

RAFIX 22 FS - Actuators and indicators



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 resp. 27 mm
- Protection class min. IP65
- 2 collar shapes, round or square
- The PCB contact blocks can be combined with other components on the same PCB.
- Contact blocks with quick connectors and LED clips

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

RAFIX 22 FS - Pushbuttons	2 - 184
RAFIX 22 FS - Pushbutton, flush lens, round collar	2 - 185
RAFIX 22 FS - Pushbutton, with protective cap, flush lens, round collar NEW	2 - 186
RAFIX 22 FS - Pushbutton, protruding lens, round collar	2 - 187
RAFIX 22 FS - Pushbutton, protruding front ring, round collar	2 - 188
RAFIX 22 FS - Pushbutton, flush lens, square collar	2 - 189
RAFIX 22 FS - Pushbutton, with protective cap, flush lens, square collar NEW	2 - 190
RAFIX 22 FS - Pushbutton, protruding lens, square collar	2 - 191
RAFIX 22 FS - Pushbutton, protruding front ring	2 - 192
RAFIX 22 FS - Selector switches	2 - 194
RAFIX 22 FS - Selector switch, round collar	2 - 196
RAFIX 22 FS - Selector switch, square collar	2 - 197
RAFIX 22 FS - Keylock switch	2 - 198
RAFIX 22 FS - Keylock switch, round collar	2 - 199
RAFIX 22 FS - Keylock switch, square collar	2 - 200
RAFIX 22 FS - Emergency stop pushbutton	2 - 202
RAFIX 22 FS - Emergency stop pushbutton, reset by rotation	2 - 204
RAFIX 22 FS - Emergency stop pushbutton, reset by pulling (IP69K)	2 - 204
RAFIX 22 FS - Emergency stop pushbutton „Plus 1“ NEW	2 - 206
RAFIX 22 FS - Emergency stop pushbutton „Plus 1“; reset by rotation	2 - 207
RAFIX 22 FS - Emergency stop pushbutton „Plus 1“; reset by pulling (IP69K)	2 - 207
Control components	2 - 175

RAFIX 22 FS - Actuators and indicators

RAFIX 22 FS - Potentiometer drive NEW	2 - 208
RAFIX 22 FS - Potentiometer drive, round collar	2 - 209
RAFIX 22 FS - Potentiometer drive, square collar	2 - 209
RAFIX 22 FS - Signal indicator	2 - 210
RAFIX 22 FS - Signal indicator, round collar, flat version	2 - 211
RAFIX 22 FS - Signal indicator, round collar, high version NEW	2 - 211
RAFIX 22 FS - Signal indicator, square collar, flat version	2 - 212
RAFIX 22 FS - Signal indicator, square collar, high version NEW	2 - 212
RAFIX 22 FS - Contact block with quick-connect terminal and gold contacts NEW	2 - 214
RAFIX 22 FS - Contact block with quick-connect terminal and gold contacts	2 - 215
RAFIX 22 FS - Contact block with quick-connect terminals, silver contacts NEW	2 - 216
RAFIX 22 FS - Contact block with quick-connect terminals, silver contacts	2 - 217
RAFIX 22 FS - Contact block for PCB with gold contacts	2 - 218
RAFIX 22 FS - Contact block for PCB with gold contacts	2 - 220
RAFIX 22 FS - Contact block for PCB with silver contacts	2 - 222
RAFIX 22 FS - Contact block for PCB with silver contacts	2 - 224
RAFIX 22 FS - E-Box Housing NEW	2 - 226
RAFIX 22 FS - E-Box, yellow, for Emergency-stop pushbuttons NEW	2 - 227
RAFIX 22 FS - E-Box, grey, for pushbuttons NEW	2 - 227
RAFIX 22 FS - E-Box contact module with gold contacts NEW	2 - 228
RAFIX 22 FS - E-Box contact modules for Emergency-stop applications NEW	2 - 229
RAFIX 22 FS - E-Box contact modules for standard applications NEW	2 - 230
RAFIX 22 FS - E-Box contact module with silver contacts NEW	2 - 232
RAFIX 22 FS - E-Box contact modules for Emergency-stop applications NEW	2 - 233
RAFIX 22 FS - E-Box contact modules for standard applications NEW	2 - 233
RAFIX 22 FS - Special accessories	2 - 234
Blanking cap Ø 22.3 mm	2 - 234
Ring nut	2 - 235
LED base for signal indicators NEW	2 - 235
Female quick-connect terminal DIN 46340-B 2.8-1-MS	2 - 236
LED base for signal indicators	2 - 236
LED 3 mm, without base	2 - 237
Emergency stop label, Ø 22,3 mm	2 - 238
Spacers, round	2 - 239
Spacers, triangular	2 - 240

2

RAFIX
22 FS

RAFIX 22 FS

Control components re-invented?

The RAFIX 22 FS series literally sets new standards in the domain of control components. The extremely low mounting depth provides entirely new opportunities in the design of machines and housings. This offers the possibility of combining functionality and design in an increasingly design-oriented industrial sector..

In addition to the low mounting depth, the design of the front elements offers numerous advantages to the user. All actuators are available with either square or round housing collar. Combined with the various front rings, this makes it possible to arrange the actuators in such a way that they are easily and individually recognised. For example, you can associate a defined colour with a specific command.

Moreover, the large number of colour options of the front ring makes it easy to customize it to the corporate colours of the various OEMs.



2

RAFIX
22 FS

Actuators

The actuators of the RAFIX 22 FS series have at least a degree of protection to IP65 and are therefore suitable for nearly every application. If you need to cope with even more severe environments, some actuators are also available with a degree of protection of IP69.

The mechanical operating life of most of the actuators is as high as one million operations and therefore fully sufficient for years of use with frequent input operations.



The RAFIX 22 FS series offers numerous actuators with a round or square collar shape:

- **Pushbuttons**
 - Optionally illuminated and opaque
 - With flush or raised lens
 - With flush or raised front ring
- **Selector switches**
 - Angle between positions 40°, 60° or 90°
 - Latching or momentary
 - Illuminated or non-illuminated
- **Keylock switches**
 - Angle between positions 40° or 90°
 - Latching or momentary
- **Signal indicators**
 - White, yellow, green, red or blue
- **Emergency stop pushbuttons to DIN EN ISO 13850**

Approvals

- IEC 60947-5-1/5
- UL

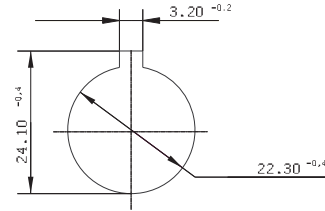
RAFIX 22 FS

Front panel

Panel cut-out

The actuators of the RAFIX 22 FS series are suitable for 22.3 mm panel cut-outs according to IEC 60947-5-1. All actuators are provided with a locating pip.

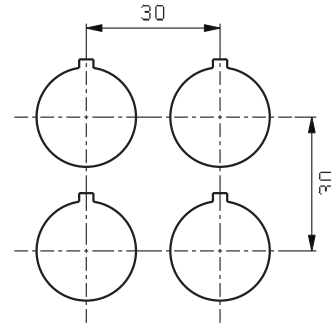
This locating pip ensures the perfect fit of actuators with contact blocks for PCB-mounted components and is therefore critical for a design built with these contact blocks.



Grid spacing

The design principle makes it possible to use a minimum grid spacing of 30 mm x 30 mm. In such an arrangement, actuators with square collars can be aligned directly without any gaps.

When designing the grid spacing, it is recommended to consider any external legending required (for example, using label strips inserted into the front panel).

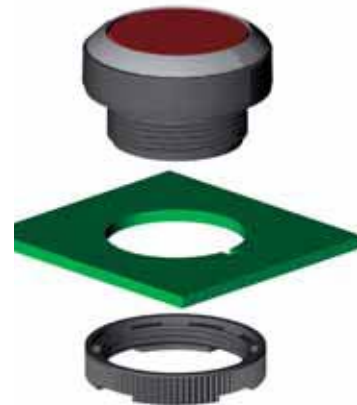


Assembly of the front actuators

Single-handed assembly method

For assembly, insert the actuator into the mounting hole from the front side. It is kept in the mounting hole by the cast-on seal. Subsequently you can screw on the actuator from the rear using the ring nut. You can perform these steps one after the other with one hand!

Even better: You can start by inserting all actuators from the front side first and subsequently fasten the threaded rings from the rear in one go. We recommend using the RAFIX fixing spanner to ensure proper tightening.

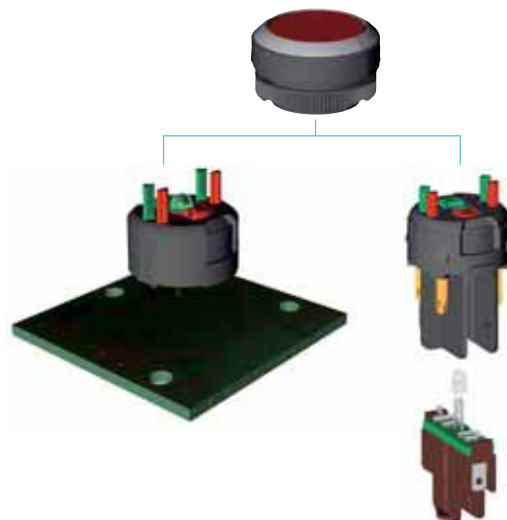


RAFIX 22 FS for any application

You can use different contact blocks as necessary for the application or mounting location. The actuators are suitable for both contact blocks with PCB solder terminals and contact blocks with quick-connect terminals.

The **contact blocks with quick-connect terminals** are mounted directly and permanently to the actuator. **Mounting depth: 27 mm**

The **contact blocks with PCB solder terminals** are mounted on the printed circuit board and subsequently soldered. The mechanical connection with the actuators on the front side is established by thread studs. **Mounting depth: 9.2 mm**



RAFIX 22 FS

Contact blocks with quick-connect terminals / direct mounting



2

System

RAFI offers contact blocks with quick-connect terminals for the tried and tested RAFIX 22 FS actuator series. The contact block snaps into the actuator with a gentle "click" and is thereby fitted permanently.

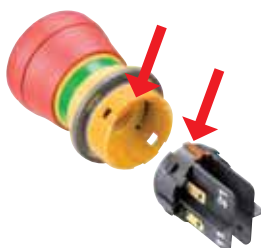
Concept

For those applications where designing a PCB layout is economically inefficient or not possible at all, the contact blocks with quick-connect terminals offer an economic alternative. Catch noses provided on the contact block snap precisely into the actuator. The screw neck of the actuator is provided with indents safeguarding a reliable union. The connection to the contact block is made with simple conventional quick-connect terminals. A fin arranged at the centre of the contact block helps to ensure good insulation and serves as a guide for the LED clip at the same time.

The new contact block with quick-connect terminals completes the RAFIX 22 FS series and makes it perfectly suitable for all customer requirements. Control components installed at detached locations can be integrated into the system **easily** and **without needing any tools**, thereby saving space, effort and material.

Assembly

The colour marks on the screw neck of the actuator and on the contact block prevent incorrect assembly and facilitate the assembly process. Gentle pressure on the contact block is sufficient to ensure reliable latching with the actuator. "Click to fit".



Please notice colour marking!

Advantages

- The speedy and straightforward mounting method for the contact blocks with quick-connect terminals saves valuable assembly time.
- The rigid connection between the contact block and the actuator is suitable for applications where shocks and vibrations occur.
- Cable harnesses can be pre-terminated with the contact blocks.

Specific fields of application are those ...

- where using a printed circuit board is economically inefficient, for example, at a distance from the main operating stations (e.g. emergency stop in a hazardous area).
- where standard control components need to be installed quickly. The time it takes to install RAFIX 22 FS contact blocks with quick-connect terminals is substantially shorter than with previous control component concepts.
- where severe vibrations and shocks occur. All the parts are firmly joined.
- where other components occupy much of the available space.

RAFIX 22 FS

Essential features

- Mounting depth only 27 mm including LED clip and cable lugs
- Quick-connect/solder terminals 2.8 x 0.8 mm
- The contact block engages permanently with the actuator only at the time of final assembly
- Compatible with all RAFIX 22 FS actuators: Pushbuttons, selector switches, keylock switches, emergency stop buttons and signal indicators, with all advantages this series offers:
 - Large actuating and indicating areas
 - Round or square collar shapes
 - Panel cut-out to IEC 60947: 22.3 mm with locating indent
 - Degree of protection IP65 (water-jet proof)
- Protection against contact for quick-connect terminals and cable lugs: Short-circuit proof even when the connection wires are under tensile strain
- Gold contacts for 100% reliable switching of low voltages (5 V/1 mA min.) or:
- Silver contacts (250 V/4 A max.) for mains voltage
- Contact arrangements: 1 NC, 1 NO, 2 NC, 2 NO, 1 NC + 1 NO or, for safety-critical applications, 2 NC + 1 NO (E-stop "Plus 1")
- Illumination with replaceable superbright LED clips in various LED colours, with quick-connect terminals 2.8 x 0.8 mm
- Actuators / contact blocks, signal indicators / lamp sockets and LED clips can be stocked separately and are not assembled until final assembly. This ensures utmost flexibility and most economic stockkeeping for this product range.

2

RAFIX
22 FS

Terminals (sight from below)

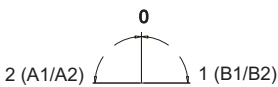
Contact block with LED-Clip
(sight from below)

Contact block "Plus 1"
(sight from below)

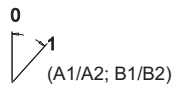
Contact arrangement	1NO	1NC	2NO	2NC	1NC + 1NO	Plus 1
Contact A1/A2 Terminal legending	1NO 13 - 14	-	1NO 13 - 14	1NC 11 - 12	1NO 13 - 14	1NC 11 - 12
Contact B1/B2 Terminal legending	-	1NC 21 - 22	1NO 23 - 24	1NC 21 - 22	1NC 21 - 22	1NC 21 - 22
Contact C1/C2 Terminal legending *:only when needed	LED* X1 - X2	LED* X1 - X2	LED* X1 - X2	LED* X1 - X2	LED* X1 - X2	1NO 33 - 34

Contact scheme for selector and keylock switches

All actuators with 3 positions

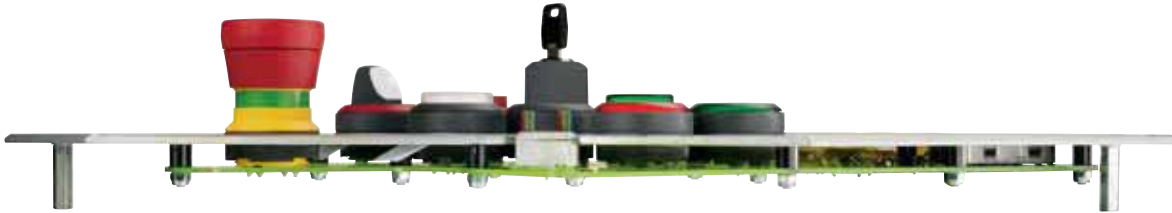


All actuators with 2 positions



RAFIX 22 FS

Contact block with solder terminals for PCB mounting

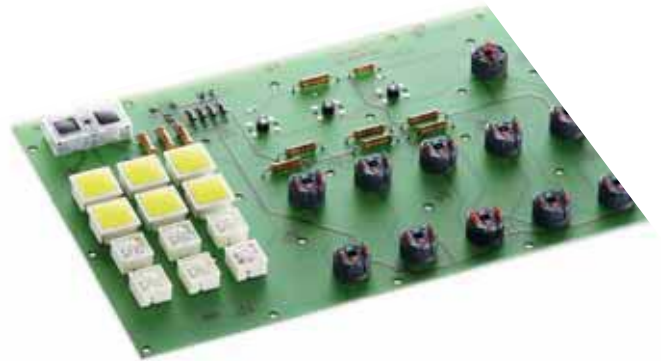


System

The extremely low mounting depth enables you to use the control component as an integral building block of your system solution.

Concept

You can include the RAFIX 22 FS contact blocks into your PCB layout and arrange them next to other components. The contact blocks are located directly behind the actuators on the printed circuit board at a distance of only 9.2 mm behind the front panel, leaving a lot of space for other components. A 3 mm LED can be inserted into the central duct of the contact block, which makes it easy to implement an illumination. With the RAFIX 22 FS concept, you save space, effort and material.



Printed circuit board

The contact blocks are fitted onto the printed circuit board and subsequently soldered, e.g. by wave soldering. On request, RAFI can also offer you complete systems with a completely assembled PCB.

Assembly

When developing a system, the operating unit needs to be designed once. This process involves designing the front panel and the printed circuit board behind it. Any assembly problems should be avoided as early as at this stage.

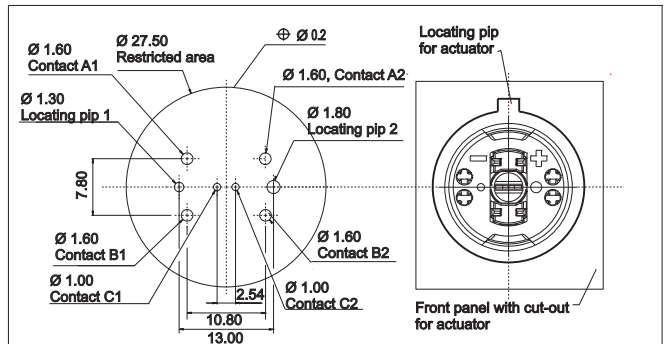
Front panel

The actuators (22.3 mm with locating pip, grid spacing 30 x 30 mm min.) are suitable for mounting in 1 to 3 mm thick front panels.

In addition to the panel cut-outs for the actuators, thread studs for fixing the printed circuit board must be designed on the rear. Legending by insertion of label strips can also be considered here, if necessary.



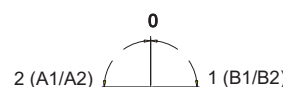
PCB hole patterns (view on component side)



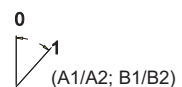
Contact arrangement	1NO	1NC	2NO	2NC	1NC + 1NO	Plus 1
Contact A1/A2	1NO 13 - 14	-	1NO 13 - 14	1NC 11 - 12	1NO 13 - 14	1NC 11 - 12
Terminal legending	-	1NC 21 - 22	23 - 24	21 - 22	1NC 21 - 22	1NC 21 - 22
Contact B1/B2	-	1NO 21 - 22	23 - 24	21 - 22	1NC 21 - 22	1NC 21 - 22
Terminal legending	-	1NO 21 - 22	23 - 24	21 - 22	1NC 21 - 22	1NC 21 - 22
Contact C1/C2	LED* X1 - X2	LED* X1 - X2	LED* X1 - X2	LED* X1 - X2	LED* X1 - X2	1NO 33 - 34
Terminal legending	13 14 X1 X2	13 14 X1 X2	13 14 X1 X2	11 12 X1 X2	13 14 X1 X2	11 12 33 34
*:only when needed						

Contact scheme for selector and keylock switches

All actuators with 3 positions



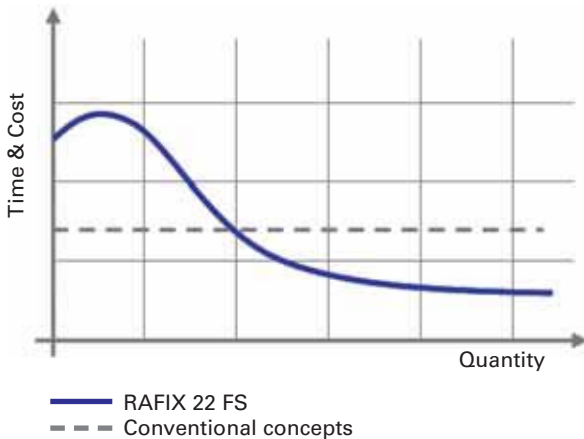
All actuators with 2 positions



RAFIX 22 FS

Assembly:

The printed circuit board is fastened to the front panel by means of thread studs. The one-time effort in the design phase ensures that assembly problems involving tedious troubleshooting procedures are avoided. This is economically very efficient for large production volumes.



The dimension of 9.2 mm behind the front panel is a mandatory requirement. Any spacers you may need for this purpose are available as RAFI accessories.

Formula for determining the spacer length:

9.2 mm less the front panel thickness equals the spacer height required.

Advantages

- The extremely low mounting depth is unique and makes it possible to develop applications with entirely new housing and machine designs.
- The series can be combined with RAFI short-travel keyswitches and provides an operating concept tailored to the customer application.
- Standardised production with printed circuit boards is profitable with large production volumes and saves assembly costs.

Specific fields of application are those ...

- where a printed circuit board is already envisaged in the design. Printed circuit boards are economically efficient for high production volumes because of the standardised production processes.
- where short-travel keyswitches are also used. RAFIX 22 FS PCB contact blocks can be combined, for example, with RAFI short-travel keyswitches of the MICON 5, RACON 8/12, RF 15/19 and KN 19 series.
- where only limited space is available; RAFIX 22 FS can be used to implement smaller housing formats. This results in savings of material and even tooling costs.

Essential features

- Mounting depth only 9.2 mm
- Solder terminals for PCB
- Compatible with all RAFIX 22 FS actuators:
- Pushbuttons, selector switches, keylock switches, emergency stop buttons and signal indicators, with all advantages this series offers:
 - Large actuating and indicating areas
 - Round or square collar shapes
 - Panel cut-out to IEC 60947: 22.3 mm with locating indent
 - Degree of protection IP65 (water-jet proof)
- Gold contacts for 100% reliable switching of low voltages (5 V/1 mA min.) or
- Silver contacts (250 V/4 A max.) for mains voltage
- Contact arrangements: 1 NC, 1 NO, 2 NC, 2 NO, 1 NC + 1 NO, 2 NC + 1 NO
- Illumination with LED's in various LED colours

E-Box

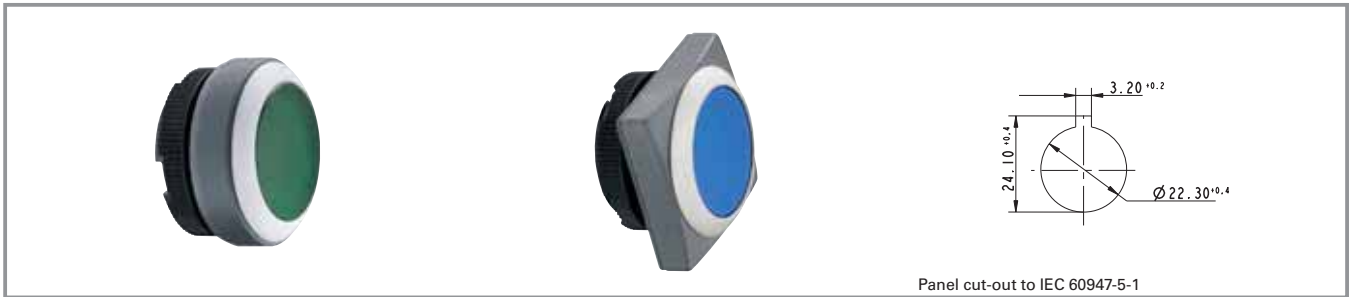


The RAFIX 22 FS E-Box is an elegant, extremely well-designed housing for control components. It can be used wherever individual control component units are required in remote places. Very typical, for example, for Emergency-Stop applications along a production line or on the safety fence.

The dimensions of the RAFIX 22 FS E-Box and also the assembly concept are based on the edge dimension of a 40 mm profile rail.

RAFIX 22 FS - Actuators and indicators

RAFIX 22 FS - Pushbuttons



2

Technical Data

General information

form of lens	see order block
Colour of lens	see order block
Colour of front ring	see order block
form of collar	see order block

Dimensions

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

Mechanical design

Mounting	ring nut
Contact function	see order block
Illuminability	see order block

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 (operations)	1,000,000 momentary/ 500,000 latching
Degree of protection from front side	IP65
Environmental resistance	acc. to IEC 60068-2 -14, -30, -33 and -78
Salt spray	IEC 600 68-2-11

RAFIX
22 FS

Approvals



IEC 60947-5-x,
60904, 60073



UL 508, C22.2 No.
14-M91

Typical accessories RAFIX 22 FS - Pushbuttons

Description	Photo	Order no.	Additional accessories see page
RAFIX 22 FS - Universal contact block, 1 NC + 1 NO, gold contacts		1.20.126.003/0000	2 - 220
RAFIX 22 FS - Universal contact block, silver contacts, 1 NO		1.20.126.202/0000	2 - 224
RAFIX 22 FS - Contact block with quick-connect terminals, silver contacts		1.20.126.303/0000	2 - 217

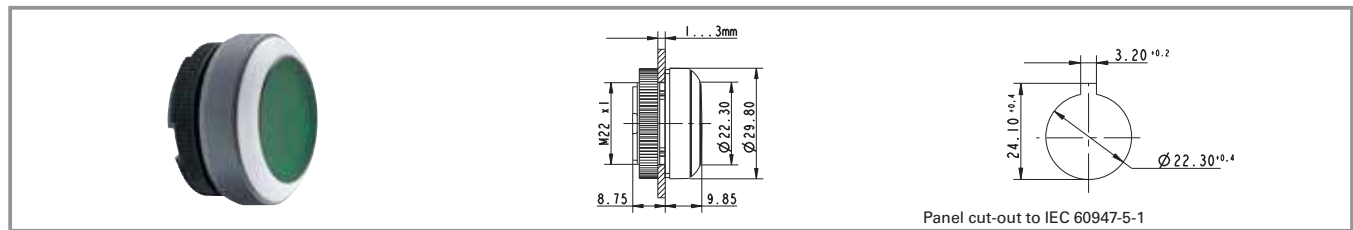
RAFIX 22 FS - Actuators and indicators

Typical accessories RAFIX 22 FS - Pushbuttons

Description	Photo	Order no.	Additional accessories see page
Fixing spanner for ring nut and front ring		5.05.800.062/0000	5 - 21

For additional accessories, refer to the chapter „Special accessories“

RAFIX 22 FS - Pushbutton, flush lens, round collar



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

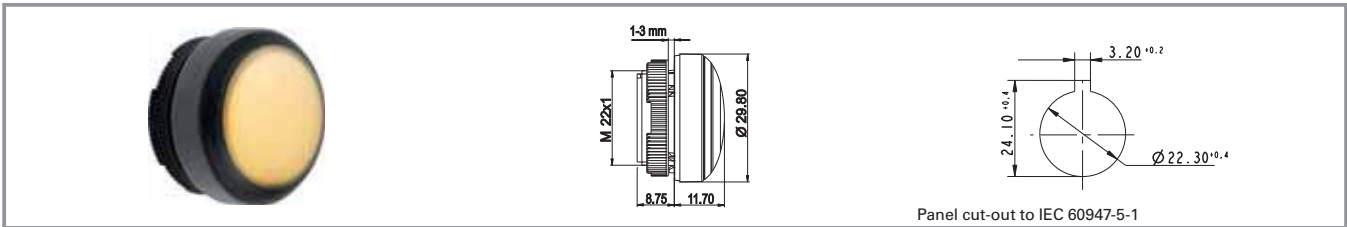
Technical data see page 2 - 184

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

Legending on request.

RAFIX 22 FS - Actuators and indicators

NEW RAFX 22 FS - Pushbutton, with protective cap, flush lens, round collar



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	1.30.250.005/10xx	-	-	-
yes	transparent red	1.30.250.005/13xx	-	-	-
yes	transparent yellow	1.30.250.005/14xx	-	-	-
yes	transparent green	1.30.250.005/15xx	-	-	-
yes	transparent blue	1.30.250.005/16xx	-	-	-
no	opaque black	1.30.250.105/01xx	-	-	-
no	opaque white	1.30.250.105/02xx	-	-	-
no	opaque red	1.30.250.105/03xx	-	-	-
no	opaque yellow	1.30.250.105/04xx	-	-	-
no	opaque green	1.30.250.105/05xx	-	-	-
no	opaque blue	1.30.250.105/06xx	-	-	-
no	opaque slate-grey	1.30.250.105/07xx	-	-	-

Technical data see page 2 - 184

Pushbutton with protective cap for use under rugged conditions.

xx = colour of front ring: black = 01, silver grey = 08

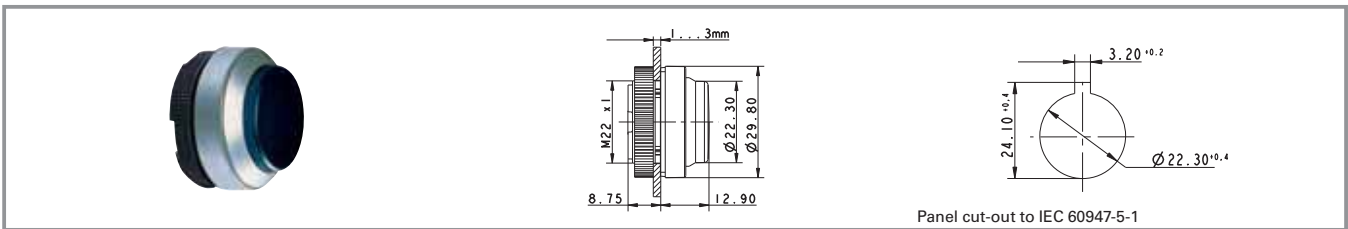
Legending on request.

2

RAFIX
22 FS

RAFIX 22 FS - Actuators and indicators

RAFIX 22 FS - Pushbutton, protruding lens, round collar



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 - 184

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

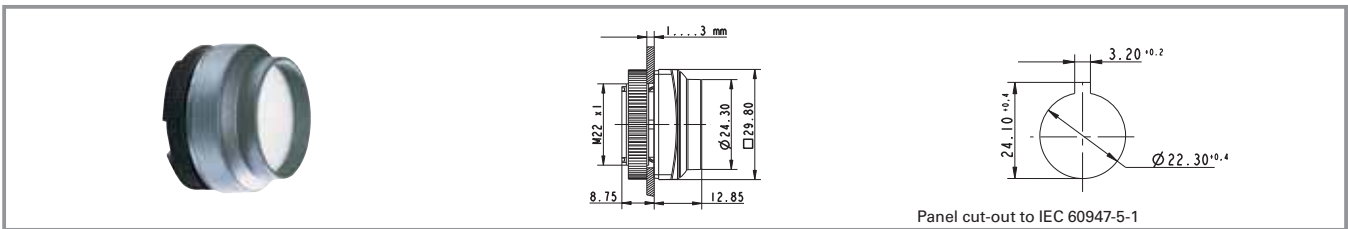
Legending on request.

2

RAFIX
22 FS

RAFIX 22 FS - Actuators and indicators

RAFIX 22 FS - Pushbutton, protruding front ring, round collar



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 - 184

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

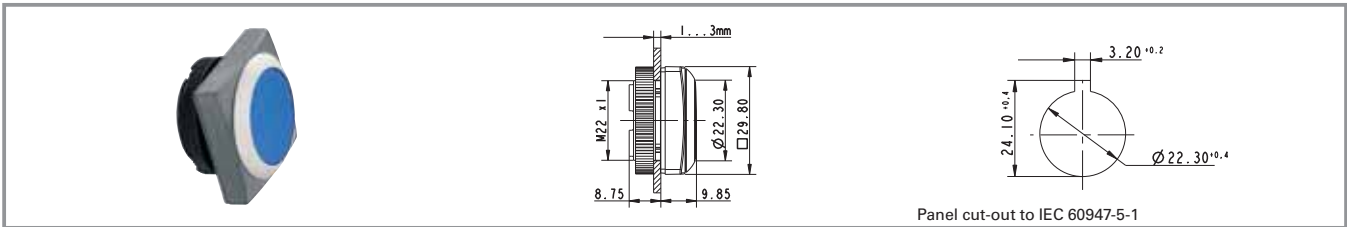
Legending on request.

2

RAFIX
22 FS

RAFIX 22 FS - Actuators and indicators

RAFIX 22 FS - Pushbutton, flush lens, square collar



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

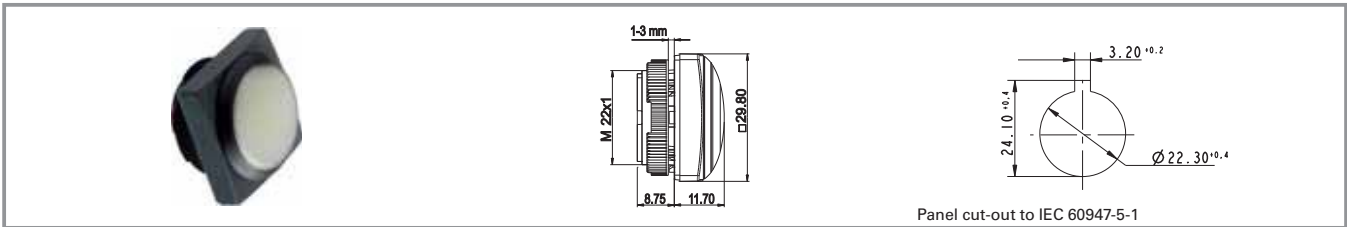
Technical data see page 2 - 184

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

Legending on request.

RAFIX 22 FS - Actuators and indicators

NEW RAFIX 22 FS - Pushbutton, with protective cap, flush lens, square collar



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	1.30.250.055/10xx	-	-	-
yes	transparent red	1.30.250.055/13xx	-	-	-
yes	transparent yellow	1.30.250.055/14xx	-	-	-
yes	transparent green	1.30.250.055/15xx	-	-	-
yes	transparent blue	1.30.250.055/16xx	-	-	-
no	opaque black	1.30.250.155/01xx	-	-	-
no	opaque white	1.30.250.155/02xx	-	-	-
no	opaque red	1.30.250.155/03xx	-	-	-
no	opaque yellow	1.30.250.155/04xx	-	-	-
no	opaque green	1.30.250.155/05xx	-	-	-
no	opaque blue	1.30.250.155/06xx	-	-	-
no	opaque slate-grey	1.30.250.155/07xx	-	-	-

Technical data see page 2 - 184

Pushbutton with protective cap for use under rugged conditions.

xx = colour of front ring: black = 01, silver grey = 08

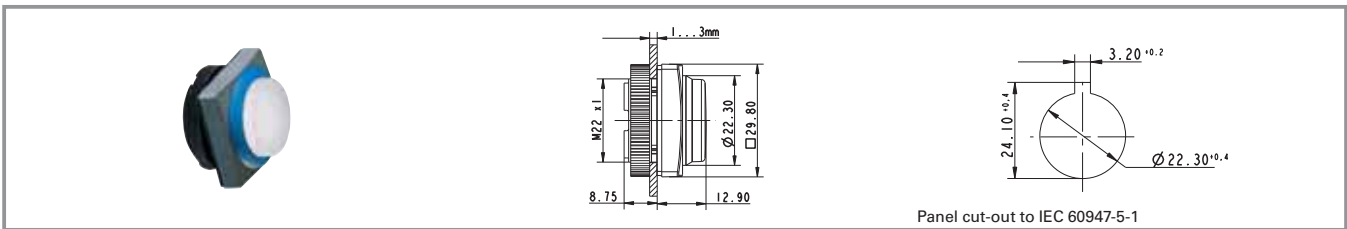
Legending on request.

2

RAFIX
22 FS

RAFIX 22 FS - Actuators and indicators

RAFIX 22 FS - Pushbutton, protruding lens, square collar



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

Technical data see page 2 - 184

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

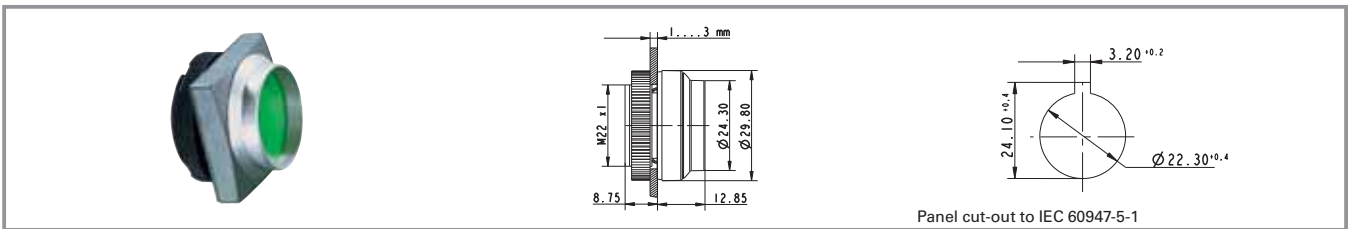
Legending on request.

2

RAFIX
22 FS

RAFIX 22 FS - Actuators and indicators

RAFIX 22 FS - Pushbutton, protruding front ring



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	1.30.250.451/10xx	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 - 184

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

Legending on request.

2

RAFIX
22 FS

RAFIX 22 FS - Actuators and indicators

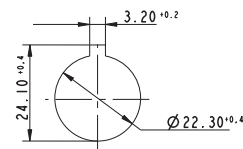
RAFIX 22 FS - Selector switches



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	see order block
Colour of front ring	see order block
form of collar	see order block

Dimensions

Dimensions of collar	see order block
Overall height	22.24 mm
Mounting depth	see order block
Mounting hole	22.3 mm
Key grid	30 x 30 mm

Mechanical design

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

Mechanical characteristics

Torque max.	1.5 Nm
-------------	--------

Other specifications

Operating life (operations)	500,000 momentary/ 300,000 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
Environmental resistance	acc. to IEC 60068-2 -14, -30, -33 and -78
Salt spray	IEC 600 68-2-11

Approvals



IEC 60947-5-x,
60904, 60073



UL 508, C22.2 No.
14-M91

RAFIX 22 FS - Actuators and indicators

Typical accessories RAFIX 22 FS - Selector switches

Description	Photo	Order no.	Additional accessories see page
RAFIX 22 FS - Universal contact block, 1 NO		1.20.126.002/0000	2 - 220
RAFIX 22 FS - Contact block with quick-connect terminals, gold contacts		1.20.126.103/0000	2 - 215
RAFIX 22 FS - Universal contact block, silver contacts, 1 NC		1.20.126.201/0000	2 - 224

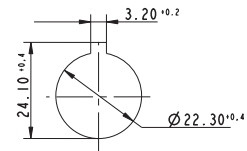
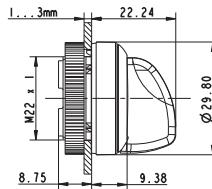
For additional accessories, refer to the chapter „Special accessories“

RAFIX 22 FS - Actuators and indicators

RAFIX 22 FS - Selector switch, round collar



Pict.: Front ring, silver grey, illuminated



Panel cut-out to IEC 60947-5-1

2

RAFIX
22 FS

Illuminability	Contact function	Rotating angle	Rotating angle	Order no.	
				Plastic front ring	Metallized 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
yes	latching 1 x 90° and momentary 1 x 40°	1 x 90° and 1 x 40°		1.30.252.926/22xx	1.30.252.927/2200
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
no	latching 1 x 90° and momentary 1 x 40°	1 x 90° and 1 x 40°		1.30.252.426/02xx	1.30.252.427/0200

Technical data see page 2 - 194

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.

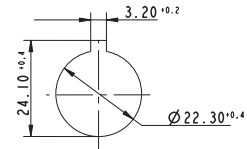
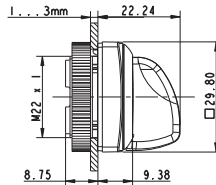
For coloured illumination of the handle marking please use coloured LED (see chapter 5 accessories).

RAFIX 22 FS - Actuators and indicators

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	Metallized 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
yes	latching 1 x 90° and momentary 1 x 40°	1 x 90° and 1 x 40°		1.30.252.976/22xx	1.30.252.977/2200
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
no	latching 1 x 90° and momentary 1 x 40°	1 x 90° and 1 x 40°		1.30.252.476/02xx	1.30.252.477/0200

Technical data see page 2 - 194

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.

For coloured illumination of the handle marking please use coloured LED (see chapter 5 accessories).

RAFIX 22 FS - Actuators and indicators

RAFIX 22 FS - Keylock switch



Panel cut-out to IEC 60947-5-1

2

Technical Data

General information

Colour of front ring see order block
Form of collar see order block

Dimensions

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

Mechanical design

Mounting ring nut
Contact function see order block
Lock Micromec
Illuminability see order block
Wafers 5
Lock type 001
Number of locking positions 500
Main key on request
Rotating angle see order block
Key removal position see order block

Mechanical characteristics

Torque max. 1.3 Nm

Other specifications

Operating life (operations) 300,000 momentary/
50,000 latching /
30,000 with key
removal
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
Environmental resistance acc. to IEC 60068-2
-14, -30, -33 and -78
ESD-strength lock / contact 15 kV
ESD-strength key/ front
panel 15 kV
Salt spray IEC 600 68-2-11

RAFIX
22 FS

Approvals



IEC 60947-5-x,
60904, 60073








UL 508, C22.2 No.
14-M91

Typical accessories RAFIX 22 FS - Keylock switch

Description	Photo	Order no.	Additional accessories see page
RAFIX 22 FS - Universal contact block, 1 NC		1.20.126.001/0000	2 - 220

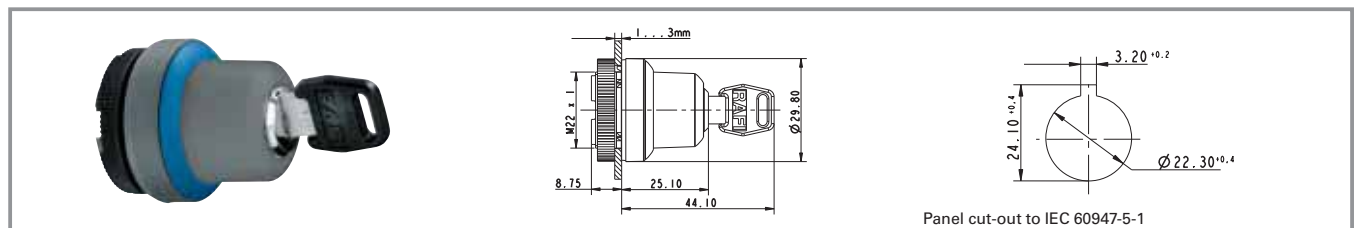
RAFIX 22 FS - Actuators and indicators










Typical accessories RAFIX 22 FS - Keylock switch

Description	Photo	Order no.	Additional accessories see page
RAFIX 22 FS - Contact block with quick-connect terminals, gold contacts		1.20.126.103/0000	2 - 215
RAFIX 22 FS - Universal contact block, silver contacts, +1 NC, 1 NO		1.20.126.203/0000	2 - 224
RAFIX 22 FS - Contact block with quick-connect terminals, silver contacts		1.20.126.303/0000	2 - 217
Spare key, for single action, e.g. 1 x 90° (delivery content 2 key)		5.58.007.001/0000	
Spare key, for double action, e.g. 2 x 90° (delivery content 1 key)		5.58.008.001/0000	

For additional accessories, refer to the chapter „Special accessories“

RAFIX 22 FS - Keylock switch, round collar



Contact function	Rotating angle	Key removal position	Rotating angle	Order no.	
				Plastic front ring	Metallized 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 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	2 x 90°	0		1.30.255.401/xxxx	1.30.255.402/0000
latching	2 x 90°	0+1+2		1.30.255.431/xxxx	1.30.255.432/0000
latching 1 x 90° and momentary 1 x 40°	1 x 90° and 1 x 40°	0		1.30.255.501/xxxx	1.30.255.502/0000

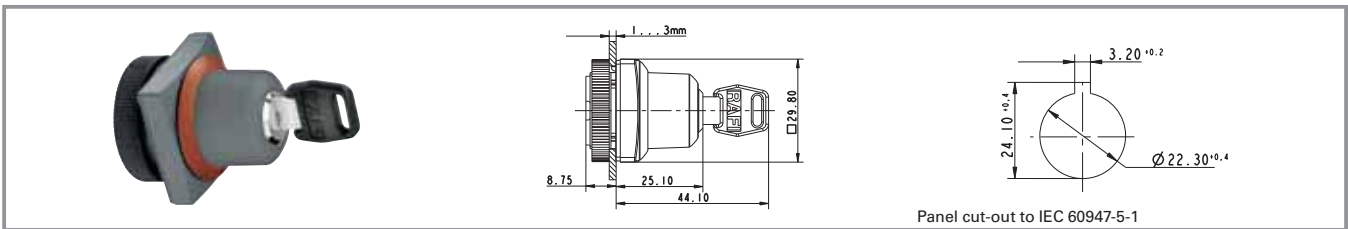
Technical data see page 2 - 198

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.

RAFIX 22 FS - Actuators and indicators

RAFIX 22 FS - Keylock switch, square collar



Contact function	Rotating angle	Key removal position	Rotating angle	Order no.	
				Plastic front ring	Metallized 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 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	2 x 90°	0		1.30.255.451/xxxx	1.30.255.452/0000
latching	2 x 90°	0+1+2		1.30.255.481/xxxx	1.30.255.482/0000
latching 1 x 90° and momentary 1 x 40°	1 x 90° and 1 x 40°	0		1.30.255.551/xxxx	1.30.255.552/0000

Technical data see page 2 - 198

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.

2

RAFIX
22 FS

RAFIX 22 FS - Actuators and indicators

RAFIX 22 FS - Emergency stop pushbutton



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. Please only combine „emergency stop“ contact block.

RAFIX
22 FS

Technical Data

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	33.2 mm
Key grid	22.3 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
Robustness	acc. to IEC 600 68-2-3 and 2-30
Operating life (operations)	50,000
Degree of protection from front side	see order block
Storage temperature min.	-40 °C
Storage temperature max.	+80 °C
Environmental resistance	acc. to IEC 60068-2-14, -30, -33 and -78
Salt spray	IEC 600 68-2-11

Approvals
















IEC 60947-5-x,
60904, 60073



UL 508, C22.2 No.
14-M91

RAFIX 22 FS - Actuators and indicators

Typical accessories RAFIX 22 FS - Emergency stop pushbutton

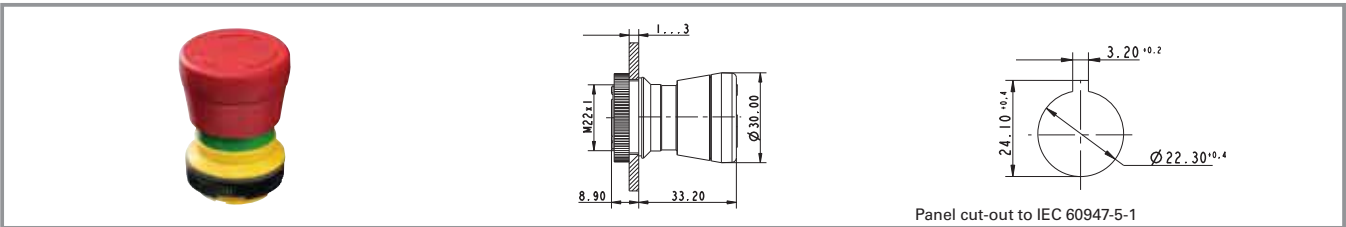
Description	Photo	Order no.	Additional accessories see page
RAFIX 22 FS - Emergency stop contact block, 1 NC, gold contacts		1.20.126.401/0000	2 - 220
RAFIX 22 FS - Emergency stop contact block, 2 NC, gold contacts		1.20.126.404/0000	2 - 220
RAFIX 22 FS - Contact block with quick-connect terminal and gold contacts		1.20.126.501/0000	2 - 215
RAFIX 22 FS - Emergency stop contact block, silver contacts, 1 NC		1.20.126.601/0000	2 - 224
RAFIX 22 FS - Contact block with quick-connect terminals, silver contacts		1.20.126.701/0000	2 - 217
Fixing spanner for ring nut and front ring		5.05.800.062/0000	5 - 21
Adhesive label yellow, round 22.3 / 60 mm, with legend „NOT-HALT, EMERGENCY STOP, ARRET D'URGENCE, EMERGENZA“		5.76.204.107/0400	2 - 99, 2 - 172, 2 - 238, 5 - 29
Adhesive label yellow, round 22.3 / 60 mm, with legend 4 x „NOT-HALT“		5.76.204.109/0400	2 - 99, 2 - 172, 2 - 238, 5 - 29
Adhesive label yellow, round 22.3 / 60 mm, with legend 4 x „NOT-AUS“		5.76.204.111/0400	2 - 99, 2 - 172, 2 - 238, 5 - 29
Adhesive label yellow, round 22.3 / 60 mm, with legend 4 x „EMERGENCY STOP“		5.76.204.113/0400	2 - 99, 2 - 172, 2 - 238, 5 - 29
Adhesive label yellow, round 22.3 / 40 mm, with legend „NOT-HALT, EMERGENCY STOP, ARRET D'URGENCE, EMERGENZA“		5.76.204.115/0400	2 - 99, 2 - 172, 2 - 238, 5 - 29
Adhesive label yellow, round 22.3 / 40 mm, with legend 4 x „NOT-HALT“		5.76.204.117/0400	2 - 99, 2 - 172, 2 - 238, 5 - 29
Adhesive label yellow, round 22.3 / 40 mm, with legend 4 x „NOT-AUS“		5.76.204.119/0400	2 - 99, 2 - 172, 2 - 238, 5 - 29
Adhesive label yellow, round 22.3 / 40 mm, with legend 4 x „EMERGENCY STOP“		5.76.204.121/0400	2 - 99, 2 - 172, 2 - 238, 5 - 29

2

RAFIX
22 FS

RAFIX 22 FS - Actuators and indicators

RAFIX 22 FS - Emergency stop pushbutton, reset by rotation

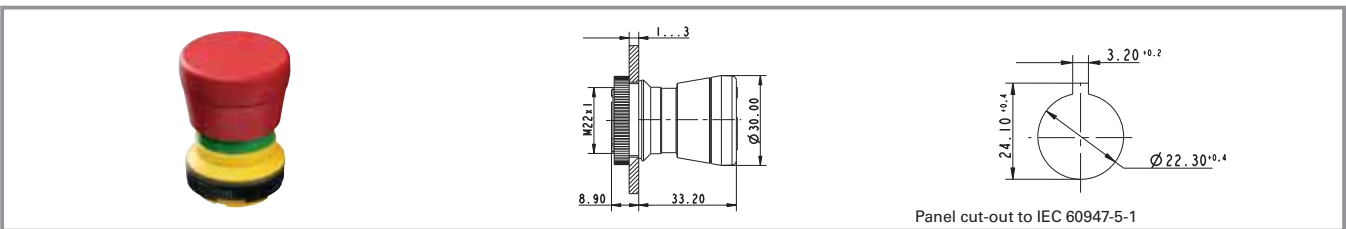


Reset	Illuminability	Degree of protection from front side	Order no.
by clockwise rotation	yes, lens transparent	IP65	1.30.253.001/1000
by clockwise rotation	yes, lens red	IP65	1.30.253.001/0300
by clockwise rotation	no	IP65	1.30.253.501/0300

Technical data see page 2 - 202

2

RAFIX 22 FS - Emergency stop pushbutton, reset by pulling (IP69K)



Reset	Illuminability	Degree of protection from front side	Order no.
by pulling	yes, lens transparent	IP69K	1.30.253.101/1000
by pulling	yes, lens red	IP69K	1.30.253.101/0300
by pulling	no	IP69K	1.30.253.601/0300

Technical data see page 2 - 202

RAFIX
22 FS

An Attractive Hit



E-Box – the Attractive Emergency Stop Unit

Better slim than chunky! This attractive emergency stop unit is an enhancement for any application: An elegant flat housing, suitable for 40 mm DIN rails with integrated RAFIX 22 FS emergency stop switch.

Look and see! Download the brochure at www.rafi.de, or send your inquiry to e-box@rafi.de.

RAFI GmbH & Co. KG
D-88276 Berg/Ravensburg
Phone: +49 751 89-0, Fax: +49 751 89-13 00
www.rafi.de, info@rafi.de

RAFI
SOLUTIONS WITH PASSION

RAFIX 22 FS - Actuators and indicators

NEW **RAFIX 22 FS - Emergency stop pushbutton „Plus 1“**



2

General Data

RAFIX 22 FS "Plus1"

Emergency stop pushbutton with 2 NC and 1 NO contacts

This special emergency stop pushbutton offers two redundant normally-closed contacts for the emergency off / emergency stop function and an additional signal contact. Unique design: 3 contacts accommodated in very compact dimensions (mounting depth 9.2 or 27 mm).

2 normally-closed (NC) contacts

Redundancy is more and more often a requirement for safety applications in mechanical engineering and control system development and helps to minimise the probability of failure of a system.

1 normally-open (NO) contact

The third contact – a normally-open contact – may be used, for example, for sending an information signal to a monitoring unit or master safety controller. The safety controller may then initiate a controlled shutdown, depending on the location and type of the hazard indicated.

The emergency stop pushbutton complies with the current standards. The positively guided mechanical movement of the pushbutton makes it dupe-proof according to DIN EN ISO 13850.

A RAFIX 22 FS "Plus1" emergency stop unit consists of a special emergency stop pushbutton and a suitable emergency stop contact block which can either be mounted directly (quick-connect terminals) or placed on a printed circuit board (THT version).

Approbations: IEC 60947-5-5 and UL 508 in preparation.

Only use with emergency stop "Plus1" contact blocks.

RAFIX
22 FS

Technical Data

General information

form of lens	conical mushroom form
Colour of lens	red
form of collar	round

Dimensions

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

Mechanical design

Mounting	ring nut
Contact function	latching
Illuminability	no
Reset	see order block

Mechanical characteristics







Robustness min.	100 N
-----------------	-------

Other specifications

Ambient temp. operating min.	-25
Ambient temp. operating max.	+70
Robustness	acc. to IEC 600 68-2-3 and 2-30
Operating life (operations)	50,000
Degree of protection from front side	see order block
Storage temperature min.	-40
Storage temperature max.	+80
Environmental resistance	acc. to IEC 60068-2-14, -30, -33 and -78
Salt spray	IEC 600 68-2-11

RAFIX 22 FS - Actuators and indicators

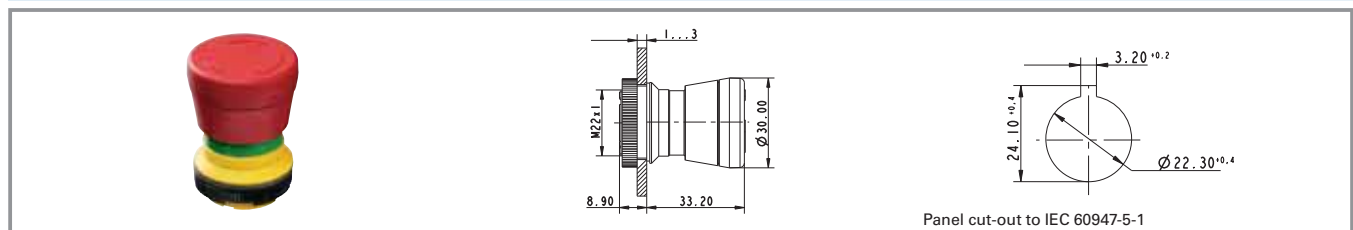
Typical accessories RAFIX 22 FS emergency stop pushbutton „Plus 1“

Description	Photo	Order no.	Additional accessories see page
RAFIX 22 FS - Emergency stop contact block, 2 NC, gold contacts		1.20.126.414/0000	2 - 220
RAFIX 22 FS - Contact block emergency stop, 2NC + 1 NO, with quick-connect terminals, gold contacts		1.20.126.514/0000	2 - 215
Adhesive label yellow, round 22.3 / 60 mm, with legend „NOT-HALT, EMERGENCY STOP, ARRET D'URGENCE, EMERGENZA“		5.76.204.107/0400	2 - 99, 2 - 172, 2 - 238, 5 - 29
Adhesive label yellow, round 22.3 / 60 mm, with legend 4 x „NOT-HALT“		5.76.204.109/0400	2 - 99, 2 - 172, 2 - 238, 5 - 29
Adhesive label yellow, round 22.3 / 40 mm, with legend „NOT-HALT, EMERGENCY STOP, ARRET D'URGENCE, EMERGENZA“		5.76.204.115/0400	2 - 99, 2 - 172, 2 - 238, 5 - 29
Adhesive label yellow, round 22.3 / 40 mm, with legend 4 x „EMERGENCY STOP“		5.76.204.121/0400	2 - 99, 2 - 172, 2 - 238, 5 - 29

2

RAFIX 22 FS - Emergency stop pushbutton „Plus 1“, reset by rotation

NEW



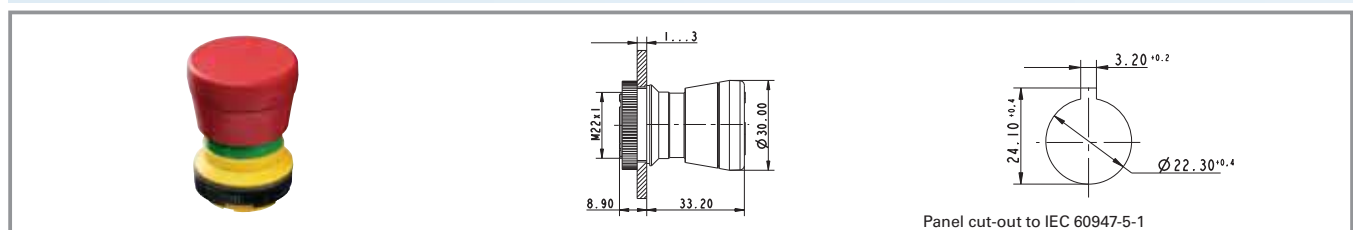
RAFIX 22 FS

Reset	Illuminability	Degree of protection from front side	Order no.
by clockwise rotation	no	IP65	1.30.253.502/0300

Technical data see page 2 - 206

RAFIX 22 FS - Emergency stop pushbutton „Plus 1“, reset by pulling (IP69K)

NEW



Reset	Illuminability	Degree of protection from front side	Order no.
by pulling	no	IP69K	1.30.253.602/0300

Technical data see page 2 - 206

RAFIX 22 FS - Actuators and indicators

NEW

RAFIX 22 FS - Potentiometer drive



Pict.: mounted

delivery content

Panel cut-out to IEC 60947-5-1

2

Technical Data

General information

Actuator	knob
Colour of knob	see order block
Front ring	see order block
form of collar	see order block

Dimensions

Dimensions of collar	see order block
Overall height	26 mm
Mounting depth	according to potentiometer
Mounting hole	22.3 mm
Key grid	according to potentiometer

Mechanical design

Mounting	ring nut
----------	----------

Mechanical characteristics

Robustness min.	100 N
-----------------	-------

Other specifications

Degree of protection from front side	IP65
Storage temperature min.	-40 °C
Storage temperature max.	+80 °C
Environmental resistance	acc. to IEC 60068-2 -14, -30, -33 and -78
Salt spray	IEC 600 68-2-11

RAFIX 22 FS

Approvals



IEC 60947-5-x,
60904, 60073

Typical accessories RAFIX 22 FS - Potentiometer drive

Description	Photo	Order no.	Additional accessories see page
Fixing spanner for ring nut and front ring		5.05.800.062/0000	5 - 21

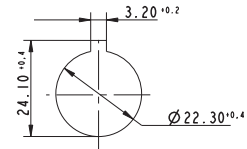
RAFIX 22 FS - Actuators and indicators

RAFIX 22 FS - Potentiometer drive, round collar

NEW



Pict.: mounted



Panel cut-out to IEC 60947-5-1

Front ring	Colour of knob	Order no.
plastic slate-grey	opaque slate-grey	1.30.258.001/0700

Technical data see page 2 - 208

For potentiometers with 6 mm shaft diameter and 50 mm shaft length. Potentiometer not included.

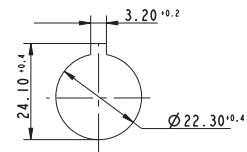
2

RAFIX 22 FS - Potentiometer drive, square collar

NEW



Pict.: delivery content



Panel cut-out to IEC 60947-5-1

Front ring	Colour of knob	Order no.
plastic slate-grey	opaque slate-grey	1.30.258.021/0700

Technical data see page 2 - 208

For potentiometers with 6 mm shaft diameter and 50 mm shaft length. Potentiometer not included.

**RAFIX
22 FS**

RAFIX 22 FS - Actuators and indicators

RAFIX 22 FS - Signal indicator



2

Technical Data

General information

form of lens see order block
Colour of lens see order block
form of collar see order block

Dimensions

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

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
Approvals see order block
Storage temperature min. -40 °C
Storage temperature max. +80 °C
Environmental resistance acc. to IEC 60068-2
-14, -30, -33 and -78
IEC 600 68-2-11
Salt spray

RAFIX
22 FS

Approvals



IEC 60947-5-x,
60904, 60073



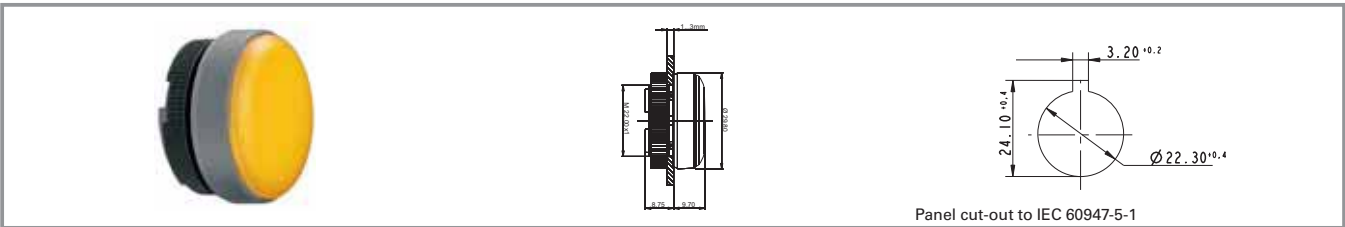
UL 508, C22.2 No.
14-M91

Typical accessories RAFIX 22 FS - Signal indicator

Description	Photo	Order no.	Additional accessories see page
3 mm LED superbright red		1.90.690.269/0000	2 - 237, 5 - 17
Fixing spanner for ring nut and front ring		5.05.800.062/0000	5 - 21
LED base for signal indicators, height 5 mm		5.30.109.020/0756	2 - 236
RAFIX 22 FS - Socket for LED-Clip, quick-connect terminals		5.55.104.419/0700	2 - 235

RAFIX 22 FS - Actuators and indicators

RAFIX 22 FS - Signal indicator, round collar, flat version



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 - 210

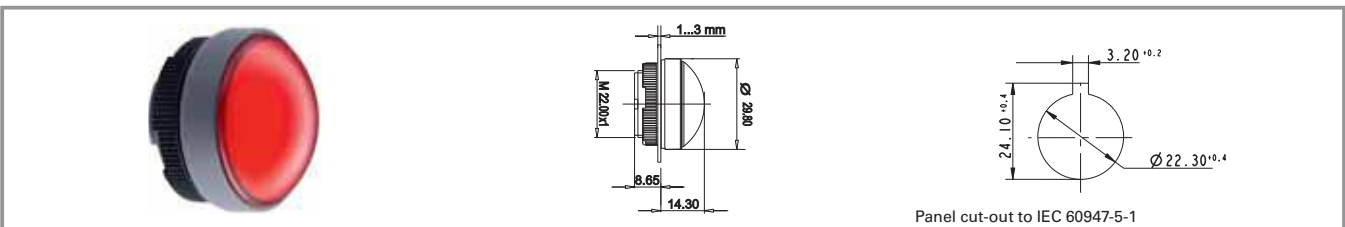
Legending on request.

2

RAFIX
22 FS

NEW

RAFIX 22 FS - Signal indicator, round collar, high version



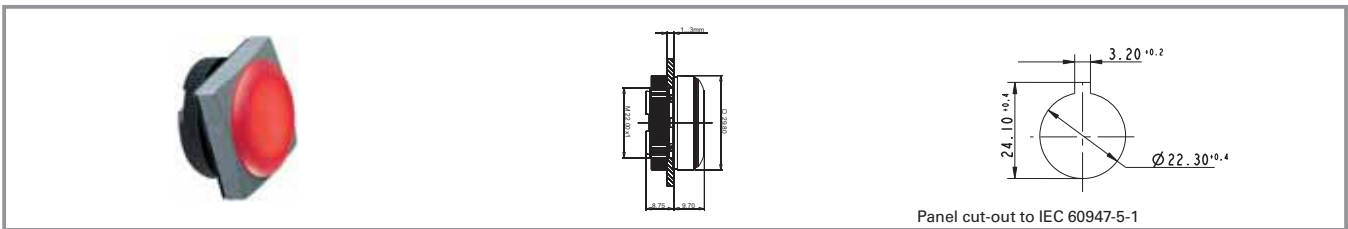
form of collar	Colour of lens	Order no.
round	transparent colourless	1.74.506.011/1000
round	transparent red	1.74.506.011/1300
round	transparent yellow	1.74.506.011/1400
round	transparent green	1.74.506.011/1500
round	transparent blue	1.74.506.011/1600

Technical data see page 2 - 210

Legending on request

RAFIX 22 FS - Actuators and indicators

RAFIX 22 FS - Signal indicator, square collar, flat version



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

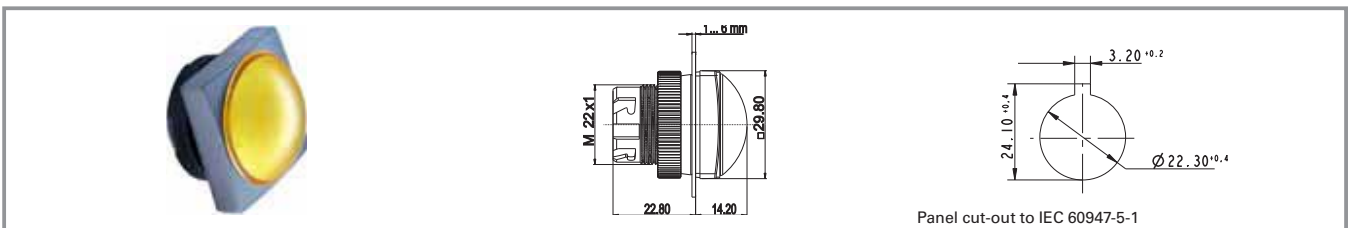
Technical data see page 2 - 210

Legending on request.

RAFIX
22 FS

NEW

RAFIX 22 FS - Signal indicator, square collar, high version



form of collar	Colour of lens	Order no.
square	transparent colourless	1.74.506.061/1000
square	transparent red	1.74.506.061/1300
square	transparent yellow	1.74.506.061/1400
square	transparent green	1.74.506.061/1500
square	transparent blue	1.74.506.061/1600

Technical data see page 2 - 210

Legending on request.

RAFIX 22 FS - Contact blocks and indicator elements

NEW

RAFIX 22 FS - Contact block with quick-connect terminal and gold contacts



Pict.: Universal, Au contacts, 1 NC + 1 NO

E-stop, Au contacts, 2 NC

2

General Data

The contact blocks are inserted into the actuators and latch there permanently. Emergency stop pushbuttons require special contact blocks which you can recognise by the plungers being in the interior. In addition, the emergency stop contact blocks and actuators feature two assembly guides which prevent rotation during assembly. We recommend to choose the LED colour in the same colour as the lens of the actuator in order to ensure satisfactory illumination.

Technical Data

RAFIX 22 FS

General information		Other specifications	
Lamp optional	LED-Clip	Operating life at 10 mA/24 V DC	see order block
Dimensions		Switching reliability at 24V/5mA DC	10 x 10 ⁻⁶
Diameter	17.3 mm	Ambient temp. operating min.	-25 °C
Recommended key grid	30 mm	Storage temperature max.	+70 °C
Mounting depth	27 mm	Storage temperature min.	-40 °C
Mechanical design		Storage temperature max.	+80 °C
Mounting	snap on actuator	Colour of plunger	see order block
Contact system	bridge-contact self cleaning	Robustness	acc. to IEC 60947-5-5 (TÜV)
Contact materials	Au	Shock resistance acc. to IEC 60068-2-27	15 g at 11 ms, amplitude half sinusoidal
Contact arrangement	see order block	Resistance to vibrations acc. to IEC 60068-2-6	5 g at 10 ... 500 Hz
NC contact forcibly actuated acc. to IEC 60947-5-1	yes	Environmental resistance	acc. to IEC 60068-2-14, -30, -33 and -78
Terminals	quick connect terminals 2.8 x 0.5 mm mm	Colour of housing	grey
Robustness	100 N	Type	see order block
Electrical characteristics			
Operating voltage min.	5 V		
Operating voltage max.	35 V		
Operating current min.	1 mA		
Operating current max.	100 mA		
Rated power max.	250 mW		

RAFIX 22 FS - Contact blocks and indicator elements

Approvals



IEC 60947-5-x,
60904, 60073



UL 508,C22.2 No.
14-M91

Typical accessories RAFIX 22 FS - Contact block with quick-connect terminal and gold contacts

Description	Photo	Order no.	Additional accessories see page
LED-Clip, LED red, 24V DC		5.05.511.359/0300	2 - 235

RAFIX 22 FS - Contact block with quick-connect terminal and gold contacts



Pict.: Universal, Au contacts, 2 NC



Universal, Au contacts, 1 NC + 1 NO



E-stop, Au contacts, 2 NC

Contact arrangement	Type	Lamp optional	Operating life at 10 mA/24V DC	Colour of plunger	Order no.
1 NC	Universal	LED-Clip	1,000,000	red	1.20.126.101/0000
1 NO	Universal	LED-Clip	1,000,000	green	1.20.126.102/0000
1 NC + 1 NO	Universal	LED-Clip	1,000,000	red and green	1.20.126.103/0000
2 NC	Universal	LED-Clip	1,000,000	red	1.20.126.104/0000
2 NO	Universal	LED-Clip	1,000,000	green	1.20.126.105/0000
1 NC	emergency stop	LED-Clip	1,000,000	red	1.20.126.501/0000
1 NC + 1 NO	emergency stop	LED-Clip	1,000,000	yellow	1.20.126.503/0000
2 NC	emergency stop	LED-Clip	1,000,000	red	1.20.126.504/0000
2 NC + 1 NO	emergency stop „Plus 1“	LED-Clip	50,000	red	1.20.126.514/0000

Technical data see page 2 - 214

Caution: Emergency stop contact blocks can only be used with emergency stop pushbuttons.

Caution: Emergency stop contact blocks „Plus 1“ can only be used with emergency stop pushbuttons „Plus 1“

RAFIX 22 FS - Contact blocks and indicator elements

NEW

RAFIX 22 FS - Contact block with quick-connect terminals, silver contacts



2

Technical Data

General information

Lamp optional LED-Clip

Dimensions

Diameter 17.3 mm
Recommended key grid 30 mm
Mounting depth 27 mm

Mechanical design

Mounting snap on actuator
Contact system bridge-contact self cleaning

Contact materials Ag
Contact arrangement see order block
NC contact forcibly actuated yes
acc. to IEC 60947-5-1
Terminals quick connect terminals
2.8 x 0.5 mm

Robustness 100 N

Electrical characteristics acc. to IEC 60947, AC-15, DC-13

Rated insulation voltage 250 V
AC/DC
Rated peak voltage 2500 V
Rated operating current I_e , AC15 B300 3 A/120 V; 1.5 A/240 V; I_{the} : 5 A
Rated operating current I_e , DC13 Q300 550 mA/120 V; 270 mA/240 V; I_{the} : 2.5 A

Other specifications

Operating life at 250V / 1A 1,000,000
Operating life at 250V / 2A 100,000
Operating life at 250V / 4A 30,000
Switching reliability at 24V/5mA DC 10×10^{-6}

Ambient temp. operating min. -25
Ambient temp. operating max. +70
Storage temperature min. -40
Storage temperature max. +80

Colour of plunger see order block
Schiffszulassungen see order block
Robustness acc. to IEC 60947-5-5 (TÜV)

Shock resistance acc. to IEC 60068-2-27 15 g at 11 ms, amplitude half sinusoidal
Resistance to vibrations acc. to IEC 60068-2-6 5 g at 10 ... 500 Hz

Environmental resistance acc. to IEC 60068-2-14, -30, -33 and -78 V 0
Flame class acc. to UL 94 yes
Hot wire ignition acc. to IEC 60695-2-1

Type see order block
Colour of housing black

Approvals






IEC 60947-5-x,
60904, 60073



UL 508, C22.2 No.
14-M91

RAFIX 22 FS - Contact blocks and indicator elements

Typical accessories RAFIX 22 FS - Contact block with quick-connect terminals, silver contacts

Description	Photo	Order no.	Additional accessories see page
LED-Clip, LED red, 24V DC		5.05.511.359/0300	2 - 235
LED-Clip, LED yellow, 24V DC		5.05.511.359/0400	2 - 235
LED-Clip, LED green, 24V DC		5.05.511.359/0500	2 - 235

RAFIX 22 FS - Contact block with quick-connect terminals, silver contacts



Contact arrangement	Type	Lamp optional	Colour of plunger	Order no.
1 NC	Universal	LED-Clip	red	1.20.126.301/0000
1 NO	Universal	LED-Clip	green	1.20.126.302/0000
1 NC + 1 NO	Universal	LED-Clip	red and green	1.20.126.303/0000
2 NC	Universal	LED-Clip	red	1.20.126.304/0000
2 NO	Universal	LED-Clip	green	1.20.126.305/0000
1 NC	emergency stop	LED-Clip	red	1.20.126.701/0000
1 NC + 1 NO	emergency stop	LED-Clip	yellow	1.20.126.703/0000
2 NC	emergency stop	LED-Clip	red	1.20.126.704/0000

Technical data see page 2 - 216

Please note: E-stop contact blocks can only be combined with E-stop actuators.

2

NEW

RAFIX 22 FS

RAFIX 22 FS - Contact blocks and indicator elements

RAFIX 22 FS - Contact block for PCB with gold contacts



Pict.: Universal, Au contacts, 1 NC + 1 NO

E-stop, Au 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 recommend using superbright LED since this ensures homogeneous illumination.

Technical Data

General information

Lamp optional LED

Dimensions

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

Mechanical design

Mounting soldering in PCB
Contact system bridge-contact self cleaning

Contact materials Au
Contact arrangement see order block
NC contact forcibly actuated yes

Terminals THT solder terminals with locating lug
Robustness 100 N

Electrical characteristics

Operating voltage AC/DC min. 5 V
Operating voltage AC/DC max. 35 V
Operating current AC/DC min. 1 mA
Operating current AC/DC max. 100 mA
Rated power max. 250 mW

Other specifications

Operating life at 10 mA/24 V DC see order block

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

Colour of plunger see order block

Robustness acc. to IEC 60947-5-5 (TÜV)

Shock resistance acc. to IEC 60068-2-27 50 g at 11 ms, amplitude half sinusoidal

Resistance to vibrations 5 g at 10 ... 500 Hz

acc. to IEC 60068-2-6

Environmental resistance acc. to IEC 60068-2-14, -30, -33 and -78

IEC 600 68-2-20

Solderability / solder heat resistance

Solder techniques wave solder bath / manual soldering

Type see order block

Colour of housing grey

RAFIX
22 FS

Approvals



IEC 60947-5-x,
60904, 60073



UL 508, C22.2 No.
14-M91

Typical accessories RAFIX 22 FS - Contact block for PCB with gold contacts

Description	Photo	Order no.	Additional accessories see page
3 mm LED superbright yellow		1.90.690.267/0000	2 - 237, 5 - 17
3 mm LED superbright red		1.90.690.269/0000	2 - 237, 5 - 17
3 mm LED superbright blue		1.90.690.282/0000	2 - 237, 5 - 17
3 mm LED superbright green		1.90.690.285/0000	2 - 237, 5 - 17
3 mm LED superbright white		1.90.690.295/0000	2 - 237, 5 - 17
LED base for signal indicators, height 5 mm		5.30.109.020/0756	2 - 236
Spacer, round, length 7.25 mm, yellow		5.30.759.038/0000	2 - 239, 4 - 82, 5 - 30
Spacer, round, length 8.25 mm, transparent blue		5.30.759.042/0000	2 - 239, 4 - 82, 5 - 30
Spacer triangular, M3		5.30.759.251/0000	2 - 239, 4 - 82, 5 - 30

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

RAFIX 22 FS - Contact blocks and indicator elements

RAFIX 22 FS - Contact block for PCB with gold contacts



Pict.: Universal, Au contacts, 1 NC + 1 NO



E-stop, Au contacts, 2 NC



2

RAFIX
22 FS

Contact arrangement	Type	Lamp	Operating life at 10 mA/24 V DC	Colour of plunger	Order no.
1 NC	Universal	-	1,000,000	red	1.20.126.001/0000
1 NO	Universal	-	1,000,000	green	1.20.126.002/0000
1 NC + 1 NO	Universal	-	1,000,000	red and green	1.20.126.003/0000
2 NC	Universal	-	1,000,000	red	1.20.126.004/0000
2 NO	Universal	-	1,000,000	green	1.20.126.005/0000
1 NC	emergency stop	-	1,000,000	red	1.20.126.401/0000
1 NC + 1 NO	emergency stop	-	1,000,000	yellow	1.20.126.403/0000
2 NC	emergency stop	-	1,000,000	red	1.20.126.404/0000
2 NC + 1 NO	emergency stop „Plus 1“	-	50,000	red	1.20.126.414/0000

Technical data see page 2 - 218

Caution: Emergency stop contact blocks can only be used with emergency stop pushbuttons.
„E-Stop „Plus 1“ contact blocks can only be combined with E-stop „plus 1“ actuators.

RAFIX 22 FS - Contact blocks and indicator elements

RAFIX 22 FS - Contact block for PCB with silver contacts



Pict.: Universal, Ag contacts, 1 NC + 1 NO

Universal, Ag contacts, 1 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

General information

Lamp optional LED

Dimensions

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

Mechanical design

Mounting soldering in PCB
Contact system bridge-contact self cleaning
Contact materials Ag
Contact arrangement see order block
NC contact forcibly actuated yes
Terminals THT solder terminals with locating lug
Robustness 100 N

Electrical characteristics acc. to IEC 60947, AC-15, DC-13

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; I_{the}: 5 A
Rated operating current I_e, DC13 Q300 550 mA/120 V; 270 mA/240 V; I_{the}: 2.5 A

Other specifications

Operating life at 250V / 1A 1,000,000
Operating life at 250V / 2A 100,000
Operating life at 250V / 4A 30,000
Switching reliability at 24V/5mA DC 10 x 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
Schiffszulassungen on request
Robustness acc. to IEC 60947-5-5 (TÜV)
Shock resistance acc. to IEC 60068-2-27 50 g at 11 ms, amplitude half sinusoidal
Resistance to vibrations acc. to IEC 60068-2-6 5 g at 10 ... 500 Hz
Environmental resistance acc. to IEC 60068-2-14, -30, -33 and -78 IEC 600 68-2-20
Solderability / solder heat resistance wave solder bath / manual soldering
Solder techniques V 0
Flame class acc. to UL 94 yes
Hot wire ignition acc. to IEC 60695-2-1 see order block
Type black
Colour of housing black

RAFIX
22 FS

RAFIX 22 FS - Contact blocks and indicator elements

Approvals



IEC 60947-5-x,
60904, 60073



UL 508, C22.2 No.
14-M91

Typical accessories RAFIX 22 FS - Contact block for PCB with silver contacts

Description	Photo	Order no.	Additional accessories see page
3 mm LED superbright yellow		1.90.690.267/0000	2 - 237, 5 - 17
3 mm LED superbright red		1.90.690.269/0000	2 - 237, 5 - 17
3 mm LED superbright blue		1.90.690.282/0000	2 - 237, 5 - 17
3 mm LED superbright green		1.90.690.285/0000	2 - 237, 5 - 17
3 mm LED superbright white		1.90.690.295/0000	2 - 237, 5 - 17
LED base for signal indicators, height 5 mm		5.30.109.020/0756	2 - 236
Spacer, round, length 7.25 mm, yellow		5.30.759.038/0000	2 - 239, 4 - 82, 5 - 30
Spacer, round, length 8.25 mm, transparent blue		5.30.759.042/0000	2 - 239, 4 - 82, 5 - 30
Spacer triangular, M3		5.30.759.251/0000	2 - 239, 4 - 82, 5 - 30

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

RAFIX 22 FS - Contact blocks and indicator elements

RAFIX 22 FS - Contact block for PCB with silver contacts



Pict.: Universal, Ag contacts, 1 NO



E-stop, Ag contacts, 1 NC



Universal, Ag contacts, 1 NC + 1 NO

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 - 222

Caution: Emergency stop contact blocks can only be used with emergency stop pushbuttons.

2

RAFIX
22 FS

RAFIX 22 FS - E-BOX

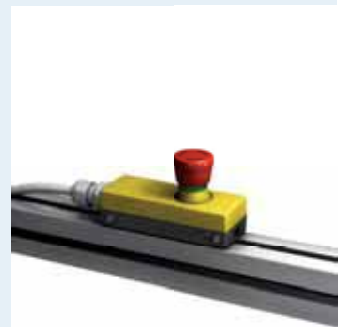


The RAFIX 22 FS E-Box is an elegant, extremely well-designed housing for control components. It can be used wherever individual control component units are required in remote places. Very typical, for example, for Emergency-Stop applications along a production line or on the safety fence.

The dimensions of the RAFIX 22 FS E-BOX and also the assembly concept are based on the edge dimension of a 40 mm profile rail.

2

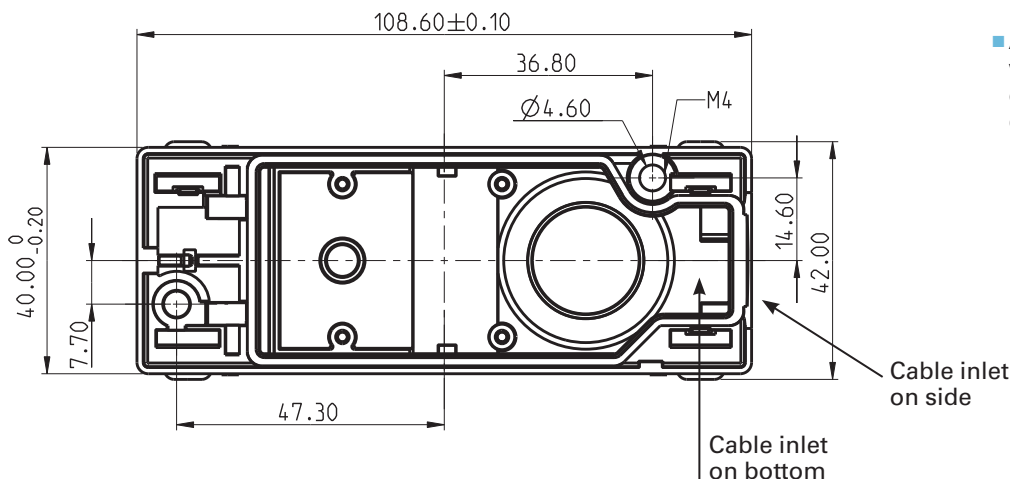
Simple assembly concept, based on 40 mm profile rails



- Insert metal clip in profile rail slot (locating noses on the clip ensure precise adjustment, fix with only one screw)
- The metal clip can also be screwed onto other surfaces.
- Mount housing bottom part
- Attach contact module
- Insert the wires
- Connect the terminals
- Insert RAFIX 22 FS actuator (e.g. Emergency-Stop) into housing top part
- Fix actuator with a ring nut
- Snap housing top part onto bottom part. Done!

RAFIX
22 FS

Drilling pattern for direct mounting with screws

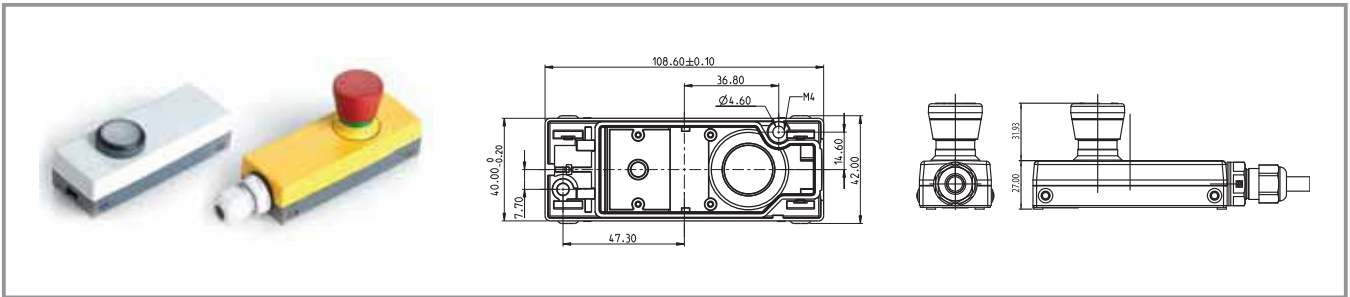


- As an alternative to mounting with the metal clip, the bottom of the housing can be attached directly with M4 screws.

RAFIX 22 FS - Contact blocks and indicator elements

NEW

RAFIX 22 FS - E-Box Housing



2

General Data

- Extremely compact (dimensions 109 x 40 x 27 mm)
- Suitable for actuator from the RAFIX 22 FS control unit range (mounting hole $\varnothing 22.3$ mm)
- With yellow housing cap for Emergency-Stop actuator
- With grey housing cap for standard actuators, such as pushbuttons
 - Fixing with the timesaving one-hole screw attachment method, particularly suitable for aluminium profile rails
 - or alternatively by direct attachment with M4 screws
- Includes respective cable lead-in for direct cabling: side M16 or bottom: M20

Technical Data

RAFIX 22 FS

General information		Other specifications	
Colour of housing cap	see order block	Protection as per EN 60529	IP 65
Dimensions		Protection class	II
Dimensions	109 x 40 x 27 mm	Temperature range	as per IEC 60947-5-1, depending on actuators used
Mounting hole	22.3 mm		
Mechanical design			
Cable attachment	see order block		

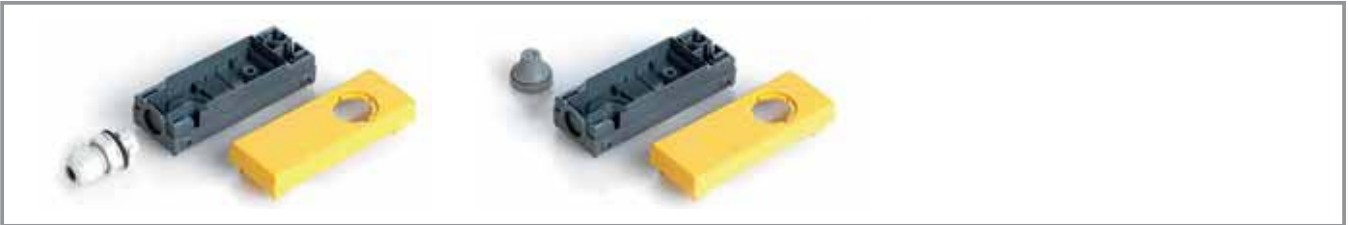
Typical accessories RAFIX 22 FS - E-Box Housing

Description	Photo	Order no.	Additional accessories see page
RAFIX 22 FS - Pushbutton, illuminated, flush lens, round collar, metal front ring, latching		1.30.250.031/1000	2 - 185
RAFIX 22 FS - Emergency stop pushbutton, not illuminable, reset by pulling, IP 69K		1.30.253.601/0300	2 - 204
E-Box contact modules for Emergency-stop applications		5.00.100.221/0000	2 - 229
E-Box contact modules for standard applications		5.00.100.234/0000	2 - 230

RAFIX 22 FS - Contact blocks and indicator elements

RAFIX 22 FS - E-Box, yellow, for Emergency-stop pushbuttons

NEW



Cable attachment	Colour of housing cap	Order no.
side M16	yellow	1.20.810.302/0000
bottom M20	yellow	1.20.810.304/0000

Technical data see page 2 - 226

2

RAFIX 22 FS - E-Box, grey, for pushbuttons

NEW



Cable attachment	Colour of housing cap	Order no.
side M16	grey	1.20.810.303/0000
bottom M20	grey	1.20.810.305/0000

Technical data see page 2 - 226

RAFIX
22 FS

RAFIX 22 FS - Contact blocks and indicator elements

NEW

RAFIX 22 FS - E-Box contact module with gold contacts



2

General Data

- With RAFIX 22 FS contact block for Emergency-Stop actuator or standard actuator
- Contact block with 2 contact cavities (for Emergency-Stop „PLUS1“ with 3 contacts)
- Option with LED for illuminated actuator components
- Line connection (max. 1.5mm²)
 - in bottom of housing
 - with spring clamp (rigid wire, wire with or without cable end sleeve)

Technical Data

RAFIX
22 FS

General information		Ambient temp. operating min.	-25 °C
Lamp optional	LED	Ambient temp. operating max.	+70 °C
		Storage temperature min.	-40 °C
		Storage temperature max.	+80
Mechanical design		Colour of plunger	see order block
Contact system	bridge-contact self cleaning	Robustness	acc. to IEC 60947-5-5 (TÜV)
Contact materials	Au		
Contact arrangement	see order block	Shock resistance acc. to IEC 60068-2-27	50 g at 11 ms, amplitude half sinusoidal
NC contact forcibly actuated acc. to IEC 60947-5-1	yes		
Robustness	100 N	Resistance to vibrations acc. to IEC 60068-2-6	5 g at 10 ... 500 Hz
Electrical characteristics		Environmental resistance	acc. to IEC 60068-2-14, -30, -33 and -78
Operating voltage AC/DC min.	5 V	Type	see order block
Operating voltage AC/DC max.	35 V	Colour of housing	grey
Operating current AC/DC min.	1 mA	LED / colour	see order block
Operating current AC/DC max.	100 mA		
Rated power max.	250 mW		
Other specifications			
Operating life at 10 mA/24 V DC	see order block		
Switching reliability at 24V/5mA DC	10 x 10 ⁻⁶		

RAFIX 22 FS - Contact blocks and indicator elements

Approvals



IEC 60947-5-x,
60904, 60073

RAFIX 22 FS - E-Box contact modules for Emergency-stop applications



2

NEW

RAFIX 22 FS

Contact materials	Contact arrangement	Type	LED / Colour	Operating life at 10 mA/24 V DC	Colour of plunger	Order no.
Au	2 NC	Emergency stop	-	1,000,000	red	5.00.100.221/0000
Au	2 NC	Emergency stop	LED red	1,000,000	red	5.00.100.222/0000
Au	2 NC	Emergency stop	LED white	1,000,000	red	5.00.100.224/0000
Au	2 NC	Emergency stop	LED green	1,000,000	red	5.00.100.225/0000
Au	2 NC + 1 NO	Emergency stop „Plus 1“	-	50,000	red	5.00.100.226/0000

Technical data see page 2 - 228

RAFIX 22 FS - Contact blocks and indicator elements

NEW RAFX 22 FS - E-Box contact modules for standard applications



2

RAFIX
22 FS

Contact materials	Contact arrangement	Type	LED / Colour	Operating life at 10 mA/24 V DC	Colour of plunger	Order no.
Au	2 NC	Universal	-	1,000,000	red	5.00.100.228/0000
Au	2 NC	Universal	LED red	1,000,000	red	5.00.100.229/0000
Au	2 NC	Universal	LED yellow	1,000,000	red	5.00.100.230/0000
Au	2 NC	Universal	LED green	1,000,000	red	5.00.100.231/0000
Au	2 NC	Universal	LED blue	1,000,000	red	5.00.100.232/0000
Au	2 NC	Universal	LED white	1,000,000	red	5.00.100.233/0000
Au	1 NC + 1 NO	Universal	-	1,000,000	red and green	5.00.100.234/0000
Au	1 NC + 1 NO	Universal	LED red	1,000,000	red and green	5.00.100.235/0000
Au	1 NC + 1 NO	Universal	LED yellow	1,000,000	red and green	5.00.100.236/0000
Au	1 NC + 1 NO	Universal	LED green	1,000,000	red and green	5.00.100.237/0000
Au	1 NC + 1 NO	Universal	LED blue	1,000,000	red and green	5.00.100.238/0000
Au	1 NC + 1 NO	Universal	LED white	1,000,000	red and green	5.00.100.239/0000
Au	2 NO	Universal	-	1,000,000	green	5.00.100.240/0000
Au	2 NO	Universal	LED red	1,000,000	green	5.00.100.241/0000
Au	2 NO	Universal	LED yellow	1,000,000	green	5.00.100.242/0000
Au	2 NO	Universal	LED green	1,000,000	green	5.00.100.243/0000
Au	2 NO	Universal	LED blue	1,000,000	green	5.00.100.244/0000
Au	2 NO	Universal	LED white	1,000,000	green	5.00.100.245/0000

Technical data see page 2 - 228

RAFIX 22 FS - Contact blocks and indicator elements

NEW

RAFIX 22 FS - E-Box contact module with silver contacts



2

General Data

- With RAFIX 22 FS contact block for Emergency-Stop actuator or standard actuator
- Contact block with 2 contact cavities (for Emergency-Stop „PLUS1“ with 3 contacts)
- Option with LED for illuminated actuator components
- Line connection (max. 1.5mm²)
 - in bottom of housing
 - with spring clamp (rigid wire, wire with or without cable end sleeve)

Technical Data

RAFIX
22 FS

General information		Operating life at 250V / 4A	30,000
Lamp optional	LED	Switching reliability at 24V/5mA DC	10 x 10 ⁻⁶
Mechanical design		Ambient temp. operating min.	-25 °C
Contact system	bridge-contact self cleaning	Ambient temp. operating max.	+70 °C
Contact materials	Ag	Storage temperature min.	-40 °C
Contact arrangement	see order block	Storage temperature max.	+80 °C
NC contact forcibly actuated	yes	Colour of plunger	see order block
acc. to IEC 60947-5-1		Marine classifications	on request
Robustness	100 N	Robustness	acc. to IEC 60947-5-5 (TÜV)
Electrical characteristics acc. to IEC 60947, AC-15, DC-13		Shock resistance acc. to IEC 60068-2-27	50 g at 11 ms, amplitude half sinusoidal
Rated insulation voltage AC/DC	250 V	Resistance to vibrations acc. to IEC 60068-2-6	5 g at 10 ... 500 Hz
Rated peak voltage	2500 V	Environmental resistance	acc. to IEC 60068-2
Rated operating current I _E , AC15 B300	3 A/120 V; 1.5 A/240 V; I _{the} : 5 A	Flame class acc. to UL 94	-14, -30, -33 and -78 V 0
Rated operating current I _E , DC13 Q300	550 mA/120 V; 270mA/240 V; I _{the} : 2.5 A	Hot wire ignition acc. to IEC 60695-2-1	yes
Other specifications		Type	see order block
Operating life at 250V / 1A	1,000,000	Colour of housing	black
Operating life at 250V / 2A	100,000	LED / colour	see order block

RAFIX 22 FS - Contact blocks and indicator elements

Approvals



IEC 60947-5-x,
60904, 60073

RAFIX 22 FS - E-Box contact modules for Emergency-stop applications



Contact material	Contact arrangement	Type	LED / colour	Operating life at 250V / 4A	Colour of plunger	Order no.
Ag	2 NO	Emergency stop	-	30,000	green	5.00.100.227/0000

Technical data see page 2 - 232

2

NEW

RAFIX 22 FS

RAFIX 22 FS - E-Box contact modules for standard applications



Contact material	Contact arrangement	Type	LED / colour	Operating life at 250V / 4A	Colour of plunger	Order no.
Ag	2 NO	Universal	-	30,000	green	5.00.100.246/0000
Ag	1 NC + 1 NO	Universal	-	30,000	red and green	5.00.100.247/0000
Ag	2 NC	Universal	-	30,000	red	5.00.100.248/0000

Technical data see page 2 - 232

NEW

RAFIX 22 FS

RAFIX 22 FS - Special accessories



Pict.: square

LED yellow

2

Typical accessories RAFIX 22 FS - Special accessories

Description	Photo	Order no.	Additional accessories see page
Fixing spanner for ring nut and front ring		5.05.800.062/0000	5 - 21

RAFIX
22 FS

Blanking cap Ø 22.3 mm



Pict.: square

round, high version

Panel cut-out to IEC 60947-5-1

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
Blanking cap IP65, ring nut, round, high version, can be used for covering mounted PCB contact blocks.	-	-	5.05.200.025/0000
Blanking cap IP65, ring nut, square, high version, can be used for covering mounted PCB contact blocks.	-	-	5.05.200.026/0000

RAFIX 22 FS

Ring nut



Pict.: black

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

LED base for signal indicators



Pict.: LED green



LED white



LED red

Short text	Feature 1	Feature 2	Order no.
LED-Clip, LED red, 24 V DC	-	-	5.05.511.359/0300
LED-Clip, LED yellow, 24 V DC	-	-	5.05.511.359/0400
LED-Clip, LED green, 24 V DC	-	-	5.05.511.359/0500
LED-Clip, LED blue, 24 V DC	-	-	5.05.511.359/0600
LED-Clip, LED white, 24 V DC	-	-	5.05.511.359/0200

NEW

RAFIX
22 FS

LED base for signal indicators



Pict.: with clicked-in LED clip

Short text	Feature 1	Feature 2	Order no.
RAFIX 22 FS - Socket for LED-Clip, quick-connect terminals	-	-	5.55.104.419/0700

RAFIX 22 FS

Female quick-connect terminal DIN 46340-B 2.8-1-MS



Short text	Feature 1	Feature 2	Order no.
Female quick-connect terminal DIN 46340-B 2.8-1-MS	-	-	5.37540.024/8622

With latching detent for mating with a multipole connector.

LED base for signal indicators



Pict.: opaque light grey

Short text	Feature 1	Feature 2	Order no.
LED base for signal indicators, height 5 mm	-	-	5.30.109.020/0756

2

RAFIX
22 FS

RAFIX 22 FS

LED 3 mm, without base



Socket	Colour	Forward voltage typ. U_F at I_F	Max. current, I_F	Light intensity	Order no.	Accessoires lamp extractor
without socket	red	1,6 V/1 mA	30 mA	-	1.90.690.228/0000	-
without socket	yellow	1,9 V/20 mA	50 mA	-	1.90.690.267/0000	-
without socket	red	1,9 V/20 mA	50 mA	-	1.90.690.269/0000	-
without socket	blue	3,6 V/20 mA	30 mA	-	1.90.690.282/0000	-
without socket	green	3,5 V/20 mA	30 mA	-	1.90.690.285/0000	-
without socket	white	3,6 V/20 mA	30 mA	-	1.90.690.295/0000	-

Processing information for 1.90.690.267/0000 and 1.90.690.269/0000

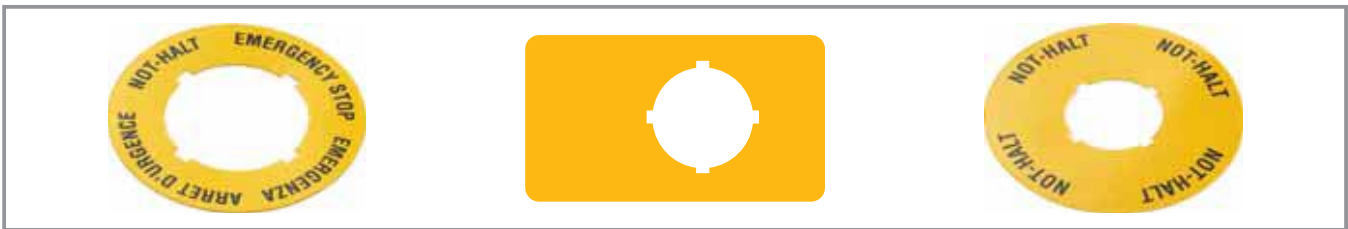
The qualifications for the higher soldering temperatures on lead free soldering processes are as follows:
Temperature stability according J-STD 020 C for reflow soldering 245°C and for wave soldering 245°C/10s.

2

RAFIX
22 FS

RAFIX 22 FS

Emergency stop label, Ø 22,3 mm



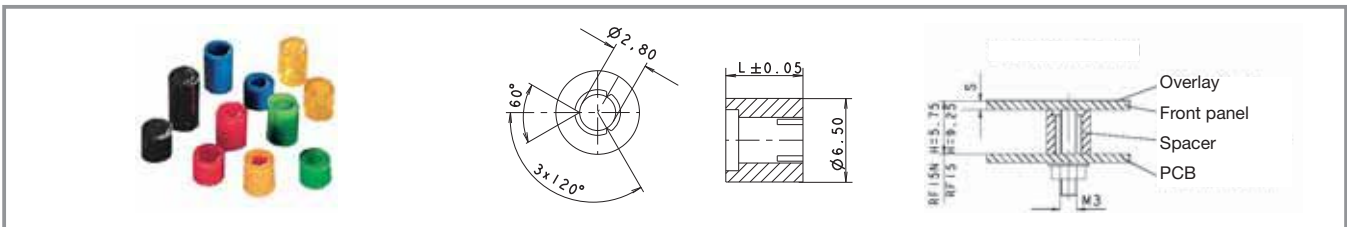
Short text	Feature 1 Ø outward	Feature 2 Ø inward	Order no.
Emergency stop label, yellow, round 60 mm, rigid PVC, with legend „Not-Aus“	60 mm	22.3 mm	5.76.207.001/0400
Emergency stop label, yellow, round 60 mm, rigid PVC, with legend „EMERGENCY-STOP/ARRET D'URGENCE“	60 mm	22.3 mm	5.76.207.002/0400
Adhesive label yellow, round 22.3 / 60 mm, without legend	60 mm	22.3 mm	5.76.204.100/0400
Adhesive label yellow, round 22.3 / 60 mm, with legend 1 x „Not-Aus“	60 mm	22.3 mm	5.76.204.101/0400
Adhesive label yellow, round 22.3 / 60 mm, with legend 1 x „ARRET D'URGENCE“	60 mm	22.3 mm	5.76.204.102/0400
Adhesive label yellow, round 22.3 / 60 mm, with legend 1 x „EMERGENCY-STOP“	60 mm	22.3 mm	5.76.204.103/0400
Emergency stop label, yellow rectangular 36 x 64 mm, without legend	36 x 64 mm	22.3 mm	5.76.205.011/0400
Adhesive label yellow, round 22.3 / 60 mm, with legend „NOT-HALT, EMERGENCY STOP, ARRET D'URGENCE, EMERGENZA“	60 mm	22.3 mm	5.76.204.107/0400
Adhesive label yellow, round 22.3 / 60 mm, with legend 4 x „NOT-HALT“	60 mm	22.3 mm	5.76.204.109/0400
Adhesive label yellow, round 22.3 / 60 mm, with legend 4 x „NOT-AUS“	60 mm	22.3 mm	5.76.204.111/0400
Adhesive label yellow, round 22.3 / 60 mm, with legend 4 x „EMERGENCY STOP“	60 mm	22.3 mm	5.76.204.113/0400
Adhesive label yellow, round 22.3 / 40 mm, with legend „NOT-HALT, EMERGENCY STOP, ARRET D'URGENCE, EMERGENZA“	40 mm	22.3 mm	5.76.204.115/0400
Adhesive label yellow, round 22.3 / 40 mm, with legend 4 x „NOT-HALT“	40 mm	22.3 mm	5.76.204.117/0400
Adhesive label yellow, round 22.3 / 40 mm, with legend 4 x „NOT-AUS“	40 mm	22.3 mm	5.76.204.119/0400
Adhesive label yellow, round 22.3 / 40 mm, with legend 4 x „EMERGENCY STOP“	40 mm	22.3 mm	5.76.204.121/0400

Degree of protection: Rigid PVC: IP40, adhesive foil: IP65

2

RAFIX
22 FS

Spacers, round

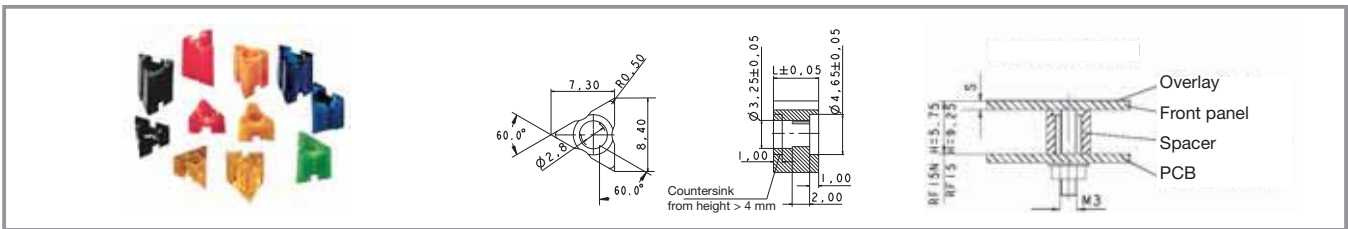


Length	Width	Overall height	Diameter	Colour	Order no.
3.50 mm	-	-	-	blue transparent	5.30.759.023/0000
4 mm	-	-	-	green	5.30.759.025/0000
4.25 mm	-	-	-	blue	5.30.759.026/0000
4.50 mm	-	-	-	red	5.30.759.027/0000
4.75 mm	-	-	-	blue transparent	5.30.759.028/0000
5 mm	-	-	-	black	5.30.759.029/0000
5.25 mm	-	-	-	yellow orange transparent	5.30.759.030/0000
5.50 mm	-	-	-	yellow	5.30.759.031/0000
5.75 mm	-	-	-	green	5.30.759.032/0000
6 mm	-	-	-	blue	5.30.759.033/0000
6.2 mm	-	-	-	blue	5.30.759.251/0000
6.25 mm	-	-	-	red	5.30.759.034/0000
6.50 mm	-	-	-	blue transparent	5.30.759.035/0000
6.75 mm	-	-	-	black	5.30.759.036/0000
7 mm	-	-	-	yellow orange transparent	5.30.759.037/0000
7.25 mm	-	-	-	yellow	5.30.759.038/0000
7.50 mm	-	-	-	green	5.30.759.039/0000
7.75 mm	-	-	-	blue	5.30.759.040/0000
8 mm	-	-	-	red	5.30.759.041/0000
8.25 mm	-	-	-	blue transparent	5.30.759.042/0000
10.00 mm	-	-	-	black	5.30.759.043/0104

Required spacer length = Overall height of key - front panel thickness - 0.5 mm (area embossing).

RAFIX 22 FS

Spacers, triangular



Length	Width	Overall height	Diameter	Colour	Order no.
2.50 mm	-	-	-	blue	5.30.759.094/0000
2.75 mm	-	-	-	red	5.30.759.095/0000
3 mm	-	-	-	blue transparent	5.30.759.096/0000
3.25 mm	-	-	-	black	5.30.759.097/0000
3.50 mm	-	-	-	yellow orange transparent	5.30.759.098/0000
3.75 mm	-	-	-	yellow	5.30.759.099/0000
4 mm	-	-	-	green	5.30.759.100/0000
4.25 mm	-	-	-	blue	5.30.759.101/0000
4.50 mm	-	-	-	red	5.30.759.102/0000
4.75 mm	-	-	-	blue transparent	5.30.759.103/0000
5 mm	-	-	-	black	5.30.759.104/0000
5.25 mm	-	-	-	yellow orange transparent	5.30.759.105/0000
5.50 mm	-	-	-	yellow	5.30.759.106/0000
5.75 mm	-	-	-	green	5.30.759.107/0000
6 mm	-	-	-	blue	5.30.759.108/0000
6.2 mm	-	-	-	blue	5.30.759.253/0000
6.25 mm	-	-	-	red	5.30.759.109/0000
6.50 mm	-	-	-	blue transparent	5.30.759.110/0000
6.75 mm	-	-	-	black	5.30.759.111/0000
7 mm	-	-	-	yellow orange transparent	5.30.759.112/0000
7.25 mm	-	-	-	yellow	5.30.759.113/0000
7.50 mm	-	-	-	green	5.30.759.114/0000
7.75 mm	-	-	-	blue	5.30.759.115/0000

2

RAFIX
22 FS

Length	Width	Overall height	Diameter	Colour	Order no.
8 mm	-	-	-	red	5.30.759.116/0000
8.25 mm	-	-	-	blue transparent	5.30.759.117/0000
9 mm	-	-	-	blue	5.30.759.254/0000
10.00 mm	-	-	-	black	5.30.759.124/0000
10.25 mm	-	-	-	yellow orange transparent	5.30.759.125/0000

Required spacer length = Overall height of key - front panel thickness - 0.5 mm (area embossing).



www.klinkmann.com

Helsinki
tel. +358 9 540 4940
automation@klinkmann.fi

St. Petersburg
tel. +7 812 327 3752
klinkmann@klinkmann.spb.ru

Moscow
tel. +7 495 641 1616
moscow@klinkmann.spb.ru

Yekaterinburg
tel. +7 343 376 5393
yekaterinburg@klinkmann.spb.ru

Samara
tel. +7 846 273 95 85
samara@klinkmann.spb.ru

Kiev
tel. +38 044 495 33 40
klinkmann@klinkmann.kiev.ua

Riga
tel. +371 6738 1617
klinkmann@klinkmann.lv

Vilnius
tel. +370 5 215 1646
post@klinkmann.lt

Tallinn
tel. +372 668 4500
klinkmann.est@klinkmann.ee

Minsk
tel. +375 17 200 0876
minsk@klinkmann.com