2

General data

RAFIX 22 FS control component range
• For a mounting hole diameter of 22.3 mm to IEC 60947
• Contact blocks with gold or silver contacts
• Depth behind panel only 9.2 mm
• Water-jet proof IP65
• 2 collar shapes
• The contact blocks can be combined with other components on the same PCB.

The specified data apply only if actuators/signal indicators are combined with contact blocks and lamp sockets within the same product range.

RAFIX 22 FS

Content

The new RAFIX 22 FS control component range **can be combined on a common printed circuit board together with short-travel keys and other components thanks to its extremely small mounting depth of 9.2 mm.**

The actuators and signal indicators are fastened to the front panel with a threaded ring in a 22.3 mm panel cut-out to IEC 60947. The cast-on collar seal made of thermoflex and an integrated special membrane provide a water-jet proof degree of protection IP 65 to DIN.

Screw-on front ring, made of plastic or metallized

Lens transparent (illuminated) or opaque

Diffuser (for transparent lenses only)

The contact blocks are soldered onto the PCB. Illumination of the actuator is provided by a 3 mm LED inserted into the base of the contact block and soldered to the PCB together with the contact block.

Actuator with O-ring seal and special membrane.

Housing with integrated cast-on collar seal, front panel thickness 1 – 3 mm

Threaded ring

The printed circuit board is fastened to the front panel with bolts, with the contact blocks sliding almost completely into the actuators. In this way an extremely low profile is achieved. Additional advantages: Individual wiring is made unnecessary and there is no more need for a cut-out in the PCB in the control component areas.

3 mm LED

Contact block (optionally with LED installed):
• 1 NC, 1 NO, 2 NC, 1 NC + 1 NO, 2 NO (colour-coded plungers: NC = red, NO = green)
• Gold contacts for 42 V max. (grey housing) or silver contacts for max. 250 V (black housing)
• Locating pip for correct assembly

Printed circuit board —

9,2 mm
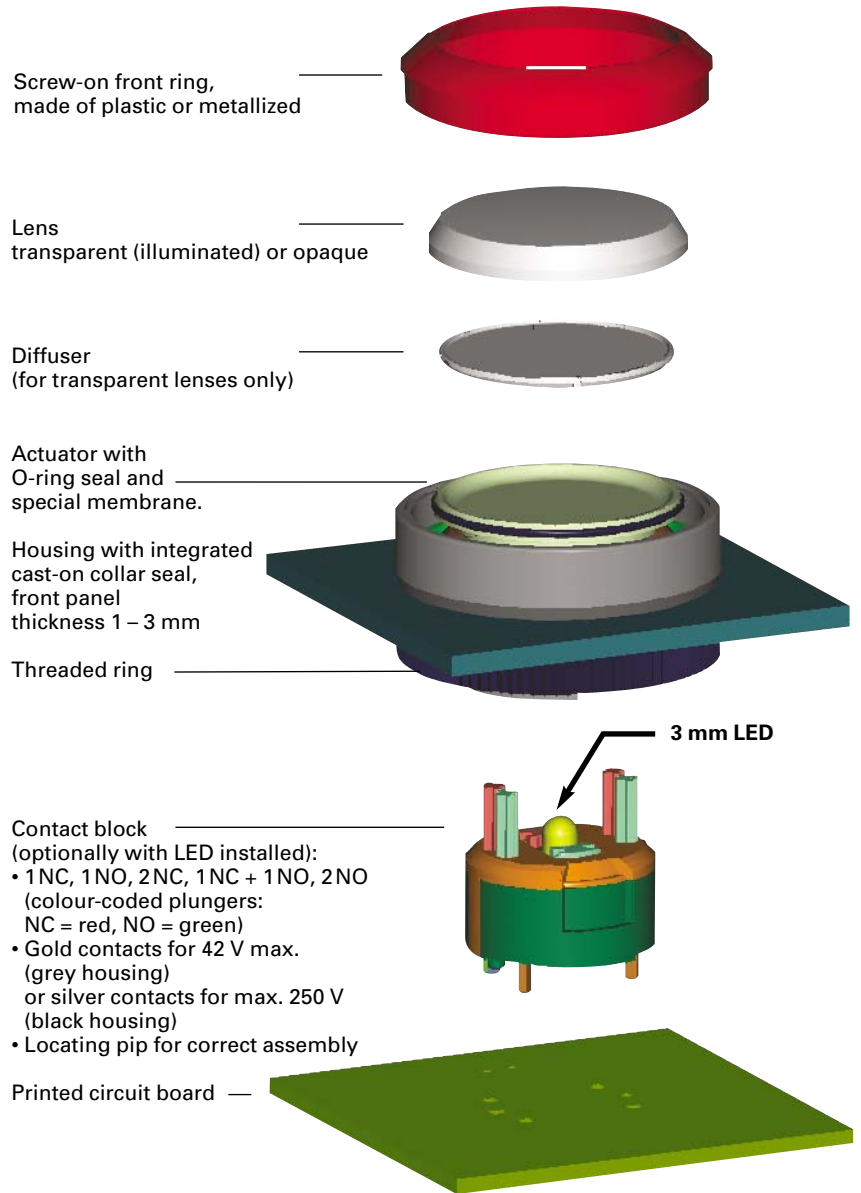
Combined with short-travel keys

The actuators of the RAFIX 22FS system are suited for integration into low-profile data entry systems. The small mounting depth and the PCB solder terminals make it possible to combine the contact blocks with RAFI short-travel keys RACON 8 an 12, RF 15 and RF 19 as well as KN 19 on one and the same printed circuit board.

Illumination

RAFIX 22 FS pushbuttons, selector switches and emergency stop buttons are also available as illuminated versions. For illumination, we recommend to use the superbright 3 mm LEDs in the colour matching the lens. The LEDs are fitted into the contact block and soldered together with it. The signal indicators are als illuminated with superbright LEDs soldered directly onto the printed circuit board. In order to ensure full illumination, the LED must be mounted on a base. Bases are available as accessories.

2
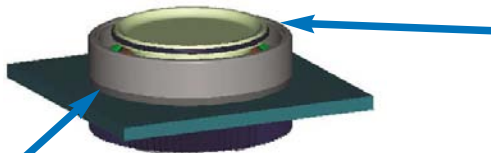
Sealed against moisture and dirt

O-ring seal
The O-ring seals the space between the lens and the actuator. The cast-on collar seal cannot be lost or distorted during assembly. During assembly, the actuator is held in the mounting hole by the cast-on seal and can then be fixed by screwing from the rear.

Cast-on collar seal

Special sealing
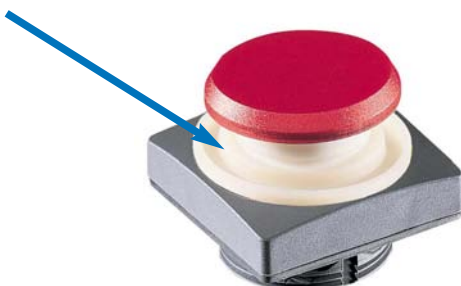
The special membrane seal safely prevents moisture, oil or dust from reaching the contact block.
In contrast with seals sliding up and down along the shaft, the special membrane seal is arranged in a fixed position on the housing. In this way, RAFIX 22 FS guarentees switching raliability for the full service life (degree of protection IP65 to DIN).

RAFI
SOLUTIONS WITH PASSION

2

RAFIX 22 FS

Numerous design options for individual panels

RAFIX 22 FS is available with many options. Various lens and frontring combinations offer nearly unlimited design options for your panels. RAFIX 22 FS ist available both with a round or a square collar.

The square version can be arranged one collar to the next just as an integral keypad.

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min. 30.00

3.20 +0.2

24.10 +0.4

Ø22.30 +0.4

min. 30.00
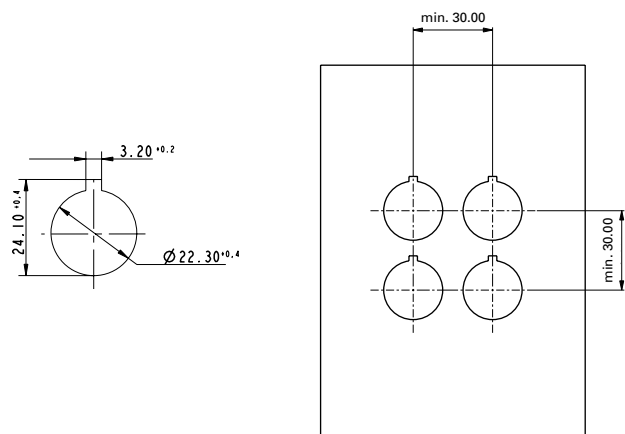
Panel cut-out to IEC 60947
All actuators are provided with a locating pip.

With a grid spacing of 30 mm, the collars of the square actuators are arranged next to each other without a space in between. We recommend to use this grid spacing also for the round collar shapes (IEC 60947).

Assembly indication
The mismatch of actuators and contact blocks must be in a range of ø 0.2 mm.

Hole patterns PCB, view on component side

Actuator position

⌖ Ø 0.2

Ø1.00
Ø1.60
Ø1.30
Ø1.80

7.80

NO contacts
(on version with 2 NC's, NC contacts)

Locating pip 2*

LED anode

Locating pip 1*
LED cathode

NC contacts
(on version with 2 NO's, NO contacts)

2.54
10.80
13.00
Ø27.50
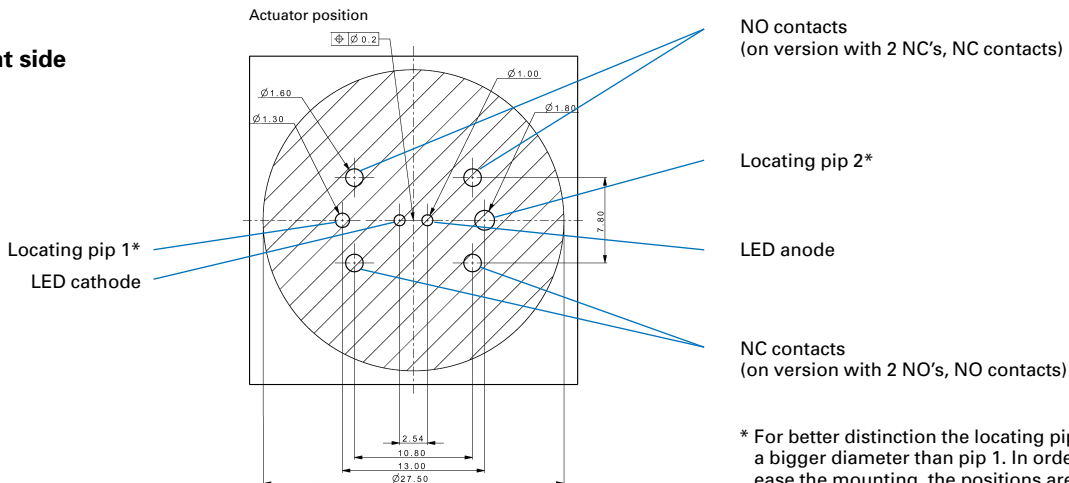
* For better distinction the locating pip 2 has a bigger diameter than pip 1. In order to ease the mounting, the positions are additionally marked on the upper side of the housing.

Control Components

RAFI
SOLUTIONS WITH PASSION

Installation drawing

2 - 151

Ø 30.00

33.00

9.20 ±0.10

1.00... 3.00

Front panel top edge

PCB top edge

Ø 29.80

9.85

RAFIX 22 FS emergency stop

RAFIX 22 FS pushbutton

RF 19 short-travel key

Front panel

Spacer

Printed circuit board

Captive nut

Stud

2

RAFIX 22 FS

RAFI
SOLUTIONS WITH PASSION

RAFIX 22 FS pushbuttons

Pict.: green/silver-grey   silver/blue   Panel cut-out to IEC 60947-5-1

2
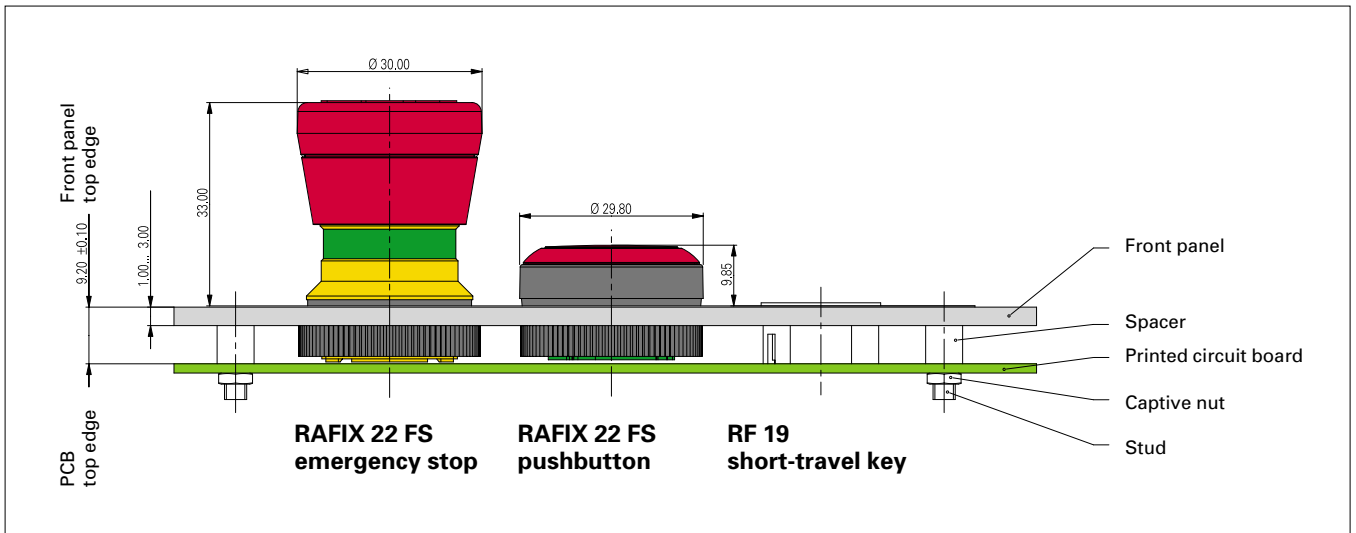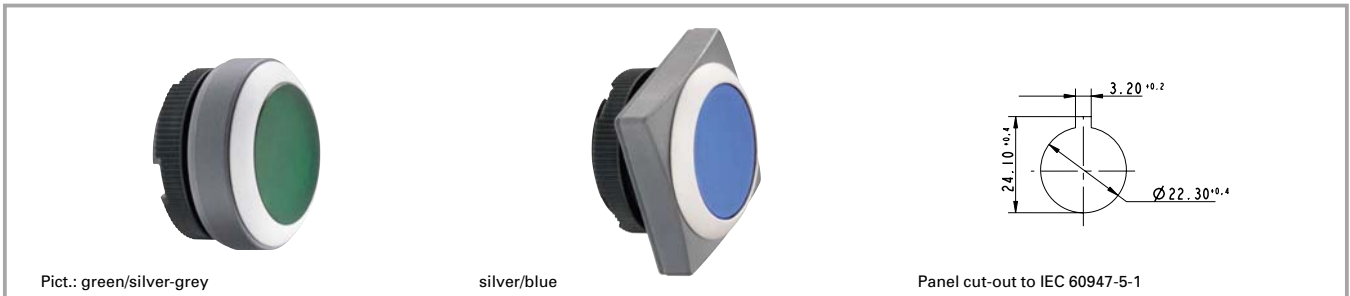
Technical data

General information
Form of lens	see order block
Colour of lens	see order block
Colout of front ring	see order block
Form of collar	see order block

Dimensions
Length of collar	see order block
Width of collar	see order block
Overall height	see order block
Mounting depth	9.2 mm
Mounting hole	22.3 mm
Key grid	30 x 30 mm
Diameter of collar	see order block

Mechanical design
Mounting	ring nut
Contact function	see order block
Illuminability	yes

Mechanical characteristics
Operating travel	4 mm
Robustness min.	100 N

Other specifications
Ambient temp. operating min.	-25 °C
Ambient temp. operating max.	+70 °C
Storage temperature min.	-40 °C
Storage temperature max.	+80 °C
Operating life	1 million momentary/ 0.5 million latching
Degree of protection from front side	IP65
Resistance to constant environment	IEC 600 68-2-3 and 2-30
Resistance at variable environment	IEC 600 68-2-14 and 2-33

RAFIX 22 FS

Accessories RAFIX 22 FS pushbuttons

Description	Photo	Order no.	Page
RAFIX 22 FS universal contact block, 1 NC + 1 NO, gold contacts		**1.20.126.003/0000**	2 - 175
RAFIX 22 FS universal contact block, silver contacts, 1 NO		**1.20.126.202/0000**	2 - 177
Fixing spanner for ring nut and front ring		**5.05.800.062/0000**	5 - 23

For additional accessories, refer to the chapter „Special accessories".

Control components

RAFI
SOLUTIONS WITH PASSION

RAFIX 22 FS pushbutton, flush lens, round collar
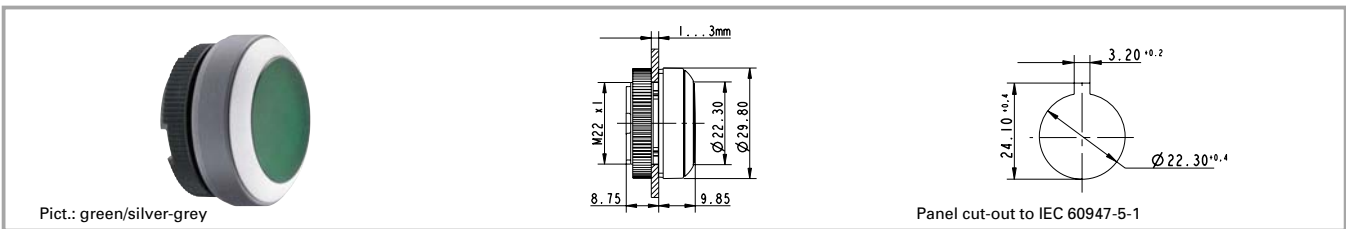
Pict.: green/silver-grey

Panel cut-out to IEC 60947-5-1

Illuminability	Colour of lens	Order no. momentary		Order no. latching	
		Plastic front ring	**Metallized front ring**	**Plastic front ring**	**Metallized front ring**
yes	transparent white	1.30.250.001/10xx	**1.30.250.021/1000**	1.30.250.011/10xx	**1.30.250.031/1000**
yes	transparent red	1.30.250.001/13xx	**1.30.250.021/1300**	1.30.250.011/13xx	**1.30.250.031/1300**
yes	transparent yellow	1.30.250.001/14xx	**1.30.250.021/1400**	1.30.250.011/14xx	**1.30.250.031/1400**
yes	transparent green	1.30.250.001/15xx	**1.30.250.021/1500**	1.30.250.011/15xx	**1.30.250.031/1500**
yes	transparent blue	1.30.250.001/16xx	**1.30.250.021/1600**	1.30.250.011/16xx	**1.30.250.031/1600**
no	opaque black	1.30.250.101/01xx	**1.30.250.121/0100**	1.30.250.111/01xx	1.30.250.131/0100
no	opaque white	1.30.250.101/02xx	**1.30.250.121/0200**	1.30.250.111/02xx	1.30.250.131/0200
no	opaque red	1.30.250.101/03xx	**1.30.250.121/0300**	1.30.250.111/03xx	1.30.250.131/0300
no	opaque yellow	1.30.250.101/04xx	**1.30.250.121/0400**	1.30.250.111/04xx	1.30.250.131/0400
no	opaque green	1.30.250.101/05xx	**1.30.250.121/0500**	1.30.250.111/05xx	1.30.250.131/0500
no	opaque blue	1.30.250.101/06xx	**1.30.250.121/0600**	1.30.250.111/06xx	1.30.250.131/0600
no	opaque slate-grey	1.30.250.101/07xx	**1.30.250.121/0700**	1.30.250.111/07xx	1.30.250.131/0700

Technical data see page 2 - 152

Accessoires:
Plastic frontring black protection cap: 5.05.004.986/0100
Plastic frontring red protection cap: 5.05.004.986/0300
Plastic frontring yellow protection cap: 5.05.004.986/0400
Plastic frontring green protection cap: 5.05.004.986/0500
Plastic frontring blue protection cap: 5.05.004.986/0600
Plastic frontring slate grey protection cap: 5.05.004.986/0700
Plastic frontring silver grey protection cap: 5.05.004.986/0800

xx = Front ring colour: black = 01, red = 03, yellow = 04, green = 05, blue = 06, slate grey = 07, silver grey = 08

Order numbers **1.30.250.001/--08** and **1.30.250.011/--08** (with silver grey plastic front ring) are **stock items**.

2

RAFIX
22 FS

RAFIX 22 FS pushbutton, protruding lens, round collar

Pict.: black/metallized

Panel cut-out to IEC 60947-5-1

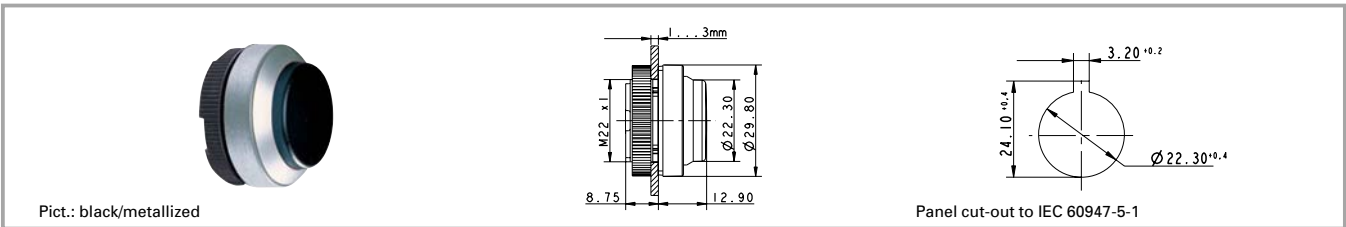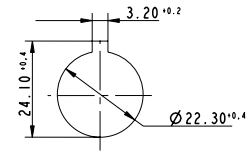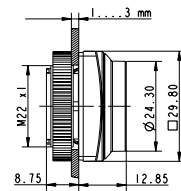| Illuminability	Colour of lens	Order no. momentary		Order no. latching	
		Plastic front ring	Metallized front ring	Plastic front ring	Metallized front ring
yes	transparent white	1.30.250.201/10xx	**1.30.250.221/1000**	1.30.250.211/10xx	**1.30.250.231/1000**
yes	transparent red	1.30.250.201/13xx	**1.30.250.221/1300**	1.30.250.211/13xx	**1.30.250.231/1300**
yes	transparent yellow	1.30.250.201/14xx	**1.30.250.221/1400**	1.30.250.211/14xx	**1.30.250.231/1400**
yes	transparent green	1.30.250.201/15xx	**1.30.250.221/1500**	1.30.250.211/15xx	**1.30.250.231/1500**
yes	transparent blue	1.30.250.201/16xx	**1.30.250.221/1600**	1.30.250.211/16xx	**1.30.250.231/1600**
no	opaque black	1.30.250.301/01xx	1.30.250.321/0100	1.30.250.311/01xx	1.30.250.331/0100
no	opaque white	1.30.250.301/02xx	1.30.250.321/0200	1.30.250.311/02xx	1.30.250.331/0200
no	opaque red	1.30.250.301/03xx	1.30.250.321/0300	1.30.250.311/03xx	1.30.250.331/0300
no	opaque yellow	1.30.250.301/04xx	1.30.250.321/0400	1.30.250.311/04xx	1.30.250.331/0400
no	opaque green	1.30.250.301/05xx	1.30.250.321/0500	1.30.250.311/05xx	1.30.250.331/0500
no	opaque blue	1.30.250.301/06xx	1.30.250.321/0600	1.30.250.311/06xx	1.30.250.331/0600
no	opaque slate-grey	1.30.250.301/07xx	1.30.250.321/0700	1.30.250.311/07xx	1.30.250.331/0700

Technical data see page 2 - 152

xx = Front ring colour: black = 01, red = 03, yellow = 04, green = 05, blue = 06, slate grey = 07, silver grey = 08

Order numbers **1.30.250.201/--08** and **1.30.250.211/--08** (with silver grey plastic front ring) are **stock items**.

Stock items are marked
by **bold printed** order numbers.

Control components

RAFIX 22 FS pushbutton, protruding front ring, round collar

Pict.: white/slate grey

Panel cut-out to IEC 60947-5-1

Illuminability	Colour of lens	Order no. momentary		Order no. latching	
		Plastic front ring	**Metallized front ring**	**Plastic front ring**	**Metallized front ring**
yes	transparent white	1.30.250.401/10xx	1.30.250.421/1000	-	-
yes	transparent red	1.30.250.401/13xx	1.30.250.421/1300	-	-
yes	transparent yellow	1.30.250.401/14xx	1.30.250.421/1400	-	-
yes	transparent green	1.30.250.401/15xx	1.30.250.421/1500	-	-
yes	transparent blue	1.30.250.401/16xx	1.30.250.421/1600	-	-
no	opaque black	1.30.250.501/01xx	1.30.250.521/0100	-	-
no	opaque white	1.30.250.501/02xx	1.30.250.521/0200	-	-
no	opaque red	1.30.250.501/03xx	1.30.250.521/0300	-	-
no	opaque yellow	1.30.250.501/04xx	1.30.250.521/0400	-	-
no	opaque green	1.30.250.501/05xx	1.30.250.521/0500	-	-
no	opaque blue	1.30.250.501/06xx	1.30.250.521/0600	-	-
no	opaque slate-grey	1.30.250.501/07xx	1.30.250.521/0700	-	-

Technical data see page 2 - 152

xx = Front ring colour: black = 01, red = 03, yellow = 04, green = 05, blue = 06, slate grey = 07, silver grey = 08

2

RAFIX
22 FS

RAFIX 22 FS pushbutton, flush lens, square collar
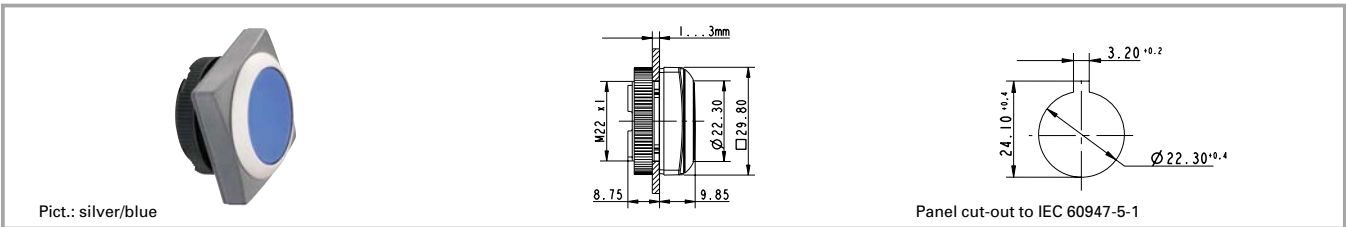
Pict.: silver/blue

Panel cut-out to IEC 60947-5-1

Illuminability	Colour of lens	Order no. momentary		Order no. latching	
		Plastic front ring	**Metallized front ring**	**Plastic front ring**	**Metallized front ring**
yes	transparent white	1.30.250.051/10xx	**1.30.250.071/1000**	1.30.250.061/10xx	**1.30.250.081/1000**
yes	transparent red	1.30.250.051/13xx	**1.30.250.071/1300**	1.30.250.061/13xx	**1.30.250.081/1300**
yes	transparent yellow	1.30.250.051/14xx	**1.30.250.071/1400**	1.30.250.061/14xx	**1.30.250.081/1400**
yes	transparent green	1.30.250.051/15xx	**1.30.250.071/1500**	1.30.250.061/15xx	**1.30.250.081/1500**
yes	transparent blue	1.30.250.051/16xx	**1.30.250.071/1600**	1.30.250.061/16xx	**1.30.250.081/1600**
no	opaque black	1.30.250.151/01xx	**1.30.250.171/0100**	1.30.250.161/01xx	1.30.250.181/0100
no	opaque white	1.30.250.151/02xx	**1.30.250.171/0200**	1.30.250.161/02xx	1.30.250.181/0200
no	opaque red	1.30.250.151/03xx	**1.30.250.171/0300**	1.30.250.161/03xx	1.30.250.181/0300
no	opaque yellow	1.30.250.151/04xx	**1.30.250.171/0400**	1.30.250.161/04xx	1.30.250.181/0400
no	opaque green	1.30.250.151/05xx	**1.30.250.171/0500**	1.30.250.161/05xx	1.30.250.181/0500
no	opaque blue	1.30.250.151/06xx	**1.30.250.171/0600**	1.30.250.161/06xx	1.30.250.181/0600
no	opaque slate-grey	1.30.250.151/07xx	**1.30.250.171/0700**	1.30.250.161/07xx	1.30.250.181/0700

Technical data see page 2 - 152

Accessoires:
Plastic frontring black protection cap: 5.05.004.986/0100
Plastic frontring red protection cap: 5.05.004.986/0300
Plastic frontring yellow protection cap: 5.05.004.986/0400
Plastic frontring green protection cap: 5.05.004.986/0500
Plastic frontring blue protection cap: 5.05.004.986/0600
Plastic frontring slate grey protection cap: 5.05.004.986/0700
Plastic frontring silver grey protection cap: 5.05.004.986/0800

xx = Front ring colour: black = 01, red = 03, yellow = 04, green = 05, blue = 06, slate grey = 07, silver grey = 08

Order numbers **1.30.250.051/--08** and **1.30.250.061/--08** (with silver grey plastic front ring) are **stock items**.

Stock items are marked
by **bold printed** order numbers.

Control components

RAFIX 22 FS pushbutton, protruding lens, square collar
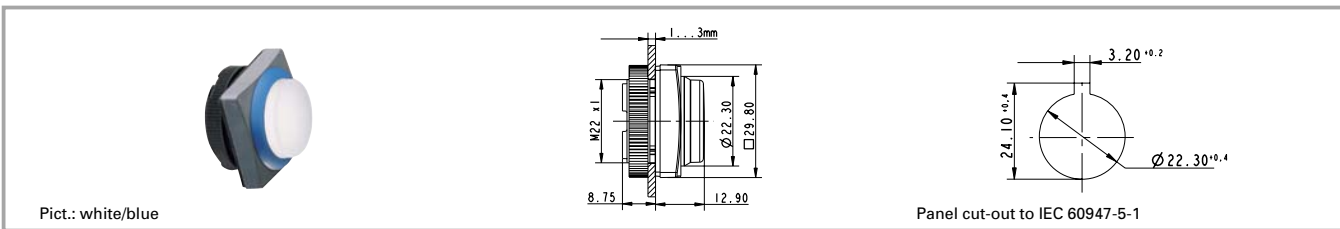
Pict.: white/blue

Panel cut-out to IEC 60947-5-1

Illuminability	Colour of lens	Order no. momentary		Order no. latching	
		Plastic front ring	**Metallized front ring**	**Plastic front ring**	**Metallized front ring**
yes	transparent white	1.30.250.251/10xx	**1.30.250.271/1000**	1.30.250.261/10xx	**1.30.250.281/1000**
yes	transparent red	1.30.250.251/13xx	**1.30.250.271/1300**	1.30.250.261/13xx	**1.30.250.281/1300**
yes	transparent yellow	1.30.250.251/14xx	**1.30.250.271/1400**	1.30.250.261/14xx	**1.30.250.281/1400**
yes	transparent green	1.30.250.251/15xx	**1.30.250.271/1500**	1.30.250.261/15xx	**1.30.250.281/1500**
yes	transparent blue	1.30.250.251/16xx	**1.30.250.271/1600**	1.30.250.261/16xx	**1.30.250.281/1600**
no	opaque black	1.30.250.351/01xx	1.30.250.371/0100	1.30.250.361/01xx	1.30.250.381/0100
no	opaque white	1.30.250.351/02xx	1.30.250.371/0200	1.30.250.361/02xx	1.30.250.381/0200
no	opaque red	1.30.250.351/03xx	1.30.250.371/0300	1.30.250.361/03xx	1.30.250.381/0300
no	opaque yellow	1.30.250.351/04xx	1.30.250.371/0400	1.30.250.361/04xx	1.30.250.381/0400
no	opaque green	1.30.250.351/05xx	1.30.250.371/0500	1.30.250.361/05xx	1.30.250.381/0500
no	opaque blue	1.30.250.351/06xx	1.30.250.371/0600	1.30.250.361/06xx	1.30.250.381/0600
no	opaque slate-grey	1.30.250.351/07xx	1.30.250.371/0700	1.30.250.361/07xx	1.30.250.381/0700

2

Technical data see page 2 - 152

xx = Front ring colour: black = 01, red = 03, yellow = 04, green = 05, blue = 06, slate grey = 07, silver grey = 08

Order numbers **1.30.250.251/--08** and **1.30.250.261/--08** (with silver grey plastic front ring) are **stock items**.
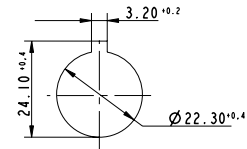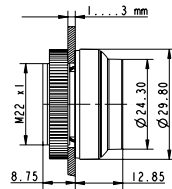
RAFI
SOLUTIONS WITH PASSION

RAFIX 22 FS pushbutton, protruding front ring

Pict.: green/metallized

Panel cut-out to IEC 60947-5-1

2

**RAFIX
22 FS**

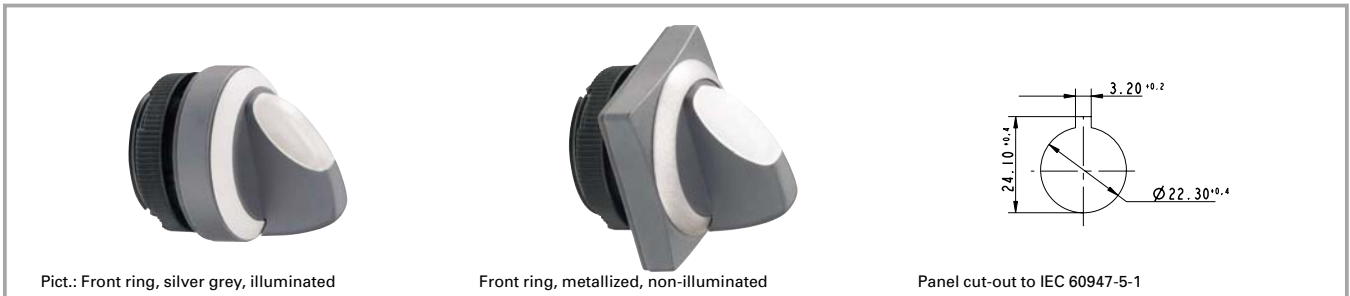| Illuminability	Colour of lens	Order no. momentary		Order no. latching	
		Plastic front ring	**Metallized front ring**	**Plastic front ring**	**Metallized front ring**
yes	transparent white	1.30.250.451/10xx	1.30.250.471/1000	-	-
yes	transparent red	1.30.250.451/13xx	1.30.250.471/1300	-	-
yes	transparent yellow	1.30.250.451/14xx	1.30.250.471/1400	-	-
yes	transparent green	1.30.250.451/15xx	1.30.250.471/1500	-	-
yes	transparent blue	1.30.250.451/16xx	1.30.250.471/1600	-	-
no	opaque black	1.30.250.551/01xx	1.30.250.571/0100	-	-
no	opaque white	1.30.250.551/02xx	1.30.250.571/0200	-	-
no	opaque red	1.30.250.551/03xx	1.30.250.571/0300	-	-
no	opaque yellow	1.30.250.551/04xx	1.30.250.571/0400	-	-
no	opaque green	1.30.250.551/05xx	1.30.250.571/0500	-	-
no	opaque blue	1.30.250.551/06xx	1.30.250.571/0600	-	-
no	opaque slate-grey	1.30.250.551/07xx	1.30.250.571/0700	-	-

Technical data see page 2 - 152

xx = Front ring colour: black = 01, red = 03, yellow = 04, green = 05, blue = 06, slate grey = 07, silver grey = 08

Stock items are marked
by **bold printed** order numbers.

Control components

RAFIX 22 FS selector switches

Pict.: Front ring, silver grey, illuminated   Front ring, metallized, non-illuminated   Panel cut-out to IEC 60947-5-1

2

General data

The illuminated selector switches are provided with translucent handle markings. These are opaque on the non-illuminated versions.

Technical data

General information

Actuator	handle
Marking of handle	translucent/opaque white
Colout of front ring	see order block
Form of collar	see order block

Dimensions

Length of collar	see order block
Width of collar	see order block
Overall height	22.24 mm
Mounting depth	9.2 mm
Mounting hole	22.3 mm
Key grid	30 x 30 mm
Diameter of collar	see order block

Mechanical design

Mounting	ring nut
Contact function	see order block
Illuminability	yes
Rotating angle	see order block

Mechanical characteristics

Torque max.	1,5 Nm

Other specifications

Operating life	0.5 million momentary / 0.5 million latching
Degree of protection from front side	IP65
Ambient temp. operating min.	-25 °C
Ambient temp. operating max.	+70 °C
Storage temperature min.	-40 °C
Storage temperature max.	+80 °C
Resistance to constant environment	IEC 600 68-2-3 and 2-30
Resistance at variable environment	IEC 600 68-2-14 and 2-33

Accessories RAFIX 22 FS selector switches

Description	Photo	Order no.	Page
RAFIX 22 FS universal contact block, 1 NO		**1.20.126.002/0000**	2 - 175
RAFIX 22 FS universal contact block, silver contacts, 1 NC		**1.20.126.201/0000**	2 - 177

For additional accessories, refer to the chapter „Special accessories".

Stock items are marked by **bold printed** order numbers.

Control components

RAFIX 22 FS selector switch, round collar

Pict.: Front ring, silver grey, illuminated
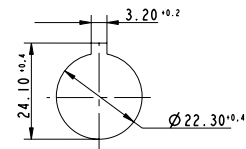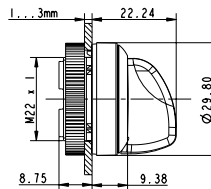
Panel cut-out to IEC 60947-5-1

Illuminability	Contact function	Rotating angle	Rotating angle	Order no.	
				Plastic front ring	Metal front ring
yes	momentary	1 x 40°		1.30.252.001/22xx	**1.30.252.002/2200**
yes	momentary	2 x 40°		1.30.252.026/22xx	**1.30.252.027/2200**
yes	latching	1 x 90°, form L		1.30.252.101/22xx	**1.30.252.102/2200**
yes	latching	1 x 90°, form V		1.30.252.201/22xx	**1.30.252.202/2200**
yes	latching	2 x 60°		1.30.252.301/22xx	**1.30.252.302/2200**
yes	latching	2 x 90°		1.30.252.126/22xx	1.30.252.127/2200
no	momentary	1 x 40°		1.30.252.501/02xx	**1.30.252.502/0200**
no	momentary	2 x 40°		1.30.252.526/02xx	**1.30.252.527/0200**
no	latching	1 x 90°, form L		1.30.252.601/02xx	**1.30.252.602/0200**
no	latching	1 x 90°, form V		1.30.252.701/02xx	**1.30.252.702/0200**
no	latching	2 x 60°		1.30.252.801/02xx	**1.30.252.802/0200**
no	latching	2 x 90°		1.30.252.626/02xx	1.30.252.627/0200

Technical data see page 2 - 160

xx = Front ring colour: black = 01, red = 03, yellow = 04, green = 05, blue = 06, slate grey = 07, silver grey = 08

Other contact functions and handle marking colours available on request.

The following selector switches with silver grey plastic front ring are stock items:
Illuminated: **1.30.242.001/2208**, **1.30.242.026/2208**, **1.30.242.101/2208**, **1.30.242.201/2208**, **1.30.242.301/2208**
Non-illuminated: **1.30.242.501/0208**, **1.30.242.526/0208**, **1.30.242.601/0208**, **1.30.242.701/0208**, **1.30.242.801/0208**

2

RAFIX
22 FS

RAFIX 22 FS selector switch, square collar

Pict.: Front ring, metallized, illuminated
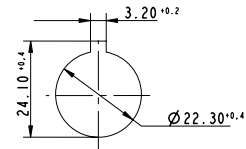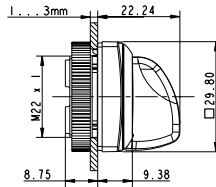
Panel cut-out to IEC 60947-5-1

Illuminability	Contact function	Rotating angle	Rotating angle	Order no.	
				Plastic front ring	Metal front ring
yes	momentary	1 x 40°		1.30.252.051/22xx	**1.30.252.052/2200**
yes	momentary	2 x 40°		1.30.252.076/22xx	**1.30.252.077/2200**
yes	latching	1 x 90°, form L		1.30.252.151/22xx	**1.30.252.152/2200**
yes	latching	1 x 90°, form V		1.30.252.251/22xx	**1.30.252.252/2200**
yes	latching	2 x 60°		1.30.252.351/22xx	**1.30.252.352/2200**
yes	latching	2 x 90°		1.30.252.176/22xx	1.30.252.177/2200
no	momentary	1 x 40°		1.30.252.551/02xx	**1.30.252.552/0200**
no	momentary	2 x 40°		1.30.252.576/02xx	**1.30.252.577/0200**
no	latching	1 x 90°, form L		1.30.252.651/02xx	**1.30.252.652/0200**
no	latching	1 x 90°, form V		1.30.252.751/02xx	**1.30.252.752/0200**
no	latching	2 x 60°		1.30.252.851/02xx	**1.30.252.852/0200**
no	latching	2 x 90°		1.30.252.676/02xx	1.30.252.677/0200

Technical data see page 2 - 160

xx = Front ring colour: black = 01, red = 03, yellow = 04, green = 05, blue = 06, slate grey = 07, silver grey = 08

Other contact functions and handle marking colours available on request.

The following selector switches with silver grey plastic front ring are stock items:
Illuminated: **1.30.252.051/2205**, **1.30.252.076/2208**, **1.30.252.151/2208**, **1.30.252.251/2208**, **1.30.252.351/2208**
Non-illuminated: **1.30.252.551/0208**, **1.30.252.576/0208**, **1.30.252.651/0208**, **1.30.252.751/0208**, **1.30.252.851/0208**

Stock items are marked by **bold printed** order numbers.

Control components

RAFIX 22 FS keylock switch

Pict.: Front ring blue

Front ring red

Panel cut-out to IEC 60947-5-1

Technical data

General information
Colout of front ring   see order block
Form of collar   see order block

Dimensions
Length of collar   see order block
Width of collar   see order block
Overall height   44.1 mm
Mounting depth   9.2 mm
Mounting hole   22.3 mm
Key grid   30 x 30 mm
Diameter of collar   see order block

Mechanical design
Mounting   ring nut
Contact function   see order block
Lock   Micromec
Illuminability   no
Wafers   5
Lock type   001
Number of locking
positions   500
Main key   no
Symmetric key   no
Rotating angle   see order block
Key removal position   see order block

Mechanical characteristics
Torque max.   1,3 Nm

Other specifications
Operating life   0.3 million momentary / 50000 latching

Degree of protection
from front side   IP65
Ambient temp. operating
min.   -25 °C
Ambient temp. operating
max.   +70 °C
Storage temperature min.   -40 °C
Storage temperature max.   +80 °C
Resistance to constant
environment   IEC 600 68-2-3 and 2-30
Resistance at variable
environment   IEC 600 68-2-14 and 2-33
ESD-strength lock /
contact   15 kV
ESD-strength key/ front
panel   15 kV

Accessories RAFIX 22 FS keylock switch

Description	Photo	Order no.	Page
RAFIX 22 FS universal contact block, 1 NC		**1.20.126.001/0000**	2 - 175
RAFIX 22 FS universal contact block, silver contacts, 1 NC, 1 NO		**1.20.126.203/0000**	2 - 177
Spare key, for single action, e.g. 1 x 90°		5.58.007.001/0000	
Spare key, for double action, e.g. 2 x 90°		5.58.008.001/0000	

For additional accessories, refer to the chapter „Special accessories".

Stock items are marked
by **bold printed** order numbers.

RAFIX 22 FS keylock switch, round collar
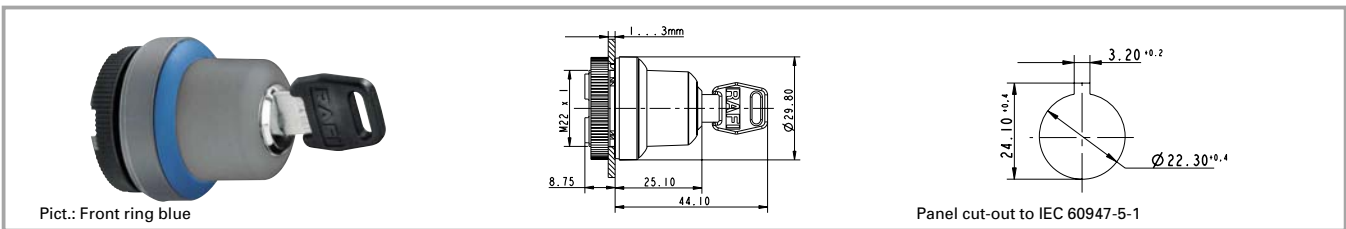
Pict.: Front ring blue

Panel cut-out to IEC 60947-5-1

Contact function	Rotating angle	Key removal position	Rotating angle	Order no.	
				Plastic front ring	**Metal front ring**
momentary	1 x 40°	0		1.30.255.001/xxxx	**1.30.255.002/0000**
momentary	2 x 40°	0		1.30.255.101/xxxx	1.30.255.102/0000
latching	1 x 90°, form L	0		1.30.255.201/xxxx	**1.30.255.202/0000**
latching	1 x 90°, form L	0+1		1.30.255.221/xxxx	**1.30.255.222/0000**
latching	1 x 90°, form L	1		1.30.255.211/xxxx	1.30.255.212/0000
latching	1 x 90°, form V	0		1.30.255.301/xxxx	**1.30.255.302/0000**
latching	1 x 90°, form V	0+1		1.30.255.321/xxxx	**1.30.255.322/0000**
latching	1 x 90°, form V	1		1.30.255.311/xxxx	1.30.255.312/0000
latching	2 x 90°	0		1.30.255.401/xxxx	1.30.255.402/0000
latching	2 x 90°	0+1		1.30.255.411/xxxx	1.30.255.412/0000
latching	2 x 90°	0+1+2		1.30.255.431/xxxx	**1.30.255.432/0000**
latching	2 x 90°	0+2		1.30.255.421/xxxx	1.30.255.422/0000

2

RAFIX 22 FS

Technical data see page 2 - 164

xxxx = Front ring colour: black = 0100, red = 0300, yellow = 0400, green = 0500, blue = 0600, slate grey = 0700, silver grey = 0800

Other lock variants available on request.
Included: 2 keys.

The following keylock switches with silver grey plastic front ring are stock items: **1.30.255.001/0800**, **1.30.255.201/0800**, **1.30.255.221/0800**, **1.30.255.301/0800**, **1.30.255.321/0800**, **1.30.255.431/0800**

RAFIX 22 FS keylock switch, square collar
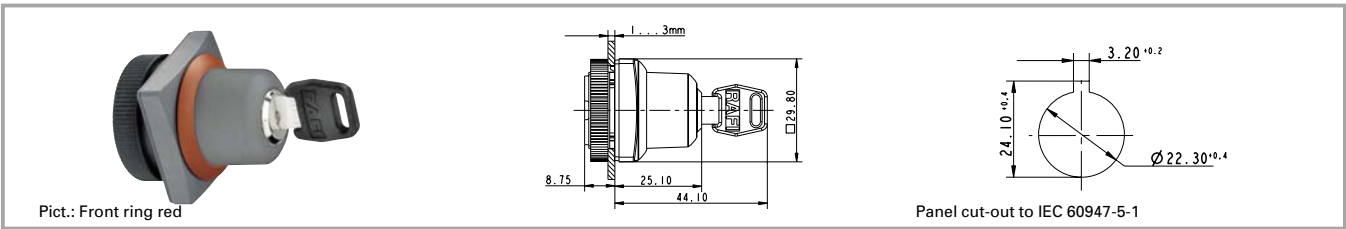
Pict.: Front ring red

Panel cut-out to IEC 60947-5-1

Contact function	Rotating angle	Key removal position	Rotating angle	Order no.	
				Plastic front ring	Metal front ring
momentary	1 x 40°	0		1.30.255.051/xxxx	**1.30.255.052/0000**
momentary	2 x 40°	0		1.30.255.151/xxxx	1.30.255.152/0000
latching	1 x 90°, form L	0		1.30.255.251/xxxx	**1.30.255.252/0000**
latching	1 x 90°, form L	0+1		1.30.255.271/xxxx	**1.30.255.272/0000**
latching	1 x 90°, form L	1		1.30.255.261/xxxx	1.30.255.262/0000
latching	1 x 90°, form V	0		1.30.255.351/xxxx	**1.30.255.352/0000**
latching	1 x 90°, form V	0+1		1.30.255.371/xxxx	**1.30.255.372/0000**
latching	1 x 90°, form V	1		1.30.255.361/xxxx	1.30.255.362/0000
latching	2 x 90°	0		1.30.255.451/xxxx	1.30.255.452/0000
latching	2 x 90°	0+1		1.30.255.461/xxxx	1.30.255.462/0000
latching	2 x 90°	0+1+2		1.30.255.481/xxxx	**1.30.255.482/0000**
latching	2 x 90°	0+2		1.30.255.471/xxxx	1.30.255.472/0000

Technical data see page 2 - 164

xxxx = Front ring colour: black = 0100, red = 0300, yellow = 0400, green = 0500, blue = 0600, slate grey = 0700, silver grey = 0800

Other lock variants available on request.
Included: 2 keys.

The following keylock switches with silver grey plastic front ring are stock items: **1.30.255.051/0800**, **1.30.255.251/0800**, **1.30.255.271/0800**, **1.30.255.351/0800**, **1.30.255.371/0800**, **1.30.255.481/0800**

Stock items are marked by **bold printed** order numbers.

Control components

RAFIX 22 FS emergency stop pushbutton

Pict.: red

1...3

M22x1

Ø 30.00

8.90   33.20

3.20 +0.2

24.10 +0.4

Ø 22.30 +0.4

Panel cut-out to IEC 60947-5-1
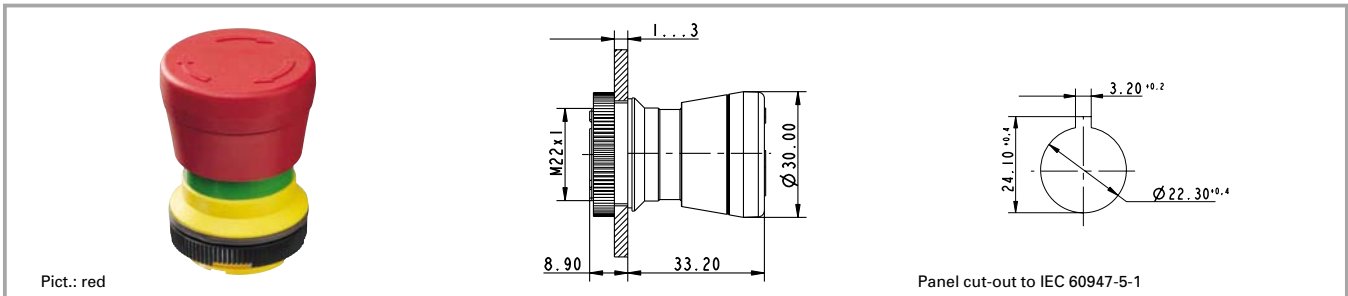
2

General data

The emergency stop pushbuttons comply with IEC 60 204, IEC 60 073, IEC 60 947 and VDE 0113 Part 1.
They are designed dupe-proof according to EN 418 with a positive mechanical movement sequence. A certain operating force must be exerted at the action point in order to prevent inadvertent operation. The pushbutton latches when pressed. The special shape of the actuator prevents the emergency stop pushbutton from being blocked. This means that the emergency stop process - once initiated - cannot be impeded by any jamming objects.

Only use contact block 1.20.126.4xx.

Technical data

RAFIX
22 FS

General information
Form of lens	conical mushroom form
Colour of lens	red
Form of collar	round

Dimensions
Mushroom Diameter	30 mm
Overall height	see order block
Mounting depth	see order block
Mounting hole	see order block
Key grid	30 x 30 mm
Diameter of collar	see order block

Mechanical design
Mounting	ring nut
Contact function	latching
Illuminability	see order block
Reset	see order block

Mechanical characteristics
Robustness min.	100 N

Other specifications
Ambient temp. operating min.	-25 °C
Ambient temp. operating max.	+70 °C
Approvals acc. to IEC	60947-5-x, 60204, 60073, 601058
Approvals, other	UL 508, CSA, cURus (UL + CSA)
Robustness	acc. to IEC 600 68-2-3 and 2-30
Operating life	50000
Degree of protection from front side	IP65
Storage temperature min.	-40 °C
Storage temperature max.	+80 °C
Resistance to constant environment	IEC 600 68-2-3 and 2-30
Resistance at variable environment	IEC 600 68-2-14 and 2-33

Accessories RAFIX 22 FS emergency stop pushbutton

Description	Photo	Order no.	Page
RAFIX 22 FS emergency stop contact block, 1 NC, gold contacts		**1.20.126.401/0000**	2 - 175
RAFIX 22 FS emergency stop contact block, 2 NC, gold contacts		**1.20.126.404/0000**	2 - 175

Stock items are marked by **bold printed** order numbers.

Control components

RAFI
SOLUTIONS WITH PASSION

Accessories RAFIX 22 FS emergency stop pushbutton
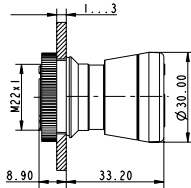
Description	Photo	Order no.	Page
RAFIX 22 FS emergency stop contact block, silver contacts, 1 NC		**1.20.126.601/0000**	2 - 177
Fixing spanner for ring nut and front ring		**5.05.800.062/0000**	5 - 23
Emergency stop label, yellow, round 60 mm, PVC adhesive, without legend		5.76.204.100/0400	2 - 146
Emergency stop label, yellow, round 60 mm, PVC adhesive, with legend „NOT-AUS"		**5.76.204.101/0400**	2 - 146
Emergency stop label, yellow, round 60 mm, PVC adhesive, with legend „ARRET D'URGENCE"		5.76.204.102/0400	2 - 146
Emergency stop label, yellow, round 60 mm, PVC adhesive, with legend „EMERGENCY-STOP"		**5.76.204.103/0400**	2 - 146
Emergency stop label, yellow 36 x 64 mm, PVC adhesive, without legend		5.76.205.011/0400	2 - 146
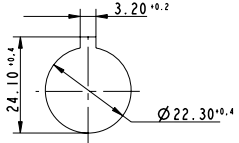
2

RAFIX 22 FS emergency stop pushbutton, non-illuminated, dupe-proof to EN 418, non-blocking

Pict.: red

M22x1 Ø 30.00 1...3 8.90 33.20

3.20 +0.2 24.10 +0.4 Ø 22.30 +0.4

Panel cut-out to IEC 60947-5-1

RAFIX 22 FS

Reset	Illuminability	Approvals acc. to IEC	Order no.
by clockwise rotation	no	60947-5-x, 60204, 60073, 601058	**1.30.253.501/0300**

Technical data see page 2 - 168

Stock items are marked by **bold printed** order numbers.

RAFIX 22 FS emergency stop pushbutton, illuminated, dupe-proof to EN 418, non-blocking

Pict.: red

M22x1
Ø30.00
8.90   33.20   l...3

3.20 +0.2
24.10 +0.4
Ø22.30 +0.4

Panel cut-out to IEC 60947-5-1
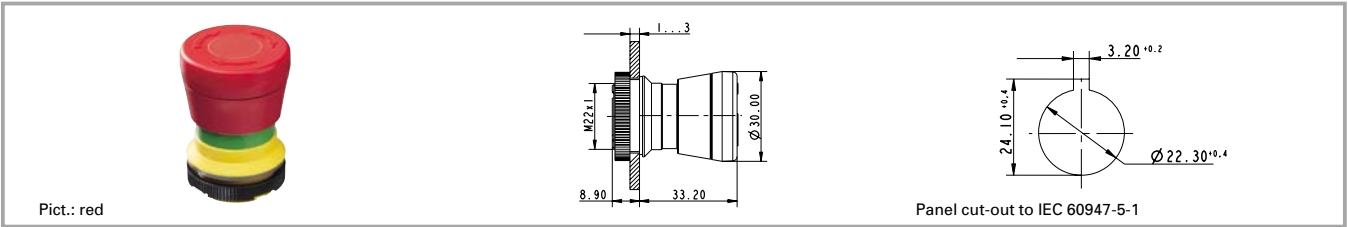
Reset	Illuminability	Approvals acc. to IEC	Order no.
by clockwise rotation	yes	60947-5-x, 60204, 60073, 601058	**1.30.253.001/0300**

Technical data see page 2 - 168

NEW

RAFIX 22 FS emergency stop pushbutton, illuminated, dupe-proof to EN 418, non-blocking

Pict.: red

M22x1
Ø30.00
8.90   33.20   l...3

3.20 +0.2
24.10 +0.4
Ø22.30 +0.4

Panel cut-out to IEC 60947-5-1
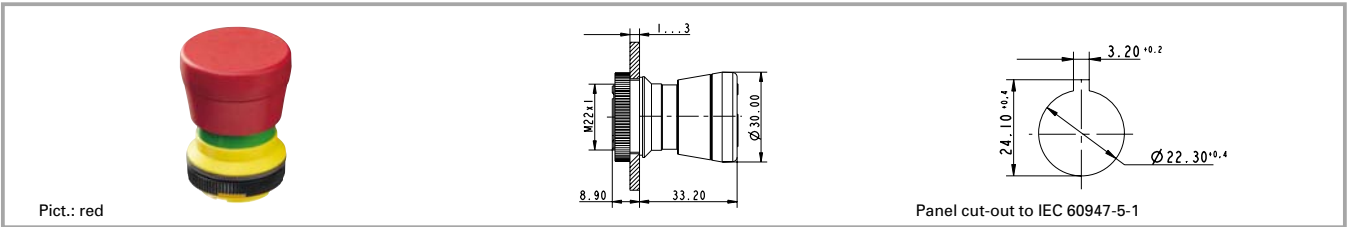
Reset	Illuminability	Approvals acc. to IEC	Order no.
by pulling	no	60947-5-x, 60204, 60073, 601058	**1.30.253.601/0300**

Technical data see page 2 - 168

Control components

RAFI
SOLUTIONS WITH PASSION

RAFIX 22 FS signal indicator

Pict.: yellow

1...3mm

M 22.00x1

Ø 29.80

8.75   9.70

3.20 +0.2

24.10 +0.4

Ø 22.30 +0.4

Panel cut-out to IEC 60947-5-1

2

Technical data

General information
Form of lens   flat lens
Colour of lens   see order block
Form of collar   see order block

Dimensions
Length of collar   see order block
Width of collar   see order block
Overall height   9.7 mm
Mounting depth   9.2 mm
Mounting hole   22.3 mm
Key grid   30 x 30 mm
Diameter of collar   see order block

Mechanical design
Mounting   ring nut
Illuminability   yes

Mechanical characteristics
Robustness min.   100 N

Other specifications
Degree of protection
from front side   IP65
Ambient temp. operating
min.   -25 °C
Ambient temp. operating
max.   +70 °C
Storage temperature min.   -40 °C
Storage temperature max.   +80 °C
Resistance to constant
environment   IEC 600 68-2-3 and 2-30
Resistance at variable
environment   IEC 600 68-2-14 and 2-33

RAFIX 22 FS

Accessories RAFIX 22 FS signal indicator

Description	Photo	Order no.	Page
3 mm LED superbright red		1.90.690.269/0000	5 - 20
Fixing spanner for ring nut and front ring		**5.05.800.062/0000**	5 - 23
LED base for signal indicators		**5.30.109.020/0756**	2 - 179
Legend insert, blank		5.70.806.000/2000	

Control components

RAFI
SOLUTIONS WITH PASSION

RAFIX 22 FS signal indicator, round collar

Pict.: yellow | Panel cut-out to IEC 60947-5-1
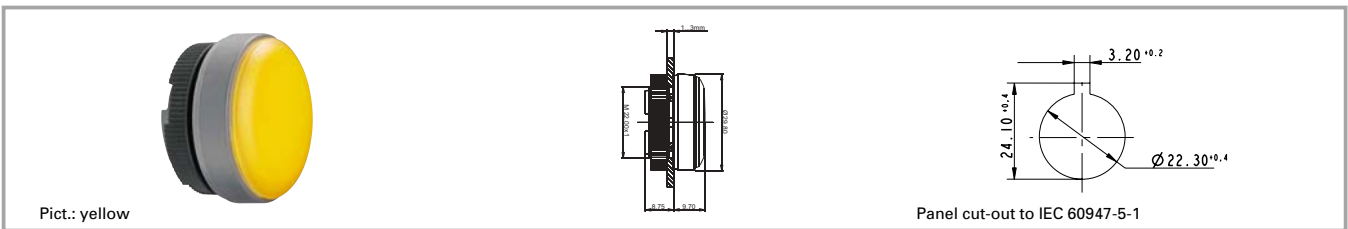
Form of collar	Colour of lens	Order no.
round	transparent colourless	**1.74.506.001/1000**
round	transparent red	**1.74.506.001/1300**
round	transparent yellow	**1.74.506.001/1400**
round	transparent green	**1.74.506.001/1500**
round	transparent blue	**1.74.506.001/1600**

Technical data see page 2 - 172

RAFIX 22 FS signal indicator, square collar

Pict.: red | Panel cut-out to IEC 60947-5-1
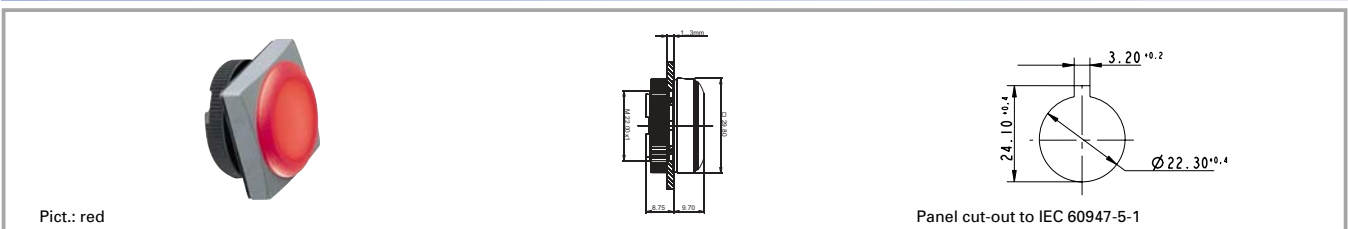
Form of collar	Colour of lens	Order no.
square	transparent colourless	**1.74.506.051/1000**
square	transparent red	**1.74.506.051/1300**
square	transparent yellow	**1.74.506.051/1400**
square	transparent green	**1.74.506.051/1500**
square	transparent blue	**1.74.506.051/1600**

Technical data see page 2 - 172

RAFIX
22 FS

Control components

Stock items are marked
by **bold printed** order numbers.

RAFI
SOLUTIONS WITH PASSION

RAFIX 22 FS contact blocks with gold contacts

Pict.: Universal contact block, 1 NC + 1 NO, gold contacts   Emergency stop contact block, gold contacts, 2 NC

2

General data

Illumination information:
The contact blocks are suitable for use with illuminated actuators: Insert the desired LED into the integrated LED base and subsequently solder it together with the contact block.
We strongly recommend using the Rafi superbright LED since this ensures homogeneous illumination.

Technical data

RAFIX
22 FS

General information		Approvals acc. to IEC	60947-5-x, 60204, 60073, 601058
Lamp	LED	Approvals, other	UL 508, CSA, cURus (UL + CSA)
Dimensions			
Diameter	17.3 mm	Ambient temp. operating min.	-25 °C
Recommended key grid	30 mm	Ambient temp. operating max.	+70 °C
Mounting depth	9.2 mm	Storage temperature min.	-40 °C
		Storage temperature max.	+80
Mechanical design		Colour of plunger	see order block
Mounting	soldering in PCB	Robustness	acc. to IEC 60947-5-5 (TÜV)
Contact system	bridgecontact self cleaning		
Contact materials	Au	Shock resistance acc. to	
Contact arrangement	see order block	IEC 600 68-2-27	50 g at 11 ms, amplitude half sinusoidal
NC contact forcibly actuated acc. to IEC 60947-5-1	yes		
Terminals	solder terminal with locating lug	Resistance to vibrations acc. to IEC 600 68-2-6	5 g at 10 ... 500 Hz
Robustness	100 N	Resistance to constant environment	IEC 600 68-2-3 and 2-30
Electrica characteristics acc. to IEC 60947, AC-15		Resistance at variable environment	IEC 600 68-2-14 and 2-33
Operating voltage AC/DC	42 V	Salt spray	IEC 600 68-2-11
Operating current AC/DC	100 mA	Solderability / solder heat resistance	IEC 600 68-2-20
Rated power max.	250 mW	Solder techniques	wave solder bath / manual soldering
Other specifications		Type	see order block
Operating life	1 million at 10 mA/ 24 V DC	Colour of housing	grey
Switching reliability at 24V/5mA DC	10×10^{-6}		

Control components

RAFI
SOLUTIONS WITH PASSION

Accessories RAFIX 22 FS contact blocks with gold contacts

Description	Photo	Order no.	Page
3 mm LED superbright yellow		1.90.690.267/0000	5 - 20
3 mm LED superbright red		1.90.690.269/0000	5 - 20
3 mm LED superbright blue		1.90.690.282/0000	5 - 20
3 mm LED superbright green		1.90.690.285/0000	5 - 20
3 mm LED superbright white		1.90.690.295/0000	5 - 20

For additional accessories, refer to the chapter „RAFIX 22 FS special accessories".

2

RAFIX 22 FS contact block with gold contacts

Pict.: Universal contact block, 1 NC + 1 NO, gold contacts   Emergency stop contact block, gold contacts, 2 NC

**RAFIX
22 FS**

Contact arrangement	Type	Colour of housing	Colour of plunger	Order no.
1 NC	Universal	grey	red	**1.20.126.001/0000**
1 NO	Universal	grey	green	**1.20.126.002/0000**
1 NC + 1 NO	Universal	grey	red and green	**1.20.126.003/0000**
2 NC	Universal	grey	red	**1.20.126.004/0000**
2 NO	Universal	grey	green	**1.20.126.005/0000**
1 NC	emergency stop	grey	red	**1.20.126.401/0000**
1 NC + 1 NO	emergency stop	grey	yellow	**1.20.126.403/0000**
2 NC	emergency stop	grey	red	**1.20.126.404/0000**

Technical data see page 2 - 174

Caution: Emergency stop contact blocks can only be used with emergency stop pushbuttons. Universal contact blocks are not suitable for emergency stop pushbuttons.

RAFI
SOLUTIONS WITH PASSION

RAFIX 22 FS contact blocks with silver contacts

Pict.: Silver contacts, 1 NC + 1 NO

Silver contacts, universal type, 1 NC

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General data

Illumination information:
The contact blocks are suitable for use with illuminated actuators: Insert the desired LED into the integrated LED base and subsequently solder it together with the contact block.
We strongly recommend using the Rafi superbright LED since this ensures homogeneous illumination.

Technical data

General information	
Lamp	LED

Dimensions	
Diameter	17.3 mm
Recommended key grid	30 mm
Mounting depth	9.2 mm

Mechanical design	
Mounting	soldering in PCB
Contact system	bridgecontact self cleaning
Contact materials	Ag
Contact arrangement	see order block
NC contact forcibly actuated acc. to IEC 60947-5-1	yes
Terminals	solder terminal with locating lug
Robustness	100 N

Electrica characteristics acc. to IEC 60947, AC-15	
Rated insulation voltage AC/DC	250 V
Rated peak voltage	2500 V
Rated operating current I_E , AC15 B300	3 A/120 V; 1.5 A/240 V; Ithe: 5 A
Rated operating current I_E , DC13 Q300	550 mA/120 V; 270 mA/240 V; Ithe: 2.5 A

Other specifications	
Operating life at 250V / 1A	1,000,000
Operating life at 250V / 2A	100000
Operating life at 250V / 4A	70000

Switching reliability at 24V/5mA DC	10×10^{-6}
Ambient temp. operating min.	-25 °C
Ambient temp. operating max.	+70 °C
Storage temperature min.	-40 °C
Storage temperature max.	+80 °C
Colour of plunger	see order block
Approvals acc. to IEC	60947-5-x, 60204, 60073, 601058
Approvals, other	UL 508, CSA, cURus (UL + CSA)
Robustness	acc. to IEC 60947-5-5 (TÜV)
Shock resistance acc. to IEC 600 68-2-27	50 g at 11 ms, amplitude half sinusoidal
Resistance to vibrations acc. to IEC 600 68-2-6	5 g at 10 ... 500 Hz
Resistance to constant environment	IEC 600 68-2-3 and 2-30
Resistance at variable environment	IEC 600 68-2-14 and 2-33
Salt spray	IEC 600 68-2-11
Solderability / solder heat resistance	IEC 600 68-2-20
Solder techniques	wave solder bath / manual soldering
Flame class acc. to UL 94	V 0
Hot wire ignition acc. to IEC 60695-2-1	yes
Type	see order block
Colour of housing	black

RAFIX 22 FS

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Accessories RAFIX 22 FS contact blocks with silver contacts

Description	Photo	Order no.	Page
3 mm LED superbright yellow		1.90.690.267/0000	5 - 20
3 mm LED superbright red		1.90.690.269/0000	5 - 20
3 mm LED superbright blue		1.90.690.282/0000	5 - 20
3 mm LED superbright green		1.90.690.285/0000	5 - 20
3 mm LED superbright white		1.90.690.295/0000	5 - 20

For additional accessories, refer to the chapter „RAFIX 22 FS special accessories".

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RAFIX 22 FS contact blocks with silver contacts

Pict.: Silver contacts, universal type, 1 NO	E-stop, silver contacts, 1 NC + 1 NO	Silver contacts, 1 NC + 1 NO

RAFIX 22 FS

Contact arrangement	Type	Colour of housing	Colour of plunger	Order no.
1 NC	Universal	black	red	**1.20.126.201/0000**
1 NO	Universal	black	green	**1.20.126.202/0000**
1 NC + 1 NO	Universal	black	red and green	**1.20.126.203/0000**
2 NC	Universal	black	red	**1.20.126.204/0000**
2 NO	Universal	black	green	**1.20.126.205/0000**
1 NC	emergency stop	black	red	**1.20.126.601/0000**
1 NC + 1 NO	emergency stop	black	yellow	**1.20.126.603/0000**
2 NC	emergency stop	black	red	**1.20.126.604/0000**

Technical data see page 2 - 176

Caution: Emergency stop contact blocks can only be used with emergency stop pushbuttons. Universal contact blocks are not suitable for emergency stop pushbuttons.

Stock items are marked
by **bold printed** order numbers.

RAFIX 22 FS special accessories

black

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Accessories RAFIX 22 FS special accessories

Description	Photo	Order no.	Page
Fixing spanner for ring nut and front ring		**5.05.800.062/0000**	5 - 23

Blanking cap

Short text	Feature 1	Feature 2	Order no.
Blanking cap IP65, ring nut, square			**5.05.800.068/0000**
Blanking cap IP65, ring nut, round			**5.05.800.067/0000**

Ring nut
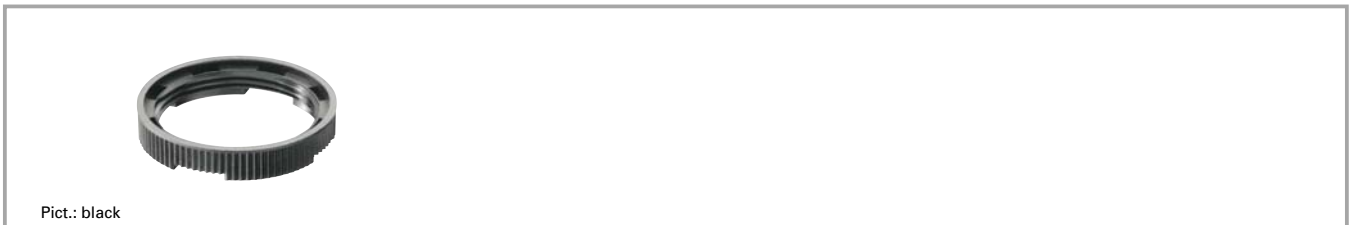
Pict.: black

Short text	Feature 1	Feature 2	Order no.
Ring nut (spare part)			5.24.279.014/0100

Stock items are marked
by **bold printed** order numbers.

Control components

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LED base for signal indicators

Short text	Feature 1	Feature 2	Order no.
LED base for signal indicators			**5.30.109.020/0756**

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Plastic frontring protection cap

Pict.: slate-grey
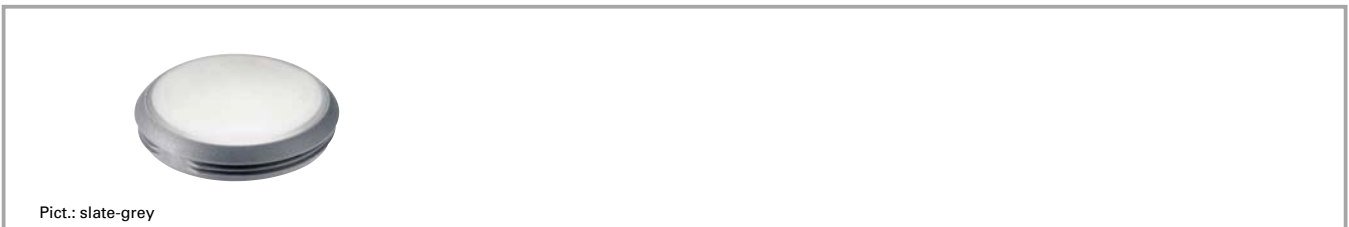
Short text	Feature 1	Feature 2	Order no.
Plastic frontring black protection cap	black		5.05.004.986/0100
Plastic frontring red protection cap	red		5.05.004.986/0300
Plastic frontring yellow protection cap	yellow		5.05.004.986/0400
Plastic frontring green protection cap	green		5.05.004.986/0500
Plastic frontring blue protection cap	blue		5.05.004.986/0600
Plastic frontring slate grey protection cap	slate-grey		5.05.004.986/0700
Plastic frontring silver grey protection cap	silver-grey		5.05.004.986/0800

Stock items are marked
by **bold printed** order numbers.