 30° to switch axis
Note Bounce duration	Bounce duration in accordance with actuating speed
Note (Switchover time)	Switchover time in accordance with actuating speed

Mechanical data - Connection technique

Terminal Connector	Screw connection
	0.75 mm ²
	2.5 mm ²
Note (Cable section)	All indications about the cable section are including the conductor ferrules.

Mechanical data - Dimensions

Height of sensor	86 mm
Length of sensor	30 mm
Width of sensor	30 mm

Ambient conditions

	IP67
Ambient temperature, minimum	-30 °C
Ambient temperature, maximum	+80 °C

Ambient conditions - Insulation value

Rated impulse withstand voltage	6 kV
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Electrical data

Thermal test current	10 A
Required rated short-circuit current to EN 60947-5-1	1,000 A
Utilisation category AC-15	230 VAC
Utilisation category AC-15	4 A
Utilisation category DC-13	24 VDC
Utilisation category DC-13	1 A
Switching element	Opener (NC)
Switching principle	Slow action with staggered contacts
Switching frequency	5,000 /h

Ordering code

Product type description:

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

(1)

Z Snap action

T Slow action (not available for AF/S)

(2)

S Plunger S

R Roller plunger R

4S Plunger 4S

4R Roller plunger 4R

1R Offset roller lever 1R

K Offset roller lever K

3K Angle roller lever 3K

4K Angle roller lever 4K

K4 Angle roller lever K4

1H Roller lever 1H

7H Roller lever 7H

10H Rod lever 10H

12H Roller lever 12H

14H Roller lever 14H

AF Spring rod lever AF

RMS Brass roller

(3)

3 slim design

5 large design

(4)

02 2 NC contact

11 1 NO contacts/1 NC contact

20 2 NO contacts, (switches with 2 NO contacts are not suitable for safety applications)

(5)

H Slow action with staggered contacts

UE Slow action with overlapping contacts

(6)

without Cable entry M20

ID IDC method of termination

NPT Cable entry NPT 1/2"

ST M12 connector with A-coding (Caution! According to EN 60204-1, the versions with connector must only be used in PELV circuits.)

ST-2310 M12 connector with B-coding (Caution! According to EN 60204-1, the versions with connector must only be used in PELV circuits.)

(7)

2574 Enclosure with L-shaped mounting holes (horizontally or vertically adjustable)

(8)

2138 Roller lever 7H for position switches with safety function

(9)

1637 Gold-plated contacts

Pictures

Photo/Product/Catalogue



ID: k235rf01

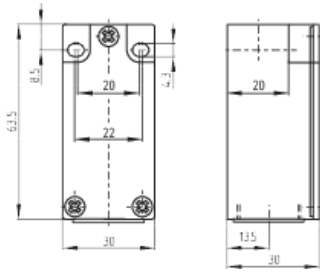
| 168,1 kB | .png | 74.083 x 164.394 mm - 210 x 466

Pixel - 72 dpi

| 317,5 kB | .jpg | 115.711 x 257.175 mm - 328 x 729

Pixel - 72 dpi

Dimension/Product/Basic



ID: 1-235g01

| 114,7 kB | .jpg | 352.778 x 293.158 mm - 1000 x 831 Pixel - 72 dpi
| 4,0 kB | .png | 74.083 x 61.383 mm - 210 x 174 Pixel - 72 dpi

Diagramm/Product/Travel

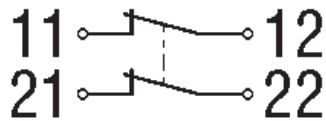
ID: kr235s13



| 1,5 kB | .png | 74.083 x 23.283 mm - 210 x 66 Pixel - 72 dpi
| 37,9 kB | .jpg | 352.778 x 111.478 mm - 1000 x 316 Pixel - 72 dpi
| 16,5 kB | .cdr |

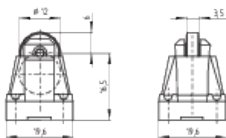
Graphic/Product/Contact

ID: k2o--k01



| 48,8 kB | .jpg | 352.778 x 125.236 mm - 1000 x 355 Pixel - 72 dpi
| 1,4 kB | .png | 74.083 x 26.458 mm - 210 x 75 Pixel - 72 dpi

Dimension/Product/Actuator



ID: 1r236g01

| 7,4 kB | .png | 74.083 x 51.858 mm - 210 x 147 Pixel - 72 dpi
| 76,5 kB | .jpg | 352.778 x 247.297 mm - 1000 x 701 Pixel - 72 dpi

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The details and data referred to have been carefully checked. Images may diverge from original. Further technical data can be found in the manual. Technical amendments and errors possible.

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