

# RAMO 22 K, M12, round collar, 1 NC + 1 NO, Gold, M12 4-pin Acoded, frontring black, 1 x 90°, shape V, latching, key removal position 0



#### fields of application

- > Measurement-control-regulation
- > Electrical engineering
- Mechanical and system engineering
- > Signalling systems
- > Vehicle construction
- Chemical industry
- > Industrial robots

#### special features

- > Precise haptics
- > Safe gold contacts
- Simple M12 plug&play connection
- > Protected contacts due to sealed housing











### description

The locking systems we use were created according to the DIN EN 1303 standard by well-known lock manufacturers. They are open, mechanical systems which, depending on the environmental conditions, require occasional maintenance (e.g. greasing & oiling) by the machine or system operator.

RAMO K key switches offer a solution for every application thanks to a wide variety of contact functions, rotation angles, actuation functions, trigger positions and closures. Just like all RAMO actuators, connection is simple using Plug&Play and without any manual wiring - with M12 sensor cables.

Additional information according to UL certificate:

For Class 2 Power Source or Limited Voltage / Limited Current only

Installation only by trained specialist personnel.

Type 4x Indoor only with cable "Cat. No. 7000-08061-0210100 PUR 4x0.25mm2 with M8 connector, rated max. 30VAC/DC 4A, manufactured by Murrelektronik GmbH" and "Cat. No. 7000-12221-0340100 PUR 4x0.34mm2 with M12 connector, rated max. 30VAC/ DC 4A, manufactured by Murrelektronik GmbH"

For Use on a Flat Surface of a Type 1 or 4x indoor only Enclosure.

#### technical data

> general direct links Color black Collar color black > RAFI eCatalog Front ring color black Collar shape round -40 °C Operating temperature, min. 85 °C Operating temperature, max. -40 °C Storage temperature, min.

The information in this data sheet only contains general descriptions and / or performance features, which may not apply precisely as described to the respective application, and which my change due to further product enhancements. The technical data, illustrations and other information about our products are the mere results of individual technical testing. These descriptions and other product features are only binding if they expressly agreed upon at the time of the conclusion of a binding contract. In all other cases, we reserve the right to make technical changes as well as changes of availability. Pictures and other graphic illustrations are approximations only. All product names may be trademarks or brand names of the RAFI Group or any other sub-supplier of RAFI. The use of such by any third parties for their own purposes may infringe the rights of the respective entity holding those rights. date: Nov 23, 2024 page: 1/5

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90 °C Storage temperature, max. illuminated No Packaging Box Packaging unit 2 pcs. net weight 46.3 g

Operating life 50,000 cycles B10 62,627 cycles

IP65

IP65

type 4X indoor

IEC 60068-2-14 IEC 60068-2-30 IEC 60068-2-78

IEC 60068-2-11

5 g at 10...500 Hz

Pollution degree 2

02 side

2 pcs.

Yes

Yes

05 frontal

30 g at 11 ms amplitude semi-sinusoidal

Degree of protection, front side,

according to DIN EN 60529

Degree of protection, rear side, according to DIN EN 60529

UL Enclosure Type Rating front

side

Environment resistance

Shock resistance according to standard IEC 60068-2-27

Salt-spray resistance according to

standard

Impact resistance IK

oscillation restistance according

to standard IEC 60068-2-6

MOQ order Pollution degree acc. to DIN EN

61010-1

RoHS compliant

REACH compliant

> mounting diameters

Outside dimension, length 29.8 mm Outside dimension, width 29.8 mm 75.1 mm Outside dimension, height Mounting hole 22.3 mm 30.1 mm Mounting depth Installation height 20 mm Grid, min. 30 mm Collar dimension 29.8 mm

> mechanical data

Actuation function latching Operating force, max. 1.3 N Resistance to force on the side 300 N

Contact function 1 NC + 1 NO

Contact material Gold Locking position 019 Key removal position 0

Rotating angle 1 x 90°, shape V Threaded ring Fixing

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Threaded ring torque, max. 1.2 Nm

Terminal on the rear M12 4-pin A-coded

PIN 1 Normally closed contact 1

Normally open contact 1

PIN 2 Normally closed contact 1
PIN 4 Normally open contact 1

> electrical data

Rated insulation voltage 250 V Rated surge voltage 2,500 V

Rated operating voltage 35 V (AC-15)

35 V (DC-13)

Rated voltage, min. 1 V
Rated voltage, max. 32 V
Voltage type DC
Rated operating voltage 1-32 V
Rated current, max. 0.1 A
Power loss 0.00080 W

Overvoltage category 2

Kind of short circuit protective fuse 250 V / 0,1 A / 1,5 kA gG quick

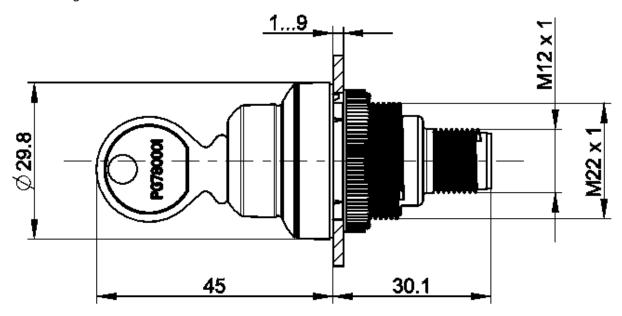
device

Conditional short circuit current 1,000 A



### drawings

#### **Dimensioned drawing**



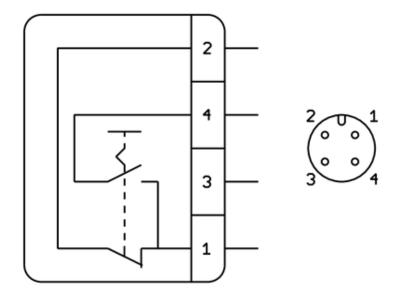
### Mounting hole drawing



acc. to IEC 60947-5-1



#### Schematic diagram



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