

special features

> Precise haptics

> Safe gold contacts

Simple M12 plug&play connection

> Protected contacts due to sealed housing

## 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



## 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 4x0.25mm<sup>2</sup> with M8 connector, rated max. 30VAC/DC 4A,

manufactured by Murrelektronik GmbH" and "Cat. No. 7000-12221-0340100 PUR 4x0.34mm<sup>2</sup> 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		
Color	black	direct links
Collar color	black	> RAFI eCatalog
Front ring color	black	
Collar shape	round	
Operating temperature, min.	-40 °C	
Operating temperature, max.	85 °C	
Storage temperature, min.	-40 °C	

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**: Sep 1, 2024 **page**: 1/5

#### RAFI GmbH & Co. KG

# 1.10.051.204/0001



	Storage tomporature, may	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
	Degree of protection, front side,	IP65
	according to DIN EN 60529	11 00
	Degree of protection, rear side, according to DIN EN 60529	IP65
	UL Enclosure Type Rating front side	type 4X indoor
	Environment resistance	IEC 60068-2-14
		IEC 60068-2-30
		IEC 60068-2-78
	Shock resistance according to standard IEC 60068-2-27	30 g at 11 ms amplitude semi-sinusoidal
	Salt-spray resistance according to standard	IEC 60068-2-11
	Impact resistance IK	02 side
		05 frontal
	oscillation restistance according to standard IEC 60068-2-6	5 g at 10500 Hz
	MOQ order	2 pcs.
	Pollution degree acc. to DIN EN	Pollution degree 2
	61010-1	
	RoHS compliant	Yes
	REACH compliant	Yes
>	mounting diameters	
	Outside dimension, length	29.8 mm
	Outside dimension, width	29.8 mm
	Outside dimension, height	75.1 mm
	Mounting hole	22.3 mm
	Mounting depth	30.1 mm
	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
	Fixing	Threaded ring

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**: Sep 1, 2024 **page**: 2/5

#### RAFI GmbH & Co. KG

>

# 1.10.051.204/0001



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

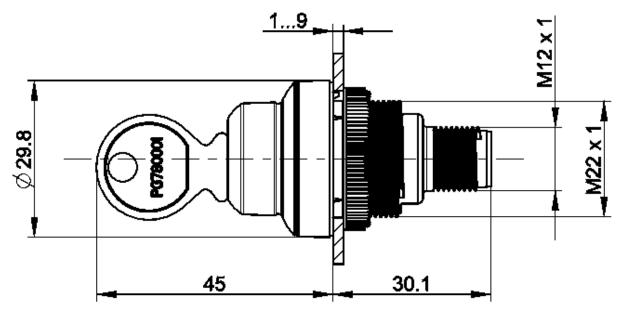
#### RAFI GmbH & Co. KG



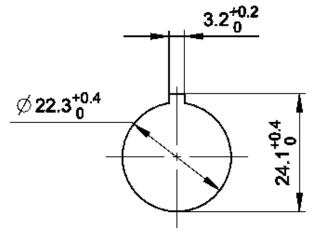


## drawings

#### **Dimensioned drawing**



### Mounting hole drawing



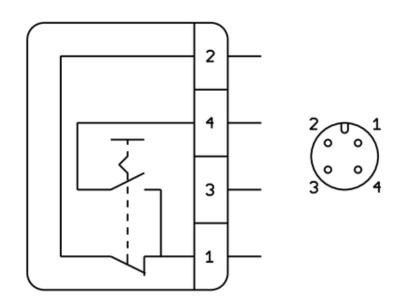
acc. to IEC 60947-5-1

#### RAFI GmbH & Co. KG





#### Schematic diagram



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**: Sep 1, 2024 **page**: 5/5

#### RAFI GmbH & Co. KG