

# RAMO 22 T, M12, round collar, FLEXLAB, momentary contact function, frontring metallic silver, 1 NO



## fields of application

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

## special features

- Key stroke with tactile feedback or mushroom pushbutton with latching actuator
- Based on the RAFI MICON 5 short-travel keyswitch with gold contacts, which has proven itself millions of times over
- Single-part, closed housing
- Unique series with easiest Plug&Play connection
- Completely tailored design – fits the RAFIX range of control components
- Installation size: 22.3 mm
- Plug & Play connection M12
- Custom print options, including FLEXLAB bezels
- Can be illuminated in many colors
- Redundant version with 2 NO contacts
- Pushbutton with black mushroom head



## description

Because it features the RAFI MICON 5 tactile switch, RAMO 22 T offers tactile feedback with a noticeable click. Due to the IP 66/ IP69K degree of protection, it is recommended in particular for plant engineering and construction. RAMO 22 T requires a mounting hole diameter of 22.3 mm.

As a further product variant, the RAMO 22 T mushroom pushbutton offers a latching pushbutton option for every application. It is characterised by form and function as for an emergency stop, but is only declared as a pushbutton. Various contact functions are possible.

### Additional information according to UL certificate:

- Only approved for Class 2 Power Source or Limited Voltage / Limited Current.
- 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

|                                                                |                                                                      |
|----------------------------------------------------------------|----------------------------------------------------------------------|
| Potential free                                                 | yes                                                                  |
| Color                                                          | black                                                                |
| Collar color                                                   | black                                                                |
| Front ring color                                               | metallic silver                                                      |
| Luminous element color                                         | white                                                                |
| Collar shape                                                   | round                                                                |
| Operating temperature, min.                                    | -40 °C                                                               |
| Operating temperature, max.                                    | 85 °C                                                                |
| Storage temperature, min.                                      | -40 °C                                                               |
| Storage temperature, max.                                      | 85 °C                                                                |
| illuminated                                                    | Yes                                                                  |
| Luminous elements                                              | LED                                                                  |
| Packaging                                                      | Box                                                                  |
| Packaging unit                                                 | 10 pcs.                                                              |
| net weight                                                     | 12.6 g                                                               |
| Operating life                                                 | 500,000 cycles                                                       |
| B10                                                            | 650,000 cycles                                                       |
| Degree of protection, front side,<br>according to DIN EN 60529 | IP66<br>IP67<br>IP69                                                 |
| Degree of protection, rear side,<br>according to DIN EN 60529  | IP66<br>IP67                                                         |
| UL Enclosure Type Rating front<br>side                         | type 4X indoor                                                       |
| Environment resistance                                         | IEC 60068-2-14<br>IEC 60068-2-30<br>IEC 60068-2-33<br>IEC 60068-2-78 |
| Salt-spray resistance according to<br>standard                 | IEC 60068-2-11                                                       |
| shock resistance                                               | 05                                                                   |
| MOQ order                                                      | 10 pcs.                                                              |
| Pollution degree acc. to DIN EN<br>61010-1                     | Pollution degree 2                                                   |
| RoHS compliant                                                 | Yes                                                                  |
| REACH compliant                                                | Yes                                                                  |

> mounting diameters

|                           |         |
|---------------------------|---------|
| Outside dimension, length | 40 mm   |
| Outside dimension, width  | 29.8 mm |
| Outside dimension, height | 29.8 mm |
| Mounting hole             | 22.3 mm |
| Mounting depth            | 30.2 mm |
| Installation height       | 9.8 mm  |
| Grid, min.                | 30 mm   |

> mechanical data

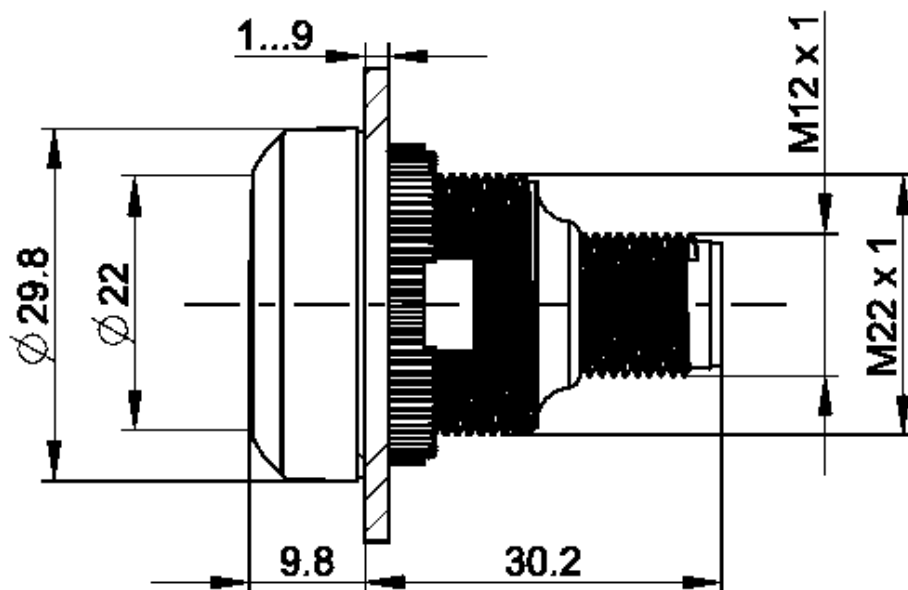
direct links

> [RAFI eCatalog](#)

|                                                 |                                      |
|-------------------------------------------------|--------------------------------------|
| Actuation function                              | momentary contact function           |
| Operating force, max.                           | 12 N                                 |
| Operating force, min.                           | 5 N                                  |
| Operating travel, max.                          | 1 mm                                 |
| Resistance to force on the side                 | 300 N                                |
| Contact function                                | 1 NO                                 |
| Contact material                                | Gold                                 |
| Fixing                                          | Threaded ring                        |
| Threaded ring torque, max.                      | 1.2 Nm                               |
| Terminal on the rear                            | M12 4-pin A-coded                    |
| PIN 1                                           | Normally open contact 1              |
| PIN 2                                           | LED +                                |
| PIN 3                                           | GND                                  |
| PIN 4                                           | Normally open contact 1              |
| <b>➤ electrical data</b>                        |                                      |
| Rated insulation voltage                        | 250 V                                |
| Rated surge voltage                             | 800 V                                |
| Rated operating voltage                         | 35 V (AC-15)<br>35 V (DC-13)         |
| Operating voltage of the luminous element, min. | 20 V                                 |
| Operating voltage of the luminous element, max. | 28 V                                 |
| Rated voltage, min.                             | 0.02 V                               |
| Rated voltage, max.                             | 35 V                                 |
| Rated voltage, max. acc. to UL 60947            | 30 V DC (42,4 V peak)                |
| Voltage type                                    | DC                                   |
| Rated operating current                         | 0.1 A                                |
| Rated operating voltage                         | 0.02-35 V                            |
| Rated current, min.                             | 0.00001 A                            |
| Rated current, max.                             | 0.1 A                                |
| Rated power, max.                               | 1 W                                  |
| Power loss                                      | 0.7 W                                |
| Overvoltage category                            | 2                                    |
| Kind of short circuit protective device         | fuse 250 V / 0,1 A / 1,5 kA gG quick |
| Conditional short circuit current               | 1,000 A                              |

## drawings

### Dimensioned drawing



### Mounting hole drawing



acc. to IEC 60947-5-1

Schematic diagram

