

**Control and indicating devices**  
**Series 225 N**



**General information**

Contact block  
 1 N/O + 1 N/C  
 Order ref.: 3 720 070 20



Pushbutton unit, green, 22.5 mm  
 round, black  
 with 1 N/O + 1 N/C

+



=

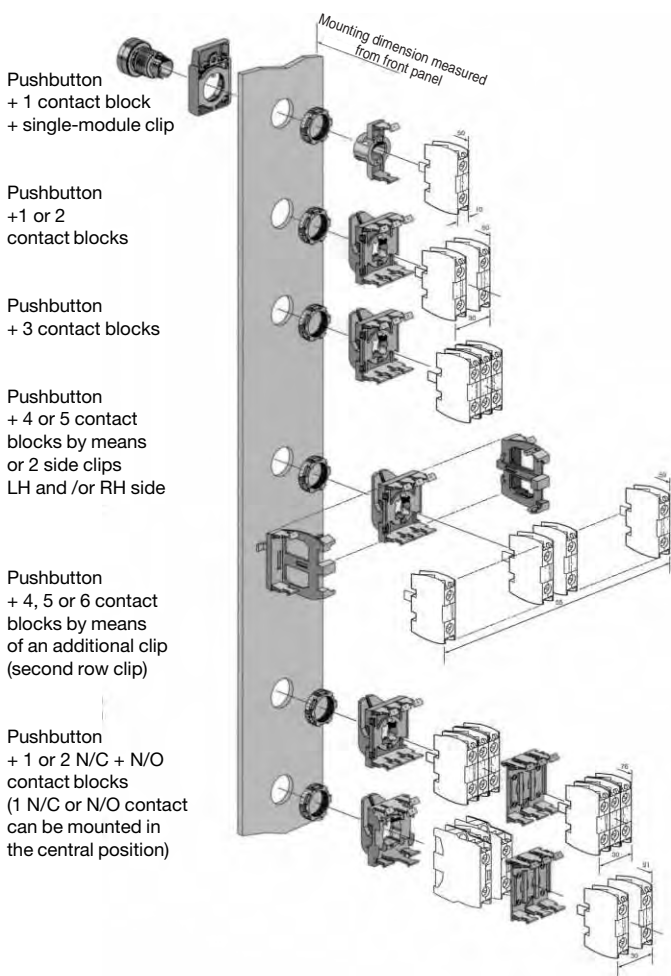


Pushbutton, green  
 round, black  
 Order ref.: 3 720 500 02

Product information	General information
<p><b>Series 225 N</b></p> <p>This series includes nonilluminated and illuminated pushbuttons, key operated pushbuttons, mushroom head stayput pushbuttons, unlatch by turning or unlatch by key (EMERGENCY STOP) pushbuttons, pilot lamps, selector switches, toggle switches, and round key operated switches. Except for pilot lamps and double pushbuttons, all Series 225 N units are available with black or chromium-plated bezels.</p> <p>For <b>application under severe conditions</b>, the units with round operators can be supplied with chromium-plated brass bezels. By using an additional frame, the units can easily be converted to a square pattern.</p> <p>Also available are anti-vandalism devices with a diameter of 30.5 mm. For further information please refer to page 1870. For the easy mounting and cost-saving mono-lamps, refer to page 1864.</p> <p><b>Ordering instructions</b></p> <p>The control and indicating devices shown in this catalog are made up of buttons, contact blocks, lenses, and lampholders. When ordering, please state buttons, lenses, contact blocks, and lamp holders separately, indicating their order reference numbers. Order lamps and legend plates separately.</p>	<p><b>Mounting</b></p> <p>Dimensions for fitting control and indicating devices for 22.5 mm dia. panel cut-outs are outlined in DIN EN 50 007. A special antirotation ring, which must be ordered separately, is available (see accessories, page 1877). The drill plan on page 1857 shows the drilling dimensions of the ring. Larger spacing is required if 5 contact blocks are mounted in one row.</p> <p><b>Fingerproof terminals</b></p> <p>Contact blocks for pushbuttons (nonilluminated and illuminated) and lampholder blocks are fitted with +/- screws and screw driver guides in compliance with VDE 0106 pt 100 specifications. They are supplied with the screw terminal clamps in the open position and feature double-break and self-cleaning silver contacts.</p> <p><b>Modular contact blocks</b></p> <p>The modular contact blocks enable design engineers to build pushbutton combinations that are ideally suited to their requirements. Up to 6 contacts can be fitted in two rows or up to 5 contacts in one row. N/O and N/C contacts can be used in any combination. It is possible to use a lampholder block instead of a contact block in the first row. N/C modules use forcibly operated contacts to IEC 337-1.</p> <p><b>Specifications, standard, and approvals</b></p> <p>Series 225 N standard units comply with VDE, UTE, IEC, UL, and CSA specifications.</p>

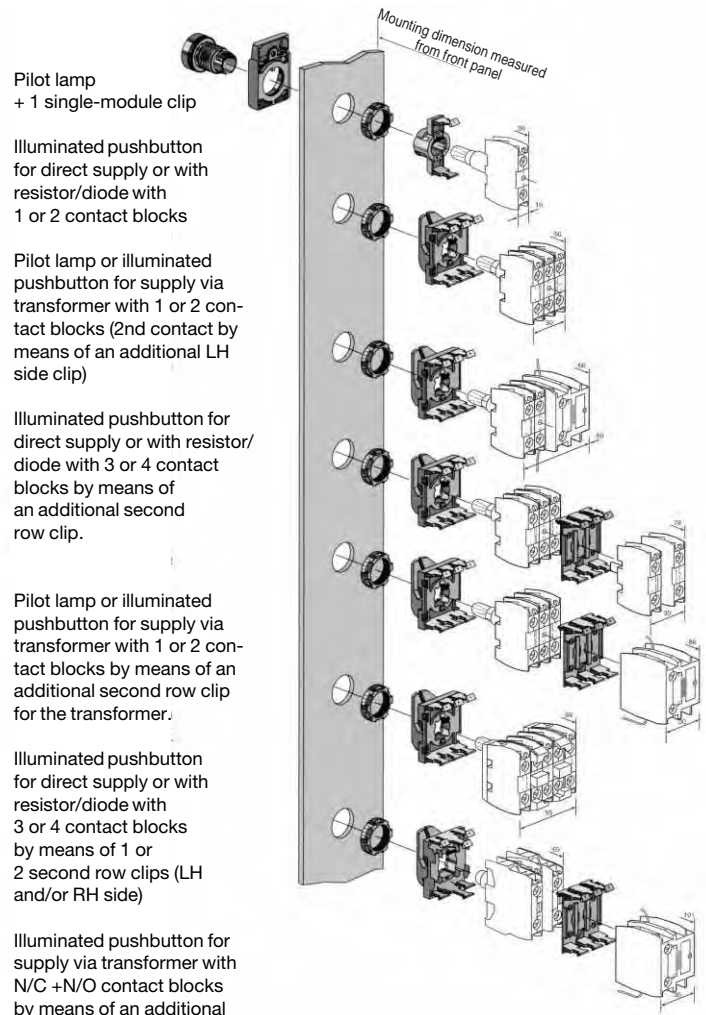
# Construction / Dimensions / Mounting instructions

Example of combinations (excluding pilot lamps) with 1 to 6 contact blocks mounted in one of two rows.



The spacing of mounting holes must be increased when mounting more than 3 contact blocks in one row.

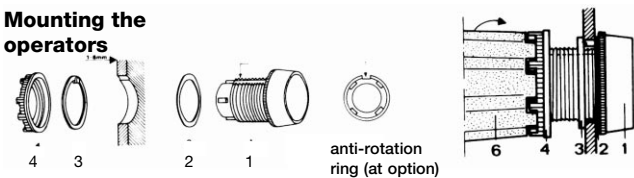
Examples of combinations with 1 lampholder, 1 transformer, and 2 to 4 contact blocks in one or two rows.



The spacing of mounting holes must be increased when mounting more than 3 contact blocks in one row.

## Dimensions of mounting holes for series 225 N units to DIN EN 50 007

### Mounting the operators

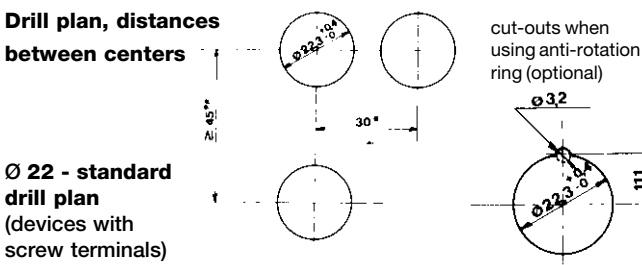


Ensure that the bezel is fully tightened on the pushbutton operator (1). Position the operator in the panel aperture, with the sealing ring (2) in front of the panel, and the locating nut facing up. Tighten the fixing ring (4) either by hand or using the special fixing wrench (6).

### Mounting the modular contact blocks

The modular blocks are mounted to different clips according to the required scheme.

### Drill plan, distances between centers



$\varnothing 22$  - standard drill plan (devices with screw terminals)

- \* = 33 for opaque or transparent shroud
- \* > 40 for  $\varnothing 40$  mushroom head
- \* > 45 for lever handle
- \* > 48 for  $\varnothing 48$  mushroom head
- \* > 70 for  $\varnothing 70$  mushroom head
- \*\* > 45 or 54 for ON-OFF pushbutton
- \*\* > 45 for legend plates
- \*\* > 48 for  $\varnothing 48$  mushroom head
- \*\* > 70 for  $\varnothing 70$  mushroom head
- \*\* > 48 for plate support 4 720 060 03

## Technical details - Series 225 N control and indicating devices

<b>Rated insulation voltage</b>	$V_i$	690 V to VDE, UTE, CEI 600 V to CSA C 22-2 n 14 and UL 508			
<b>Environment class</b>		Class 3 to DIN VDE 0110			
<b>Rated operational voltage</b>	$V_e$	Contact blocks: 1 N/O, 1 N/C: AC 660 V; 1 N/O + 1 N/C: AC 660 V on same polarity Lampholder BA 9 S AC 250 V			
<b>Rated thermal voltage</b>	$I_{th}$	16/10 A (10 A applies to 1 N/O + 1 N/C combination)			
<b>Rated operational current <math>I_e</math></b>	<b>AC</b>	(50-60 Hz)	(ICE 947-3) AC 21	(IEC 947-5-1) AC 15	
		$V_e$ (V)	$I_e$ (A)	$I_e$ (A)	
<b>Definition:</b> AC 21 = switching resistive loads incl. small overloads AC 15 = controlling electromagnetic loads DC 13 = controlling electromagnets	<b>DC</b>	(ICE 947-3) DC 13			
		$V_e$ (V)	$I_e$ (A)		
		230	14	6	
		400	12	4.5	
		440	11	3.5	
		500	10	2.5	
		690	6	1	
		24 V	1.5 A		
		48 V	1 A		
		60 V	0.7 A		
		110 V	0.3 A		
		220 V	0.2 A		
<b>Short-circuit protection</b> (fuse coordination for nonwelding to DIN VDE 0660 Part 200)					
Type <b>DIAZED</b> -fuse elements		10 A TDz, 16 A Dz			
Safety cutout (G characteristics)		10 A			
<b>Mechanical life</b> Pushbutton and contact blocks Operating heads, spring return or stayput Illuminated pushbuttons		3 · 10 <sup>6</sup> operations 3 · 10 <sup>5</sup> operations 3 · 10 <sup>6</sup> operations			
<b>Electrical life</b>	$V_e$ (V)	HZ	AC	$I_e$	no. of operations (x10 <sup>6</sup> )
	230	50/60	21	6/2	1/3
	230	50/60	21	14/10	0.2/0.5
<b>Permissible short-time current</b>		1 min = 70 A, 1 sec = 180 A			
<b>Ambient temperature range</b>		- 30...+60°C (nonilluminated devices) - 30...+60°C (illuminated devices on direct supply) - 30...+60°C (illuminated devices with resistor + diode)			
<b>Storage temperature range</b>		- 50...+80°C			
<b>Degree of protection to DIN IEC 529</b>		IP 65 when fitted in suitable enclosure. IP 67 - Pushbutton, illuminated and nonilluminated round devices with silicone shrouds. (Shroud to be used when conductive liquids are present).			
<b>Climatic proof</b>		The devices are designed for use under tropical conditions. Please contact us for versions for use under extremely severe conditions.			
<b>Terminal capacities</b> Screw terminals: multi-strand with wire end ferrules single strand single strand with wire end ferrules to DIN 46 228		Up to 2 x 2.5 mm <sup>2</sup> (2 x 14 AWG)			
<b>Max. ratings of lamps</b>		Illuminated pushbuttons: 2 W (max.), pilot lamps for direct supply: 2.6 W pilot lamps with resistor/diode: 2 W or 2.6 W			
<b>Approvals for enclosed contact blocks</b>		Types: see pages 1871 – 1872			
<b>Protective measure</b>		Does not apply to operators and illuminated buttons that are built with metallic front plates or enclosures The protection measure does apply if the devices are built into insulated enclosures.			
<b>Shock resistance to IEC 68, Part 2-27 (20 ms)</b>		Pushbutton 70 g (approx.) Mushroom head pushbutton 15 g (approx.) Selector switches 200 g (approx.)			

## Specifications and standards

ENTRELEC-SCHIELE control and indicating devices comply with VDE 0660 specifications for "low voltage control gear" and IEC publication 947-5-1. This statement is a declaration of conformity within the meaning of article 10 of the recommendations for low-voltage equipment dated 19th February, 1973, by the European Community.

The following specifications apply to the use of control and indicating devices:	
VDE 0100	Specifications for building power plants with nominal voltages up to 1000 V.
VDE 0113	Specifications for electrical equipment or machinery with nominal voltages up to 1000 V.
VDE 0199 (DIN IEC 73)	Colors of indicator lights and pushbuttons.
DIN EN 50 007	Assembly dimensions of single hole mounting control devices and indicator lights.
DIN EN 50 013	Industrial low-voltage control gear. Terminal markings and distinctive numbers.

### Colors of pushbuttons

Color	Meaning of color code	Typical application
Red	Stop. Halt. Off, EMERGENCY STOP (stayput mushroom head pushbuttons, yellow plate)	Stopping a drive. Stopping units of a machine. Halt of a cycle. Halt in case of danger.
Yellow	Intervention, e.g., in the event of any reverse travel outside the nor. operat. sequence	Intervention to suppress abnormal conditions or prevent undesired changes.
Green Black	Start. On. Function.	Any switching on or starting of one or more motors. Starting of machine units.
Blue	Any function not covered by the above colors	Unlocking, auxiliary functions, that are not directly related to the operating cycle.
Grey White	Any function except Stop and Off	Stayput pushbuttons, auxiliary functions, for example.

### Colors of indicator lights

Color	Meaning of Color code	Typical application
Red	Danger, alarm abnormal conditions	Call for shutting down, failure of important auxiliary functions. Indication that a plant has been stopped by a protective device.
Yellow	Warning, attention signal for automatic cycle	A value (current, temperature, pressure) approaching its permissible limit.
Green	Safety machine ready-to-run	Ready to start, all auxiliary functions work properly. Units in initial position.
White	General information	Main switch in ON position. Individual drives and auxiliary equipment in operation. Machine is running. Any meaning: Can be used if there are no doubts with regard to the application of red, yellow, and or green, e.g., as confirmation.
Blue	Special information	Any meaning, except red, yellow, and green.

### Colors of illuminated pushbuttons

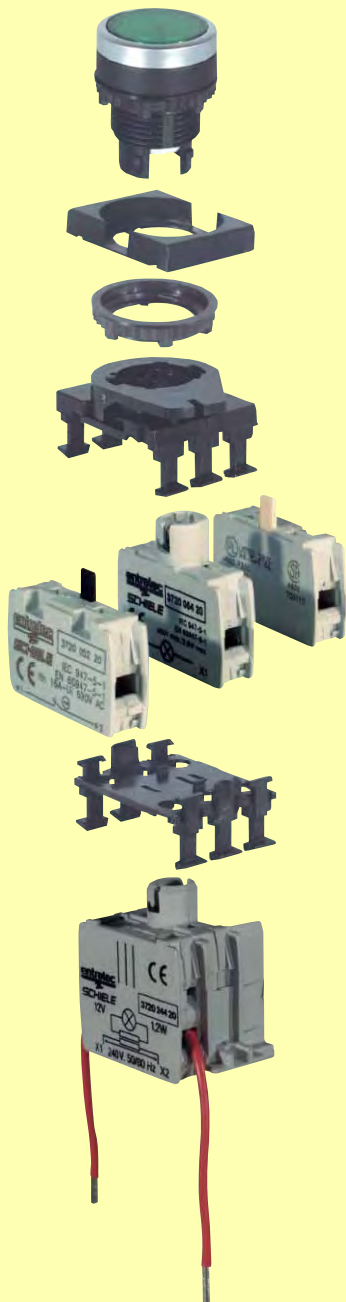
The two basic functions of an illuminated pushbutton are as follows:
<p><b>1. Indication</b> The button lights up to prompt the operator to take some action, for example, to press the button. The colors that should be used for this purpose are red, yellow, green, or blue.</p>
<p><b>2. Acknowledgement</b> The button lights up after having been pressed to acknowledge that the instruction has been accepted or to indicate the new operating status. The colors that should be used for this purpose are white or colorless. The use of flashing light for intermediate acknowledgements is generally acceptable. An illuminated pushbutton must not be used as an EMERGENCY STOP button. If possible, no red illuminated pushbuttons should be used.</p>

# Control and indicating devices

## Control and indicating devices

### ... Special features ...

- ✓ Time and cost saving, one-hand mounting
- ✓ Modern design featuring large operators
- ✓ Large legend plates
- ✓ Fingerproof to VDE 0106 part 100 (VBG 4)
- ✓ All major international approvals
- ✓ Modular contact blocks, expandable to 6 elements



### EMERGENCY STOP MUSHROOM BUTTON




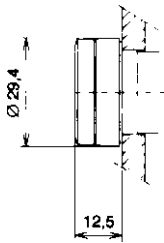


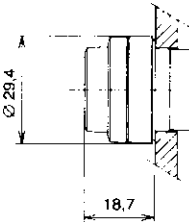


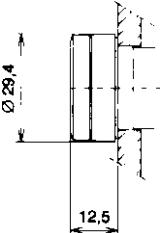


- ✓ European Union standards
  - EN 60204: Electrical equipment for machines
  - EN 418: Emergency-Stop-Equipment
  - EN 81: For passenger and freight elevators

### WIDE RANGE OF ACCESSORIES

- Universal switching elements that contain environment friendly, phosphor-free, plastic material
- Several adapter versions
- Compact lamp blocks
- Filament lamps in all standard supply voltages
- Compatible with the modbox range
- Products protected against vandalism
- Pushbutton caps and legend inserts
- Legend plate carriers
- ABS-enclosures
- Aluminum enclosures
- Safety foot switches

# Pushbutton operators, round for 22.5 mm dia.

## Characteristics

Figure	Type	Color Code	Order ref.: Bezel black plated	Order ref.: Bezel chromium plated	Weight gr approx.	Dimensions
	<b>Pushbutton</b> , round flush without marking	red green black yellow white blue grey	3 720 500 01 3 720 500 02 3 720 500 03 3 720 500 04 3 720 500 05 3 720 500 06 3 720 500 15	3 720 100 01 3 720 100 02 3 720 100 03 3 720 100 04 3 720 100 05 3 720 100 06 3 720 100 15	15	
	<b>Pushbutton</b> , basic element for retrofitting with shrouds		3 720 500 00  <b>Pushbutton caps - page 1878 and 1879</b>	3 720 100 00	15	
	<b>Pushbutton</b> , round projecting, without marking	red green black yellow white blue	3 720 511 01 3 720 511 02 3 720 511 03 3 720 511 04 3 720 511 05 3 720 511 06	3 720 111 01 3 720 111 02 3 720 111 03 3 720 111 04 3 720 111 05 3 720 111 06	15	
	<b>Pushbutton</b> , round projecting push - push	red green black yellow white blue	3 720 510 01 3 720 510 02 3 720 510 03 3 720 510 04 3 720 510 05 3 720 510 06	3 720 110 01 3 720 110 02 3 720 110 03 3 720 110 04 3 720 110 05 3 720 110 06	15	
	<b>Pushbutton</b> , round flush push - push	red green black yellow white blue	3 720 502 01 3 720 502 02 3 720 502 03 3 720 502 04 3 720 502 05 3 720 502 06	3 720 102 01 3 720 102 02 3 720 102 03 3 720 102 04 3 720 102 05 3 720 102 06	15	
	<b>Pushbutton</b> , marking I O	green black red	3 720 801 21 3 720 801 20 3 720 801 27	3 720 401 21 3 720 401 20 3 720 401 27	15	
	<b>Pushbutton</b> , marking I	green	3 720 811 21*			
	<b>Pushbutton</b> , round flush, tappet length adjustable up to 24 mm Reset button  without legend insert	red green black yellow white blue	3 720 800 01 3 720 800 02 3 720 800 03 3 720 800 04 3 720 800 05 3 720 800 06	3 720 400 01 3 720 400 02 3 720 400 03 3 720 400 04 3 720 400 05 3 720 400 06  3 720 401 00	15	

## Notes


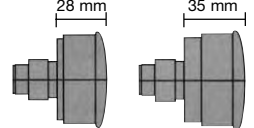

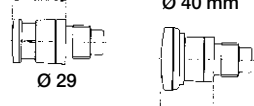

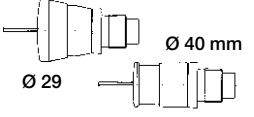

Conversion frame to square pattern page 1877 -

\* For incorporation into modbox enclosures (page 1882) with vertical mounting


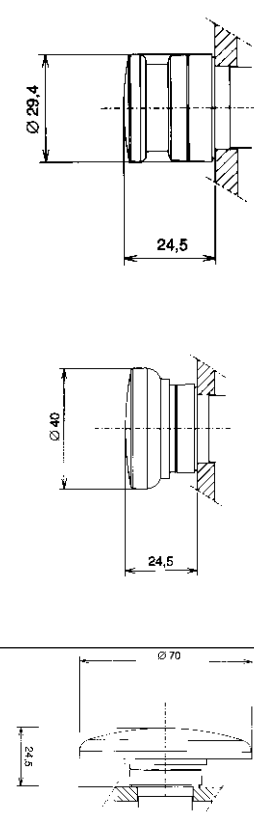


# Mushroom head pushbuttons

## for 22.5 mm dia. - Emergency Stop acc. to EN418

### Characteristics

Figure	Type	Color Code	Order ref.:	Order ref.:	Weight gr approx.	Dimensions
	<b>Mushroom head pushb. with window situated at "3 o'clock"</b> Ø 54 mm Pull to unlatch according to the European standards EN 60 204, 418, 81	red	3 724 900 60  In the window: I: red on yellow background STOP: yellow on red background	3 724 901 60  In the window: I: white on green background STOP: white on red background	50	depressed position 28 mm extended position 35 mm 
	<b>Mushroom head pushb. for EMERGENCY STOP</b> Pull to unlatch  Ø 29 mm Ø 40 mm	red red	3 724 029 01 3 724 040 01		27 32	 Ø 29 Ø 40 mm
	<b>Mushroom head pushb. for EMERGENCY STOP</b> round, key lockable  Ø 29 mm Ø 40 mm	red red	3 724 129 01 3 724 140 01		50 58	 Ø 29 Ø 40 mm
	<b>Mushroom head pushb. for EMERGENCY STOP</b> Ø 48 mm Pull to unlatch without bezel	red for EMERGENCY STOP		3 724 202 01	46	 Ø 48 40 34

### Mushroom head pushbutton - latched and unlatched

Figure	Type	Color Code	Order ref.: Bezel black plated	Order ref.: Bezel chromium plated	Weight gr approx.	Dimensions
	<b>Mushroom head pushb.</b> Ø 29 mm round, stay-put, turn to unlatch	red green black	3 724 603 01 3 724 603 02 3 724 603 03	3 724 203 01 3 724 203 02 3 724 203 03	17	 Ø 29,4 24,5 Ø 40 24,5 Ø 70 24,5
	illuminated push - turn illuminated push - pull	red red	3 724 606 01	3 724 206 01 3 724 207 01	22	
	Ø 40 mm push - turn	red green black	3 724 600 01 3 724 600 02 3 724 600 03	3 724 200 01 3 724 200 02 3 724 200 03	22	
	illuminated push - turn illuminated push - pull	red red	3 724 605 01 3 724 604 01	3 724 205 01 3 724 204 01	22	
	<b>Mushroom head pushb.</b> Ø 29 mm	red green black	3 724 500 01 3 724 500 02 3 724 500 03	3 724 100 01 3 724 100 02 3 724 100 03	17	
	Ø 40 mm	red green black	3 724 800 01 3 724 800 02 3 724 800 03	3 724 400 01 3 724 400 02 3 724 400 03	22	
	Ø 70 mm	red	3 724 801 01	3 724 401 01	58	
	<b>Mushroom head pushb.</b> round, key lockable (key1424 A) Ø 40 mm	red	3 724 700 01	3 724 300 01	36	
	Ø 70 mm	red	3 724 701 01	3 724 301 01	66	

### Notes

Complete unit in enclosure, see page 1885


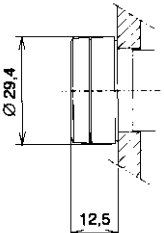



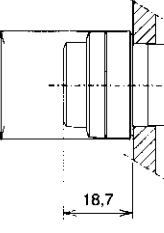

**Double pushbuttons, degree of protection IP40**  
for 22.5 mm dia.

**Characteristics**


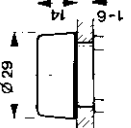

Figure	Type	Color code	Order ref.: Frame black	Order ref.:	Weight gr approx.	Dimensions
	<b>Double pushbutton</b> marking O-I with flush O-I button	I black O red  I green O red  I black	3 720 700 01  3 720 700 02  3 720 700 24		18	
	<b>Double pushbutton</b> marking O-I with projecting O (OFF) button	I green O red	3 720 700 21		20	
	<b>Double pushbutton</b> illuminated marking O-I with flush O (OFF) button	I green O red	3 720 700 12		18	
	<b>Double pushbutton</b> illuminated marking O-I with projecting O (OFF) button	I green O red	3 720 700 11		20	
	<b>Triple pushbutton</b> marking  ↑Up STOP ↓Down	green red green	3 720 700 31		18	
	<b>Double pushbutton</b> marking  ↑ ↓ <b>IP 65</b>	black	3 720 700 14		16	
	<b>Double pushbutton</b> marking  + - <b>IP 65</b>	black	3 720 700 13		16	

## Illuminated pushbuttons for 22.5 mm dia.



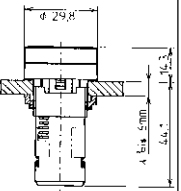

### Characteristics

Figure	Type	Color code	Order ref.: Bezel black plated	Order ref.: Bezel chromium plated	Weight gr approx.	Dimensions
	<b>Illuminated pushbutton</b> , without engraving also suitable for legend inserts pages 1878 – 1879	red green yellow blue opal clear	3 722 500 01 3 722 500 02 3 722 500 04 3 722 500 06 3 722 500 07 3 722 500 09	3 722 100 01 3 722 100 02 3 722 100 04 3 722 100 06 3 722 100 07 3 722 100 09	12	
	<b>Illuminated pushbutton</b> , marking I O	green red	3 722 600 21 3 722 600 27	3 722 200 21 3 722 200 27	13	
	<b>Illuminated pushbutton</b> , flush latching function push - push	red green yellow blue opal clear	3 722 502 01 3 722 502 02 3 722 502 04 3 722 502 06 3 722 502 07 3 722 502 09	3 722 102 01 3 722 102 02 3 722 102 04 3 722 102 06 3 722 102 07 3 722 102 09	15	
	<b>Illuminated pushbutton</b> , round, projecting blank	red green yellow blue opal clear	3 722 800 01 3 722 800 02 3 722 800 04 3 722 800 06 3 722 800 07 3 722 800 09	3 722 400 01 3 722 400 02 3 722 400 04 3 722 400 06 3 722 400 07 3 722 400 09	12	
	<b>Illuminated pushbutton</b> , round, projecting latching function push - push	red green blue opal clear	3 722 700 01 3 722 700 02 3 722 700 06 3 722 700 07 3 722 700 09	3 722 300 01 3 722 300 02 3 722 300 06 3 722 300 07 3 722 300 09	15	

### Lenses for 22.5 mm dia.

	<b>Lens, round</b> , without marking with rippled surface	red green* yellow blue* opal* clear	3 721 500 01 3 721 500 02 3 721 500 04 3 721 500 06 3 721 500 07 3 721 500 09	11	
	<b>Lens, round</b> , for legend insert, smooth (legend insert not supplied) legend inserts pages 1878 – 1879	red green yellow blue opal clear	3 721 600 01 3 721 600 02 3 721 600 04 3 721 600 06 3 721 600 07 3 721 600 09		

### Mono-compact indicator heads, without marking, with rippled surface for 22.5 mm dia.

Figure	Type	Color code	Diagram	Order ref.:	Order ref.: with built in filament lamp 127 / 130 V	Weight gr approx.	Dimensions
	<b>Mono-compact indicator heads</b> , without marking with rippled surface	red green* yellow blue* opal* clear	 3 V X1 X2	<b>Lampholder</b> BA 9 S base (without lamp) and screw connection	1 721 005 01 1 721 005 02 1 721 005 04 1 721 005 06 1 721 005 07 1 721 005 09	20	
		red green* yellow blue* opal* clear	 X1 X2	<b>Lampholder</b> 230 V for lamp 130 V with screw connection (without lamp)	1 721 006 01 1 721 006 02 1 721 006 04 1 721 006 06 1 721 006 07 1 721 006 09	1 721 007 01 1 721 007 02 1 721 007 04 1 721 007 06 1 721 007 07 1 721 007 09	

### Notes

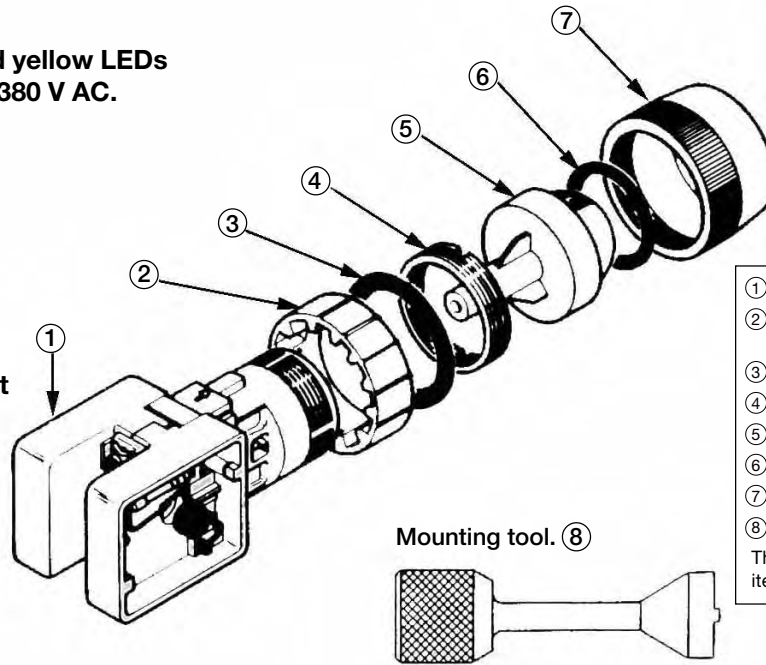
Conversion frame to square pattern page 1877 - Lamp pages 1875 – 1876 - \* use filament lamps only

# LED Signaling Units, Model 22AL

Entrelec offers red, green, and yellow LEDs operating from 24V AC/DC to 380 V AC.

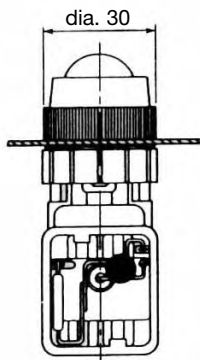
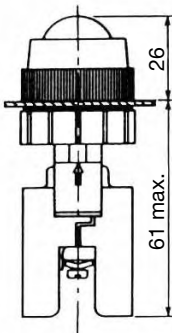
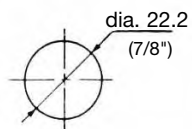
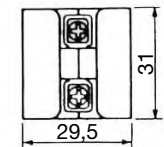
Features include:

- High luminosity
- Visibility over a 180° angle
- Long lifetime eliminates maintenance
- 7/8" (22 mm) diameter cutout



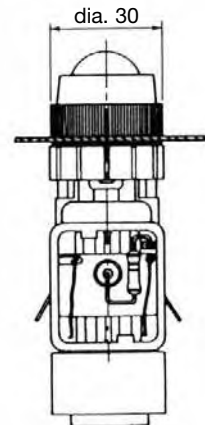
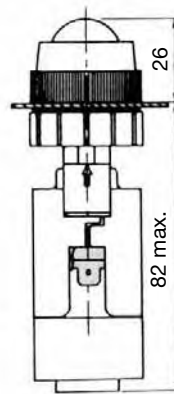
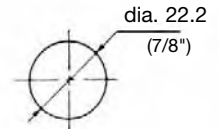
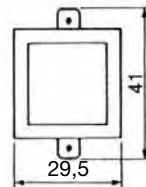
- ① Body.
  - ② Adjustment ring to be positioned according to support thickness.
  - ③ Seal.
  - ④ Tightening nut locked with tool ⑧
  - ⑤ LED Unit.
  - ⑥ Seal mounted by means of tool.
  - ⑦ Bezel.
  - ⑧ Mounting tool.
- The body sub-assembly contains items ①, ②, ③, ④, ⑥ and ⑦.

### DRILLING



DIMENSIONS IN MM EXCEPT WHERE INCHES ARE INDICATED.

### DRILLING



### References

Body	P/N w/chrome bezel	P/N w/black bezel
24 V AC/DC	0102 700.11	0493 018.14
48 V AC/DC	1102 701.06	0493 023.01
127 V AC/DC	0102 702.07	0493 027.05
85 V AC	0102 705.02	0496 271.21
220 V AC	0102 703.00	0493 033.03
380 V AC	0102 704.01	0493 034.04
110 V DC	0102 706.03	0496 268.06




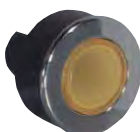
### References

Multi LED Bulbs	P/N
For use at:	
24V, 48V, 85V, 110V, 127V	Red Green Yellow
	0493 019.15 0493 020.12 0493 021.07
For use at:	
220V, 380V	Red Green Yellow
	0493 035.05 0493 036.06 0493 037.07
Adapter for dia. 30.5 mm	0493 875.14
Mounting tool	0496 259.05
Blank Aluminum Nameplate	0493 900.22

# Super-flush buttons and pilot lights, protected against vandalism

for 30.5 mm dia.

## Characteristics

Figure	Type	Color code	Order ref.: Bezel black plated	Order ref.: Bezel chromium plated	Weight gr approx.	Dimensions
	<b>Pushbutton,</b> mirror finish chromium plated without marking	red green black yellow white blue		3 700 308 01 3 700 308 02 3 700 308 03 3 700 308 04 3 700 308 05 3 700 308 06	34	see below
	<b>Pushbutton,</b> mirror finish chromium plated without marking I O	green black red		3 700 309 21 3 700 309 20 3 700 309 27	34	see below
	<b>Illuminated pushbutton,</b> mirror finish chromium plated without marking	red green yellow blue opal clear		3 700 331 01 3 700 331 02 3 700 331 04 3 700 331 06 3 700 331 07 3 700 331 09	33	see below
	<b>Pilot lights,</b> mirror finish chromium plated without marking with rippled surface	red green yellow blue opal clear		3 700 332 01 3 700 332 02 3 700 332 04 3 700 332 06 3 700 332 07 3 700 332 09	33	see below

### General description:

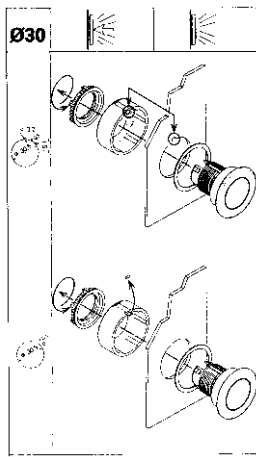
- Anti-vandalism: not removable from the front
- Anti-shock: the short height withstands side shocks and front shocks
- Metal front bezel: ensures a high mechanical stability

### Technical details:

- Adaptors, contact blocks, and illuminated elements
- Standardized drilling: Ø 30.5 mm, with or without anti-rotation protection
- Degree of protection: from the front, IP 65; from the rear IP 20
- Operating temperature: -30°C to +60°C

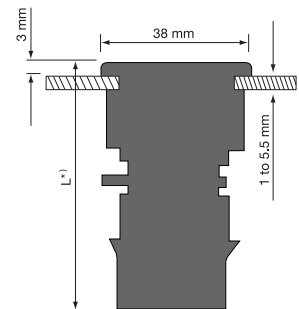
### Hint for mounting:

- The metal bezel is used for the mounting of the units in the panel. Fixing pins can be easily cut-off.



Using the modules below together with the fixing adapters, the following mounting depths result:



Module	L (mm)
3 720 052 20	60
3 720 051 20	60
3 720 054 20	60
3 720 053 20	60
3 720 060 20	70
3 720 096 20	75



## Fixing clips, standard modular contact blocks for series 225 N



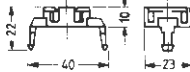


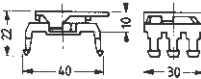


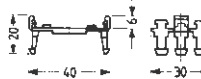


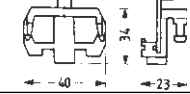


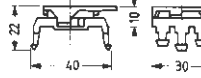


### Features:


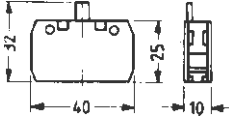



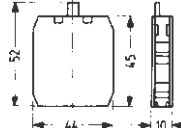
- Expandable modular range of contact blocks and lampholders providing high flexibility and efficiency
- Up to 6 contact blocks in two rows
- Up to 5 contact blocks in one row
- Contact blocks suitable for use with all series 225 N pushbuttons (illuminated and non-illuminated)
- Lampholder of glass fiber reinforced polyamide, suitable for direct combination with lenses, with BA 9 S base for transformer supply or direct connection to 230 V
- Finger protected terminals to VDE 0106 Part 100 (VBG 4) with +/- screw terminals, screwdriver guide, the terminal clamps being in the open position for cost-effective wiring
- Approvals  

## Characteristics

### Fixing clips

Figure	Type	Order ref.:	Weight gr approx.	Clip assignment/ numbering	Dimensions
	<b>Single-module clip</b> for direct snap-on to pushbuttons or lenses	3 720 056 00	3		
	<b>3-module clip</b> with lock	3 720 057 00	7		
	<b>Additional</b> 3-way for second row clip	3 720 058 00	2		
	<b>Side clip</b> for LH or RH side mounting	3 720 059 00	4		
	<b>3-way clip</b> for 1 N/O + 1 N/C 3 720 096 20 + lampholder	3 720 097 00	7		

### Contact blocks (standard devices) with screw terminals (Approvals: )

Figure	Type	Order ref.:	Weight gr. approx.	Dimensions
	Contact block 1 N/O	3 720 051 20	10	
	Contact block 1 N/C	3 720 052 20	10	
	Contact block 1 N/C	3 720 066 20	10	
	Contact block 1 N/O + 1 N/C	3 720 096 20	21	

# Lampholders and special purpose contact blocks, accessories for series 225 N

## Characteristics




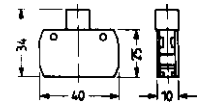




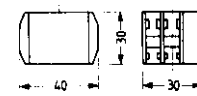
Lampholders, transformer modules with screw terminals (Approvals:  )

Figure	Diagram	Description	Order ref.:	Weight gr approx.	Dimensions
		<b>Lampholder 220 V</b> for lamp 127 V BA 9 S (without lamp)	3 720 053 20	12	
		<b>Lampholder 220 V</b> with BA 9 S base (without lamp) 24...110 V	3 720 054 20	11	
		<b>Transformer</b> 230V/12V for lampholder	3 720 061 20	75	
		<b>Transformer</b> 230V/6V for lampholder	3 720 060 20		
		<b>Transformer</b> 230V/24V for lampholder	3 720 068 20		
		<b>Transformer</b> 400V/24V for lampholder	3 720 064 20		
		<b>Transformer</b> 400V/12V for lampholder	3 721 064 20		





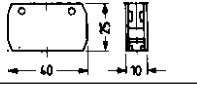


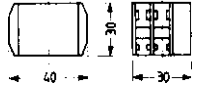


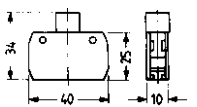




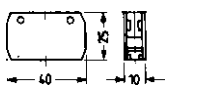

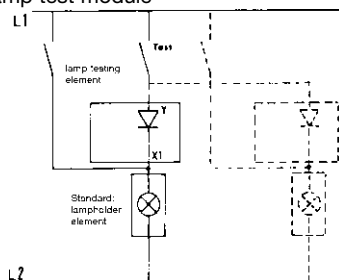
Special purpose devices and accessories (Approvals:  )

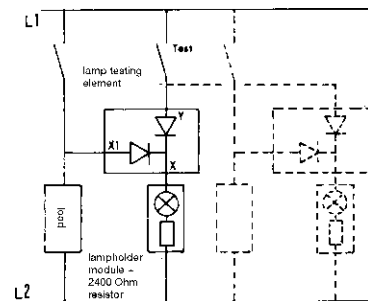
Figure	Diagram	Description	Order ref.:	Weight gr approx.	Dimensions
		<b>Lamp test module</b> 6 to 127 V	3 720 062 20	10	
		<b>Lamp test module</b> ** for decoupled performance check 2 diodes/connecting cable	3 720 092 20	11	
		<b>Lampholder</b> ** with integral 2400 Ω resistor for 220 V, (lamp 130 V)	3 720 091 20	11	
		<b>Lampholder</b> with 47 Ω resistor for 24 V filament lamp for limiting inrush currents of electrical systems	3 720 090 20	11	
		<b>Connecting module</b> with 2 bridged screw terminals	3 720 065 20	10	
		<b>Empty module</b> required for fitting pilot lamp or transformer to 2nd row	3 720 055 00	5	

### Connection diagram of a lamp test module

1) using lamp test module with 1 diode for direct supply of 6 V to 130 V



2) using lamp test module with 2 diodes for 230 V supply with 130 V lamp  
\*\* 3 720 092 20,  
3 720 091 20






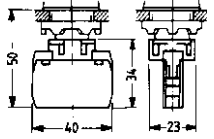



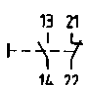
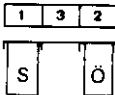
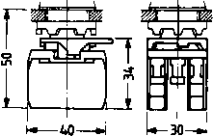
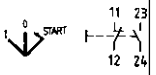
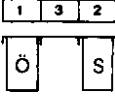

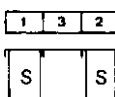

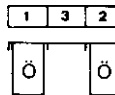

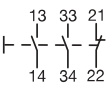

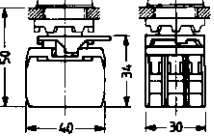
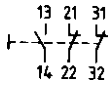
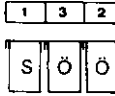
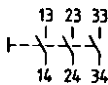
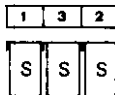
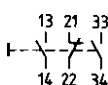
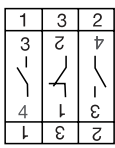

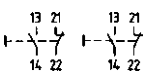
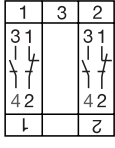
## Notes

\*\* Lampholder 3 720 091 20 to be used only with lamp test module 3 720 092 20.

# Complete switch combinations for series 225 N

## Characteristics

Contact block assemblies for pushbuttons and selector switches with screw terminals

Figure	Diagram	Description	Order ref.:	Weight gr approx.	Clip assignment/ numbering	Dimensions
		<b>Single-module clip</b> fitted with 1 x N/O contact	3 720 080 20	14		
		<b>Single-module clip</b> fitted with 1 x N/C contact	3 720 081 20	14		
		<b>3-module clip</b> fitted with 1 x N/O contact 1 x N/C contact	3 720 070 20	27		
		<b>3-module clip</b> fitted with 1 x N/O contact 1 x N/C contact for double pushbuttons and selector terminals	3 720 071 20	27		
		<b>3-module clip</b> fitted with 2 x N/O contacts	3 720 072 20	27		
		<b>3-module clip</b> fitted with 2 x N/C contacts	3 720 073 20	27		
		<b>3-module clip</b> fitted with 2 x N/O contacts 1 x N/C contact	3 720 077 20	37		
		<b>3-module clip</b> fitted with 1 x N/O contact 2 x N/C contacts	3 720 078 20	37		
		<b>3-module clip</b> fitted with 3 x N/O contacts	3 720 079 20	37		
		<b>3-module clip</b> fitted with 1 x N/O contact 1 x N/C contact 1 x N/O contact <b>only</b> for triple pushb. with screw terminals	3 720 099 20	37		
		<b>3-module clip</b> (3 720 097 00) fitted with 1 x N/O contact 1 x N/C contact 1 x N/O contact 1 x N/C contact	3 720 098 20	48		

# Complete lampholders and contact blocks for series 225 N

## Characteristics

Lampholder assemblies for lenses with screw terminals

Figure	Diagram	Description	Order ref.:	Weight gr approx.	Clip assignment/ numbering	Dimensions
		<b>Single-module clip</b> , fitted with 1 lampholder without lamp	3 720 086 20	14		
		<b>Single-module clip</b> , fitted with 1 lampholder without lamp for 220 V/127 V lamp	3 720 087 20	15		
		<b>3-module clip</b> , fitted with 1 lampholder 1 diode for lamp test without lamp	3 720 088 20	29		
		<b>3-module clip</b> , fitted with 1 lampholder without lamp for 220 V/127 V lamp 2 lamp test modules	3 720 089 20	39		
		<b>Single-module clip</b> , fitted with 1 lampholder BA 9 S and transformer in <b>monobloc</b> <b>Transformer voltages: *</b> 130/6 V 230/6 V 110/12 V 230/12 V 440/12 V 230/24 V 400/24 V 440/24 V	3 720 240 20 3 720 241 20 3 720 243 20 3 720 244 20 3 720 245 20 3 720 247 20 3 720 248 20 3 720 246 20			

## Complete lampholders and contact blocks

for illuminated pushbuttons and illuminated selector switches

		<b>3-module clip</b> , fitted with 1 N/O contact and 1 x lampholder, without lamp	3 720 082 20	29		
		<b>3-module clip</b> , fitted with 1 N/C contact and 1 x lampholder, without lamp	3 720 093 20	29		
		<b>3-module clip</b> , fitted with 1 N/O + 1 N/C contact 1 x lampholder, without lamp	3 720 083 20	38		
		<b>3-module clip</b> , fitted with 2 N/O contacts and 1 x lampholder, without lamp	3 720 084 20	38		
		<b>3-module clip</b> , fitted with 1 N/O + 1 N/C contact 1 x lampholder, without lamp for 220/127 V lamp	3 720 085 20	39		
		<b>3-module clip</b> , fitted with 1 N/O contact and 1 x lampholder, without lamp for 220/127 V lamp	3 720 094 20	24		
		<b>3-module clip</b> , fitted with 1 N/C contact and 1 x lampholder, without lamp for 220/127 V lamp	3 720 095 20	24		


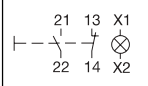
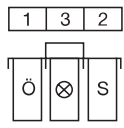
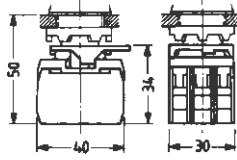
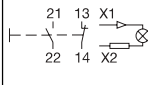
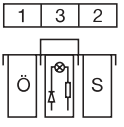
## Notes

\* Other voltages on request - Lamp pages 1875 and 1876

## Complete lamp combinations for double pushbuttons for series 225 N

### Characteristics

Complete lampholders with contact blocks for illuminated pushbuttons

Figure	Diagram	Description	Order ref.:	Weight gr. approx.	Clip assignment/ numbering	Dimensions
		<b>3-module clip *</b> fitted with 1x N/C contact 1 x N/O contact 1 x lampholder, without lamp	3 721 083 20	38		
		<b>3-module clip *</b> fitted with 1x N/C contact 1 x N/O contact 1 x lampholder, without lamp for 220/127 V lamp	3 721 085 20	36		

## Filament lamps and neon lamps with BA 9 S base for series 225 N



### Characteristics

Base	Lamp type	Voltage (V) AC / DC	Wattage (W)	Order ref.:	Weight gr approx.
BA 9 S	Filament lamp for lampholder BA 9S direct supply	6	0.6	4 700 011 21	
		6	2	4 700 011 01	
		12	1.2	4 700 011 22	
		12	2	4 700 011 02	
		24	1.2	4 700 011 23	
		24	2	4 700 011 03	
		30	2	4 700 011 08	
		42	2	4 700 011 07	
		48	2	4 700 011 04	
	60	2	4 700 011 05		
	Filament lamp for lampholder BA 9S with series resistor and diode	127 (130)	2.6	4 700 011 06	
	Neon lamp	110	-	4 700 011 12	
230		-	4 700 011 10		
380		-	4 700 011 11		

### Notes

\* Operates with "I" in the N/O contact and with "O" in the N/C contact.

**Multi-LEDs**  
with BA 9 S base for series 225 N



**Characteristics**

Base	Lamp type	Voltage (V) AC / DC	Wattage (W)	Order ref.:	
BA 9 S	red	24...28		4 700 061 06	
	green	24...28		4 700 062 06	
	yellow	24...28		4 700 064 06	
	white	24...28		4 700 065 06	
	red	60		4 700 051 19	
	green	60		4 700 052 19	
	yellow	60		4 700 054 19	
	white	60		4 700 055 19	
	<b>Multi-LED lamp 8 chips</b>	red	110...130		4 700 051 30
		green	110...130		4 700 052 30
		yellow	110...130		4 700 054 30
		white	110...130		4 700 055 30
		red	220...235		4 700 051 40
		green	220...235		4 700 052 40
		yellow	220...235		4 700 054 40
		white	220...235		4 700 055 40

**Accessories**  
for series 225 N

**Characteristics**

Figure	Description	Order ref.:	
	<b>Silicone shroud</b> transparent  flush projecting	4 720 032 09 4 720 053 09	
	<b>Silicone shroud</b>  01 red 02 green 03 black 04 yellow	4 720 032 01 4 720 032 02 4 720 032 03 4 720 032 04	
	<b>Silicone shroud</b>  transparent for pushbutton + triple pushbutton	4 720 033 09	
	<b>Fixing nut</b> for pushbuttons selector switches and lenses	4 720 006 00	
	<b>Blanking plug</b> to cover unused holes grey black degree of protection IP 65	4 720 009 00 4 720 010 00	
	<b>Protective shroud</b> preferably for mushroom head pushbuttons grey yellow	4 720 001 01 4 720 001 04	
	<b>Anti-rotation ring</b> plastic material (increased protection against rotation)	4 720 007 00	
	<b>Frame</b> black, open at the side	4 720 051 03	

Figure	Description	Order ref.:	
	<b>Reduction ring</b> grey for inserting Ø 22 mm control and indicating devices into Ø 30.5 mm holes yellow	4 720 025 00  4 720 025 04	
	<b>Bezel, chromed matt</b> 8.5 mm high ISO, chromium-plated ISO, black chromed brass	4 720 004 00 4 720 005 00 4 720 003 00	
	<b>Bezel, chromed matt</b> 13.5 mm high ISO, chromium-plated ISO, black	4 720 074 00 4 720 075 00	
	<b>Fixing wrench</b>  for fastening fixing nut	4 720 011 00	
	<b>Lamp extractor</b>	4 720 012 00	
	<b>Spare key</b> ref. 1424 A for key switch 455 for key switch ref. 31313 C	4 720 013 00 4 720 013 45 4 720 013 31	
	<b>Legend plate</b> yellow to RAL 1004 EMERGENCY STOP, Ø 80 mm, material: metal Thick plastic foil, 0.2 mm thick, blank Ø 52 mm	4 320 025 54  4 320 025 53	
	<b>Side covers</b>  for frame black, closed. One pair is supplied	4 720 052 03	

# Pushbutton caps and legend inserts for illuminated pushbutton and pilot lamps

## colored or engraved for series 225 N

### Characteristics

Description Standard texts		Color of the pushbutton cap	Cap for blank pushbuttons 	Order ref.:	Cap for illuminated pushbuttons 	Order ref.:	Caps for pilot lamp lenses 	Order ref.:
		red		4 720 020 01		4 722 020 01		4 721 020 01
		green		4 720 020 02		4 722 020 02		4 721 020 02
		black		4 720 020 03		-		-
		yellow		4 720 020 04		4 722 020 04		4 721 020 04
		white		4 720 020 05		4 722 020 05		4 721 020 05
		blue		4 720 020 06		4 722 020 06		4 721 020 06
			<b>Cap for engraved pushbuttons</b> 		<b>Legend insert transparent, black lettering for illuminated pushbuttons*</b> 		<b>Legend insert transparent, black lettering for pilot lamp lenses</b> 	
<b>GERMAN</b>								
Ab		black		4 720 020 33		4 722 020 33		4 721 020 33
Auf		black		4 720 020 32		4 722 020 32		4 721 020 32
Aus		red		4 720 020 46		4 722 020 46		4 721 020 46
Betrieb		black		4 720 020 50		4 722 020 50		4 721 020 50
Ein		black		4 720 020 31		4 722 020 31		4 721 020 31
Halt		red		4 720 020 45		4 722 020 45		4 721 020 45
Heben		black		4 720 020 42		4 722 020 42		4 721 020 42
Langsam		black		4 720 020 39		4 722 020 39		4 721 020 39
Links		black		4 720 020 37		4 722 020 37		4 721 020 37
Rechts		black		4 720 020 36		4 722 020 36		4 721 020 36
Rückwärts		black		4 720 020 41		4 722 020 41		4 721 020 41
Senken		black		4 720 020 43		4 722 020 43		4 721 020 43
Schnell		black		4 720 020 38		4 722 020 38		4 721 020 38
Vorwärts		black		4 720 020 40		4 722 020 40		4 721 020 40
Zu		black		4 720 020 35		4 722 020 35		4 721 020 35
<b>ENGLISH</b>								
Close		black		4 720 021 35		4 722 021 35		4 721 021 35
Down		black		4 720 021 33		4 722 021 33		4 721 021 33
Fast		black		4 720 021 38		4 722 021 38		4 721 021 38
Forward		black		4 720 021 40		4 722 021 40		4 721 021 40
Left		black		4 720 021 37		4 722 021 37		4 721 021 37
Lower		black		4 720 021 43		4 722 021 43		4 721 021 43
Off		red		4 720 021 46		4 722 021 46		4 721 021 46
On		black		4 720 021 31		4 722 021 31		4 721 021 31
Open		black		4 720 021 59		4 722 021 59		4 721 021 59
Raise		black		4 720 021 42		4 722 021 42		4 721 021 42
Reset		black		4 720 021 52		4 722 021 52		4 721 021 52
Reverse		black		4 720 021 41		4 722 021 41		4 721 021 41
Right		black		4 720 021 36		4 722 021 36		4 721 021 36
Run		black		4 720 021 50		4 722 021 50		4 721 021 50
Slow		black		4 720 021 39		4 722 021 39		4 721 021 39
Start		black		4 720 021 53		4 722 021 53		4 721 021 53
Stop		red		4 720 021 45		4 722 021 45		4 721 021 45
Up		black		4 720 021 32		4 722 021 32		4 721 021 32

### Notes

\*Not for brightly illuminated pushbuttons.

# Pushbutton caps and legend inserts for illuminated buttons and pilot lamps

## with standard symbols for series 225 N

### Characteristics

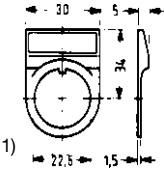
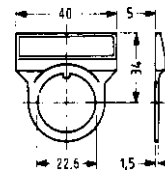
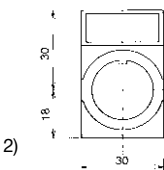


Standard symbols to DIN 1750	Symbol	Caps for pushbuttons black-white lettering standard symbols	Legend inserts for illuminated buttons transparent, black lettering standard symbols	Legend inserts for pilot lamp lenses transparent, black lettering
Description		Order ref.:	Order ref.:	Order ref.:
Continuous straight-line movement ISO 1		4 720 050 22	4 722 050 22	4 721 050 22
Alternating straight-line movement ISO 5		4 720 050 23	4 722 050 23	4 721 050 23
Continuous rotating movem. clockwise ISO 7 A / DIN 100		4 720 050 24	4 722 050 24	4 721 050 24
Continuous rotating movem. anti-clockwise ISO 7 B		4 720 050 25	4 722 050 25	4 721 050 25
Forward ISO 16		4 720 050 26	4 722 050 26	4 721 050 26
Increase in value ISO 28		4 720 050 28	4 722 050 28	4 721 050 28
Decrease in value ISO 29		4 720 050 29	4 722 050 29	4 721 050 29
Adjustable ISO 62		4 720 050 30	4 722 050 30	4 721 050 30
Clamp, block, apply pressure ISO 63 A		4 720 050 31	4 722 050 31	4 721 050 31
Clamp, block, apply pressure ISO 63 B		4 720 050 32	4 722 050 32	4 721 050 32
Unclamp, release ISO 64 A		4 720 050 33	4 722 050 33	4 721 050 33
Unclamp, release ISO 64 B		4 720 050 34	4 722 050 34	4 721 050 34
Brake ISO 65		4 720 050 35	4 722 050 35	4 721 050 35
Release break ISO 66		4 720 050 36	4 722 050 36	4 721 050 36
Automatic cycle (or semi-automatic) ISO 67		4 720 050 37	4 722 050 37	4 721 050 37
Manual control ISO 68		4 720 050 38	4 722 050 38	4 721 050 38
ON/OFF close and open circuit ISO 71		4 720 050 39	4 722 050 39	4 721 050 39
Close circuit (manual impulse) ISO 72/DIN 168		4 720 050 40	4 722 050 40	4 721 050 40
Clutch ISO 74/DIN 46		4 720 050 41	4 722 050 41	4 721 050 41
Declutch ISO 75/DIN 45		4 720 050 42	4 722 050 42	4 721 050 42
Warning "live" ISO 92/DIN 131		4 720 050 43	4 722 050 43	4 721 050 43
Main switch ISO 94		4 720 050 44	4 722 050 44	4 721 050 44
Lubrication jet ISO 101		4 720 050 45	4 722 050 45	4 721 050 45
Machine lighting ISO 102/DIN 139		4 720 050 46	4 722 050 46	4 721 050 46
Greasing ISO 107/DIN 175		4 720 050 47	4 722 050 47	4 721 050 47
Blow ISO 108/DIN 263		4 720 050 48	4 722 050 48	4 721 050 48
Suction ISO 109/DIN 264		4 720 050 49	4 722 050 49	4 721 050 49
(Sound) alarm DIN 165		4 720 050 50	4 722 050 50	4 721 050 50
Universal symbol		4 720 050 54	4 722 050 54	4 721 050 54
Universal symbol		4 720 050 55	4 722 050 55	4 721 050 55
Universal symbol		4 720 050 56	4 722 050 56	4 721 050 56
Universal symbol		4 720 050 51	4 722 050 51	4 721 050 51
Universal symbol		4 720 050 52	4 722 050 52	4 721 050 52
Universal symbol		4 720 050 53	4 722 050 53	4 721 050 53
ISO 70		4 720 050 27	4 722 050 27	4 721 050 27

# Legend plate carriers series 225 N

## Characteristics

### Legend plate carriers for round design

### Legend plate carriers for square design

Legend plate carrier, black, blank, <b>without</b> legend plate  Order ref: 4 720 016 03	Legend plate, clip-in-type, 30 mm wide  Legend plate available in Order ref.: red 4 720 120 .. black 4 720 121 .. aluminum 4 720 122 ..	Legend plate carrier, black, blank, <b>without</b> legend plate engravable in two lines  Order ref: 4 720 017 03	Legend plate, clip-in-type, 40 mm wide  Legend plate available in Order ref.: red 4 720 124.. black 4 720 125.. aluminum 4 720 126..	Legend plate carrier, black, <b>without</b> legend plate engravable in three lines  Order ref: 4 720 018 03	Legend plate carrier for square design, black, <b>without</b> legend plate (side open)  Order ref: 4 720 060 03
 <p>1) Symbols and texts</p>	Suffix (to be added to order ref.:		Suffix (to be added to order ref.:	<p>Legend plate clip-in-type 40 mm wide engravable in three lines</p> <p>Legend plate available in Order ref.: red 4 720 063 01 black 4 720 064 03 aluminum 4 720 065 05</p>	 <p>2) Legend plates see column 2</p>
I	21				 <p><b>Side cover for square design</b> to be ordered separately (supplied in packs of 2) Order ref.: 4 720 052 03</p> 
II	22			21	
III	23			22	
IV	24			23	
V	25			24	
VI	26			25	
O-I	28			26	
I-O-II	29			28	
O	27			29	
on	91 <sup>3)</sup>			27	
off	91 <sup>3)</sup>			91 <sup>3)</sup>	
stop	91 <sup>3)</sup>			91 <sup>3)</sup>	
set up	91 <sup>3)</sup>			91 <sup>3)</sup>	
operation	91 <sup>3)</sup>			91 <sup>3)</sup>	
disturbance	91 <sup>3)</sup>			91 <sup>3)</sup>	
up	91 <sup>3)</sup>			91 <sup>3)</sup>	
down	91 <sup>3)</sup>			91 <sup>3)</sup>	
close	91 <sup>3)</sup>			91 <sup>3)</sup>	
right	91 <sup>3)</sup>			91 <sup>3)</sup>	
left	91 <sup>3)</sup>			91 <sup>3)</sup>	
run	91 <sup>3)</sup>			91 <sup>3)</sup>	
slow	91 <sup>3)</sup>			91 <sup>3)</sup>	
forward	91 <sup>3)</sup>			91 <sup>3)</sup>	
reverse	91 <sup>3)</sup>			91 <sup>3)</sup>	
raise	91 <sup>3)</sup>			91 <sup>3)</sup>	
lower	91 <sup>3)</sup>			91 <sup>3)</sup>	
arrow marking	91 <sup>3)</sup>			91 <sup>3)</sup>	
hand	91 <sup>3)</sup>			91 <sup>3)</sup>	
Other special text, one line	91 <sup>3)</sup>			91 <sup>3)</sup>	
Other special text, two line	92 <sup>3)</sup>			92 <sup>3)</sup>	
To be engraved by customer:	Order ref.:		Order ref.:		
red	4 720 027 01		4 720 037 01		
black	4 720 028 03		4 720 038 03		
aluminum	4 720 029 05		4 720 039 05		
<b>Strips of 20 pre-imprinted aluminum colored legend plates</b>					
	4 720 041 00*		4 720 042 00*		

1):  
**Ordering example**  
Legend plate carrier round + text "ON" aluminum  
Order ref.: 4 720 016 03 + 4 720 122 91

2):  
**Ordering example**  
Legend plate carrier square + side cover + text "STOP" red  
Order ref.: 4 720 060 03 + 4 720 052 03 + 4 720 120 91

3):  
Indicate the suffix 91 after the order reference part number plus the text desired.  
For two lines of text, indicate the suffix 92 after the order reference part number plus the text desired.

**Note!**  
Legend plate carriers and legend plates are supplied as separate items (i.e., not attached)

## Notes

\* To be engraved by customer incl. 20 transparent clip-on plates.

# Modbox® I ABS enclosures for base mounting, for series 225 N



### Specifications:

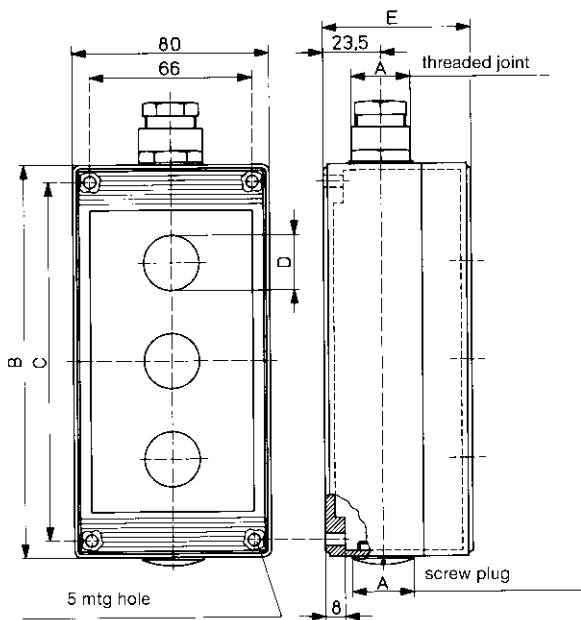
- ABS enclosure: light grey to RAL 7035
- Flame class: HB to UL 94
- Insulation: all-insulated
- Gasket: UR-polyurethane gasket  
closed cell foamed  
(-40°C to + 100 °C)
- Mounting: separate screw channels outside  
the interior space
- Degree of protection: IP 65/DIN 40 050
- Preformed lid threads, captive screws
- Screw heads and fixing channels protected by cover plates

## Characteristics

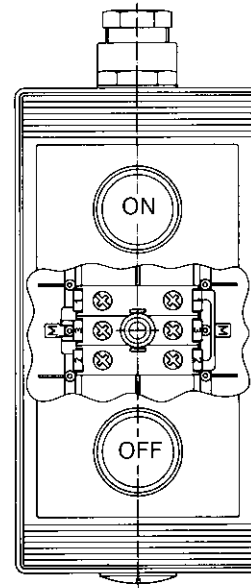
No. of apertures	mm					Mounting	Order ref.: enclosure only		
	A	B	C	D	E				
1	PG 13.5	80	66	∅ 22.5	60	Base mounting	3 720 191 03		
2	PG 13.5	120	106	∅ 22.5	60	Base mounting	3 720 192 03		
3	PG 13.5	160	146	∅ 22.5	60	Base mounting	3 720 193 03		
5	PG 13.5	240	226	∅ 22.5	60	Base mounting	3 720 195 03		

Modules : see page 1883

Dimension:



Design:



## Notes

Legend plate carriers shown on page 1880 should not be used. Marking can only be accomplished by legend inserts.  
PG threaded joint not included.

## Contact blocks, lampholders, and accessories for series 225 N Modbox® ABS enclosures



### Features:

- Accepts all series 225 N operators
- Pushbuttons with marking on request
- 3 modules fit into each aperture (e.g., N/O contact + lampholder + N/C contact)
- Fixing brackets for wall mounting
- Lid joints
- Safeguarding by leading pins
- Cable entry at the top and at the bottom PG 13.5

## Characteristics

3-module clips, contact blocks, lampholders

Figure	Description	Diagram	Order ref.:	Weight gr (ap.)	Dimensions		
	<b>3-module clip</b> for base mounting		3 720 067 00	3		 Contact block with 1 to 3 N/O or N/C contacts for base mounting	
	<b>Contact block</b> 1 N/O contact with screw terminals		3 721 030 20	10			
	<b>Contact block</b> 1 N/C contact with screw terminals		3 721 031 20	10			
	<b>Contact block</b> 1 N/C contact with screw terminals		3 721 032 20	10			
	<b>Lampholder 220 V</b> for 127 V lamp BA 9 S base (without lamp) with screw terminals		3 721 014 20 (2 contact places)	20			 Lampholder block for base mounting
	<b>Lampholder</b> BA 9 S base (without lamp) with screw terminals		3 721 013 20	10			

## Accessories

Item	Description	Order ref.:	
Cover plates for fixing channels	grey to RAL 7035	3 720 215 05	
Fixing brackets for wall mount.	rotatable through 90°	3 720 216 01	
Inside lid joints	Can be rawl plugged without any rework	3 720 217 01	
Sealing kit	4 leading pins plus 2 perforated cover plates to safeguard the enclosure	3 720 218 01	

# Modbox® II ABS-enclosures

for front mounting and blank enclosures without cover holes



**Features:**

- ABS plastic enclosure light grey to RAL 7035
- Degree of protection: IP 65/DIN 40 050
- Separate screw channels outside interior space
- Screw heads and fixing channels protected by cover plates
- Accepts all series 225N operators
- Enclosures - 60 mm or 80 mm high
- Blank enclosure also available

## Characteristics

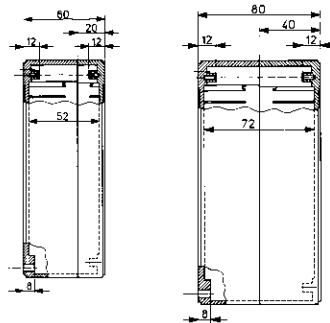
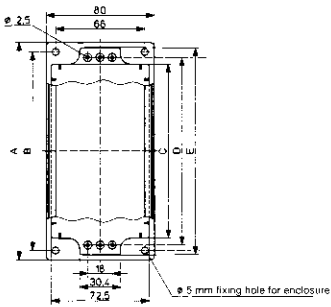
Enclosures for front mounting with holes

No. of apertures	mm					Mounting	Order ref.: enclosure only		
	A	B	C	D	E				
1	PG 13.5	80	66	∅ 22.5 ∅ 22.5	60 80	Front mounting	3 720 191 02 3 720 202 02		
2	PG 13.5	120	106	∅ 22.5 ∅ 22.5	60 80	Front mounting	3 720 192 02 3 720 203 02		
3	PG 13.5	160	146	∅ 22.5 ∅ 22.5	60 80	Front mounting	3 720 193 02 3 720 204 02		
4	PG 16	240	226	∅ 22.5 ∅ 22.5	60 80	Front mounting	3 720 194 02 3 720 205 02		
5	PG 16	240	226	∅ 22.5 ∅ 22.5	60 80	Front mounting	3 720 195 02 3 720 206 02		

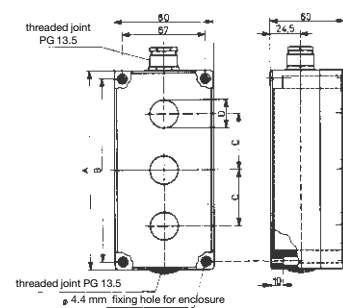
Blank enclosures without holes

mm					Order ref.: 60 mm high	Order ref.: 80 mm high		
A	B	C	D	E				
80	66	48	58	72.5	3 720 191 01	3 720 196 01		
120	106	88	98	112.5	3 720 192 01	3 720 197 01		
160	146	128	138	152.5	3 720 193 01	3 720 198 01		
240	226	208	218	232.5	3 720 194 01	3 720 199 01		

Dimension for blank enclosure:



Dimension for enclosure:



# BKI-I pushbutton stations, base mounting

## control and indicating devices in molded plastic enclosures for series 225 N



**Features:**

- Complete factory built assembly
- Enclosure of grey self-extinguishing plastic
- Grey pushbutton bezels
- Degree of protection IP 65
- Twistproof operators

If versions other than the standard versions shown are required, select the matching combinations consisting of enclosures, contact blocks, lampholders (selection table page 1887), and operators (selection table pages 1861, 1869). The units can be supplied as complete assemblies or as separate items.

### Characteristics

	Pushbutton, 1-way		Pushbutton, 2-way (ON-OFF)		Pushbutton, 3-way (ON-OFF-pilot lamp)			Pushbutton, 3-way (with arrow marking)		
<b>Order ref.:</b>	1 701 010 01	1 701 010 02	1 701 020 01		1 701 030 01			1 701 030 02		
<b>Function</b>	ON	OFF	OFF	ON	OFF	ON	Pilot lamp	Down	OFF	UP
<b>No. of apertures</b>	1	1	2		3			3		
<b>Engraving</b>	ⓘ	⊙	⊙	ⓘ	⊙	ⓘ	none	Ⓣ	⊙	Ⓢ
<b>Pushbutton color</b>	green	red	red	green	red	green	clear	green	red	green
<b>Weight gr (approx.)</b>	115	115	165		210			210		
<b>Built in: 1 N/C contact</b>	-	X	X		X	-	-	-	X	-
<b>1 N/O contact lampholder for 220 V with 127 V lamp series resistor/diode</b>	X	-	-	X	-	X	-	X	-	X
	-	-	-	-	-	-	-	X	-	
	74	74	107		140			140		
	61	61	94		127			127		
<b>Height of enclosure</b>	49	49	49		49			49		
<b>Cable entry:</b>	Top, bottom and RH side (one knockout each for PG 13.5)									

# BKI pushbutton station - with mushroom head button and EMERGENCY STOP button, base mounting



- Complete factory built station
- Enclosure of grey self-extinguishing plastic

## EMERGENCY STOP buttons with E.U. guidelines

### Advantages:

- Status indication -ON or OFF- visible from front or side angle:
  - front: position appears in a viewing window as either text or symbol
  - side: colored collar - yellow or green - that is visible in the ON position and concealed in the OFF position
- High operating safety through "push-pull" function
- Available as either loose item or single-way control station
- Degree of protection IP 65
- Attractive styling







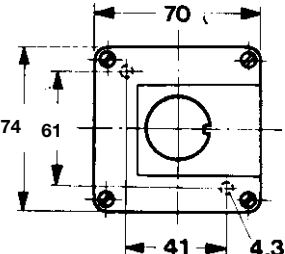
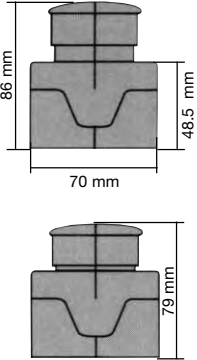
### Guidelines:

- Complying with E.U. guidelines:  
 EN 60204: Electrical equipment of machinery  
 EN 418: Emergency stop function  
 EN 81: Dealing with passenger and freight elevators

### Technical details:

- Mechanical life (max.): 0,1 x 10<sup>6</sup> operations  
 Operating temperature range: - 20 to + 60 °C

## Characteristics

	Mushroom head button 40 mm Ø	Mushroom head button 40 mm Ø	Mushroom head button 40 mm Ø stay-put	Mushroom head button 54 mm Ø, color red Emergency stop button	Mushroom head button 54 mm Ø, color red Emergency stop button		
			 "turn" to unlatch	 "pull" to unlatch		<b>Open style:</b> Operating element: mushroom head button with viewing window in the 3 o'clock position	
						Mushroom head button 54 Ø mm, color red <b>yellow</b> collar, visible in the extended position	
						I - STOP I: red against yellow background STOP: yellow against red background	
<b>Order ref.:</b>	1 701 011 01	1 701 011 21	1 701 012 11	1 701 200 01	1 701 200 02	1 701 200 03	1 701 200 04
Function	OFF	OFF	EMERGENCY STOP	EMERGENCY STOP	EMERGENCY STOP	EMERGENCY STOP	EMERGENCY STOP
No. of apertures	1	1	1	1	1	1	1
Engraving			EMERGENCY STOP				
Pushbutton color	red	red	red (lid yellow)	red (lid yellow)	red (lid yellow)	red (lid yellow)	red (lid yellow)
Weight gr (approx.)	120	120	120	120	130	120	120
Built in: contact block	1 N/C	1 N/O + 1 N/C	1 N/C	1 N/C	2 N/C	1 N/C	2 N/C
Contact block for base mounting	-	-	-	x	x		
Contact block for front mounting	x	x	x			x	x
Dimensions	 <b>48 mm high enclosure</b>			 extended position depressed position			
Cable entry: Top, bottom, and RH side (one knockout each for PG 13.5)							

## Molded enclosures for type BKI nf station plus matching contact blocks and lampholders, series 225 N, plug-in type



### Features:

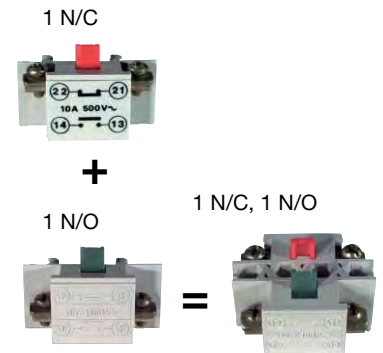
- Molded enclosure of grey self-extinguishing plastic
- Contact blocks combinable in 5 configurations
- Degree of protection IP 65
- Twistproof operators
- Operators - see pages 1861, 1869
- Filament and neon lamps - see page 1875

### Characteristics

Figure	Description	Diagram	Order ref.:	Weight gr. (approx.)	
	<b>Contact block</b> 1 N/C contact		3 701 001 00	10	
	<b>Contact block</b> 1 N/O contact		3 701 002 00	10	
	<b>Lampholder</b> for 6-127 V filament lamp 127-280 V neon lamp		3 701 003 00	16	
	<b>Lampholder</b> BA 9 S base with resistor/diode for 127 V = filament lamp for connection to 220V= supply		3 701 004 00	17	

Each aperture accepts the following contact block configurations:  
1 N/O, 1 N/C, 1 N/O and 1 N/C,  
2 N/O, 2 N/C contacts

### Example



### Molded enclosure type BKI nf

for fitting series 225 N control and indicating devices.

The contact blocks and lampholders shown on this page are simply inserted into prepressed receivers. No screws are required.

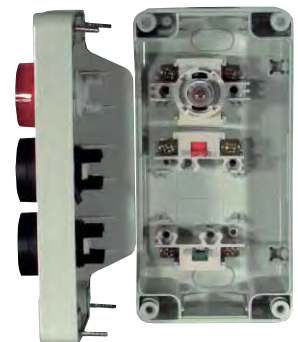


Figure	No. of apertures	Order ref.: enclosure only	Weight gr approx.	Dimensions		
	Ø 22.5 mm			<p>49 mm high enclosure</p>		
<b>BKI 1 nf</b>	1	3 701 010 01	120	A mm	B mm	Cable entry Top, bottom and RH side (1 knockout each for Pg 13.5)
<b>BKI 1 nf</b>	1	3 701 010 02*	120	74	61	
<b>BKI 2 nf</b>	2	3 701 020 01	150	107	94	
<b>BKI 3 nf</b>	3	3 701 030 01	180	140	127	
<b>BKI 5 nf</b>	5	3 701 050 01	220	206	193	

### Notes

\*Yellow lid at the enclosure.

# Aluminum enclosures - series 225 N



**Features:**

- Material: aluminum
- Degree of protection: IP 65/DIN 40 050
- Finish - pebble grey to RAL 7032
- 1 to 3 apertures
- Front mounting
- Blank enclosures also available

## Characteristics

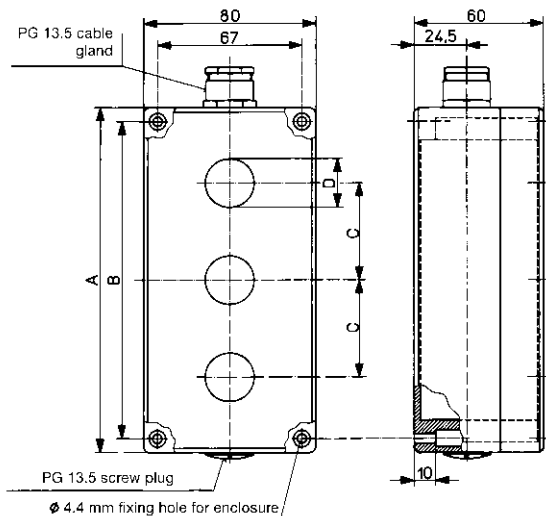
Empty enclosures for front mounting

No. of apertures	Dimensions				Mounting	Order ref.: enclosure only
	A	B	C	D		
1	80	67	-	Ø 22.5	Front mounting	3 720 207 02
2	120	107	45	Ø 22.5		3 720 208 02
3	160	147	45	Ø 22.5		3 720 209 02

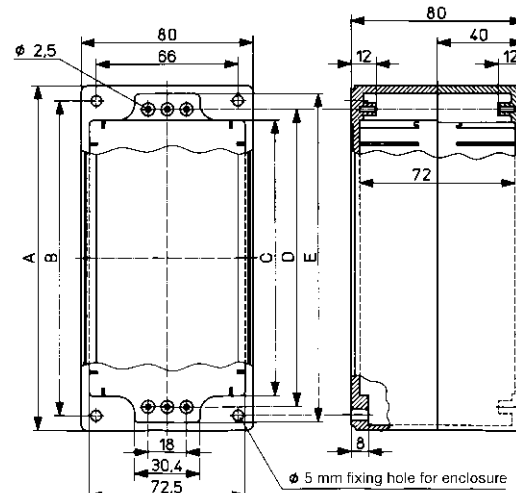
Blank enclosures, without hole

Dimensions					Order ref.:
A	B	C	D	E	
80	67	49	58	70.5	3 720 207 01
120	107	90	98	110.5	3 720 208 01
160	147	130	138	150.5	3 720 209 01

Dimensions: Empty enclosure



Dimensions: Blank enclosure



**Notes**

PG-threaded joint not included.



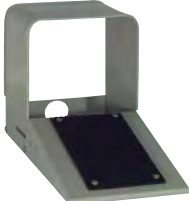
# Foot switch AKF



### Specifications:


- Foot operated momentary switch to control contactors
- Type AKF 11: fitted with 1 contact block (1 N/O + 1 N/C)
- Type AKF 12: fitted with 2 contact blocks (2 N/O + 2 N/C)
- Enclosure: cast iron
- Finish: pebble grey to RAL 7032
- Degree of protection: IP 54
- Cable entries: AKF 11 3 x Pg 16  
AKF 12 2 x Pg 16

## Characteristics

Description, figure	Contact	Type	No. of buttons	Order ref.:	Weight kg (approx.)
Type AKF 11  Type AKF 12 	1 N/O + 1 N/C	<b>AKF 11</b>	1	1 136 097 10	1.3
	2 N/O + 2 N/C	<b>AKF 12</b>	2	1 136 101 10	1.8
protective guard 		<b>for AKF 11</b>		3 136 142 00	1.0
		<b>for AKF 12</b>		3 136 165 00	2.2
<b>Technical details</b>	VDE/IEC				
	V <sub>r</sub> = 660 V	V <sub>o</sub> :	230	400	660 V
	I <sub>tn</sub> 16 A	AC11I <sub>o</sub> :	6.5	5	1 A
Ambient temperature range:			-30°C to + 40°C		

### Notes

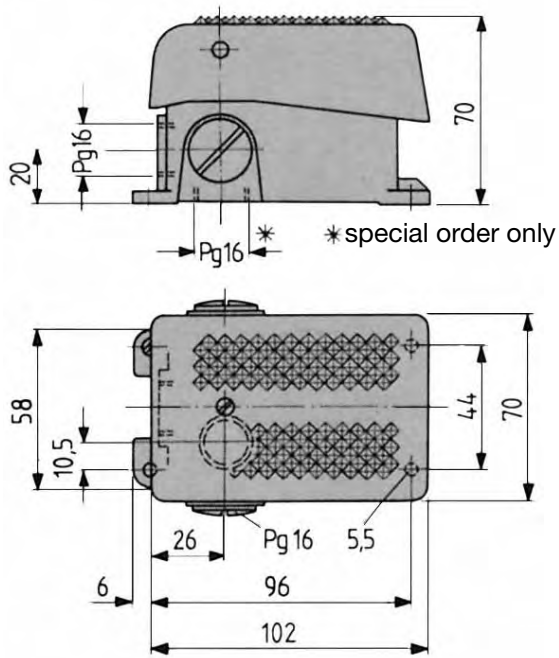
For contact blocks as accessories see page 1887.

 = Berufsgenossenschaft (Employer's liability insurance association), this is a German standard.

# Dimensions

## Foot switch AKF

Dimension AKF 11:



Dimension AKF 12:

