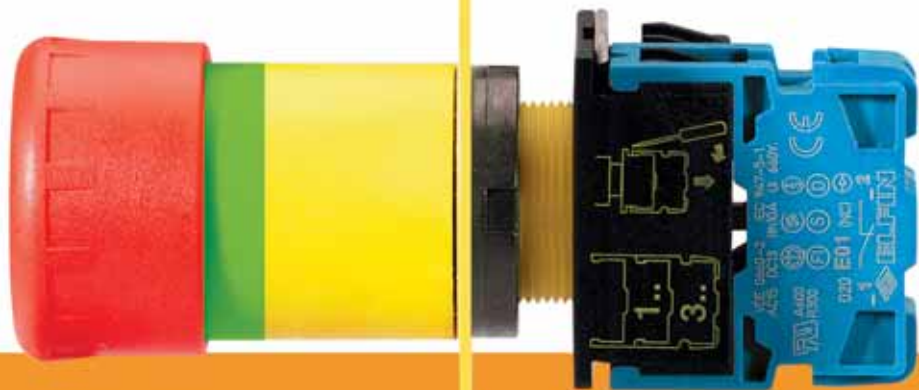




new **ELFIN**



# MANUAL PILOT DEVICE Ø 22



























SUMMARY

020

SM2 020 Series Catalogue  
4th Edition - English  
January 2004

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## PHOTOGRAPHIC SUMMARY

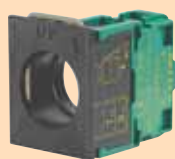


020



### NORMAL OPERATORS

	8		8
	8		9
	9		10
	12		14
	16		17

### ILLUMINATED OPERATORS

	18		18
	18		18
	18		19
	16		20
	20		20

	22		22		21
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	20		17
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### 102 INDICATIONS, LABELS

	24
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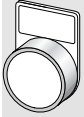
### ACCESSORIES

	26
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ROUND METAL TYPE



020



SQUARE THERMOPLASTIC RESIN



The compositions above are not indicative.



ROUND THERMOPLASTIC RESIN



020

SQUARE/ROUND THERMOPLASTIC RESIN



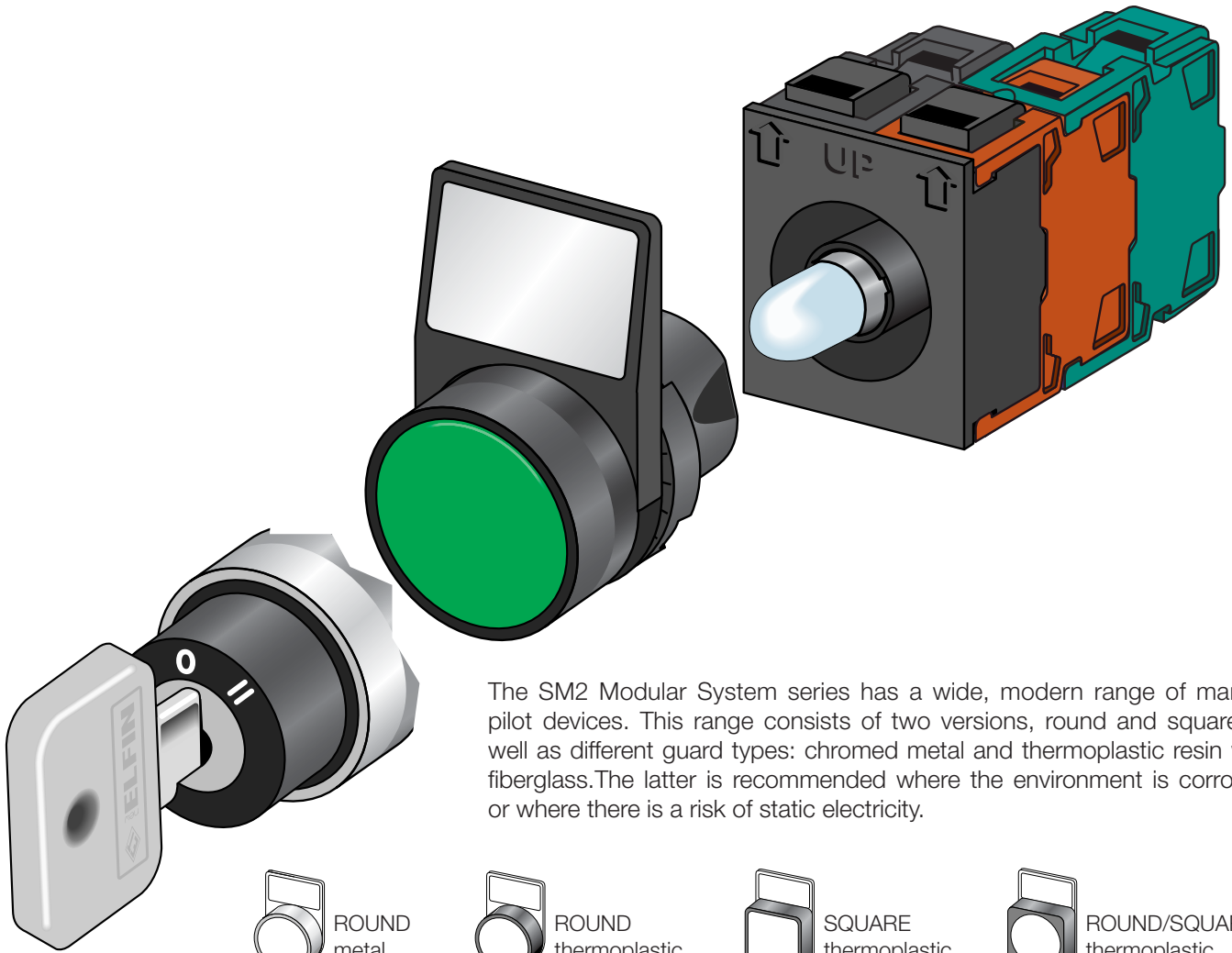
The compositions above are not indicative.



# MANUAL PILOT DEVICES Ø 22

## MANUFACTURING PRINCIPLES

020



The SM2 Modular System series has a wide, modern range of manual pilot devices. This range consists of two versions, round and square as well as different guard types: chromed metal and thermoplastic resin with fiberglass. The latter is recommended where the environment is corrosive or where there is a risk of static electricity.



ROUND metal



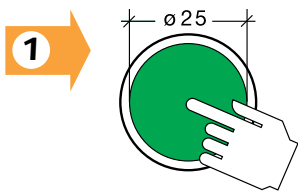
ROUND thermoplastic resin



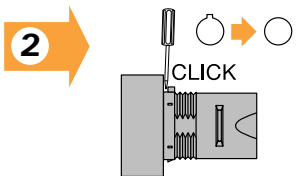
SQUARE thermoplastic resin



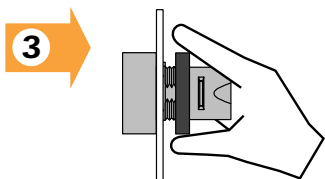
ROUND/SQUARE thermoplastic resin



1 The operators are designed and manufactured with a large switching surface to assure optimal functionality even when wearing work gloves. The larger surface means a larger indicating area in the case of illuminated buttons, with a more even distribution of light enhanced by a diffusor set between the bulb and the lens.



2 The activator key allows correct assembly on drilled panels in conformity with the standard<sup>(1)</sup>, preventing them from turning during assembling operation and use. In case of notchless holes, removing the reference key off with a screwdriver is sufficient.



3 Special design, including ergonomic studies, of all the integral components have assured easy and fast (one man) switch assembly. The products are supplied assembled and ready-to-install. This factor avoids long and time wasting partial assembly of buttons or contact elements.



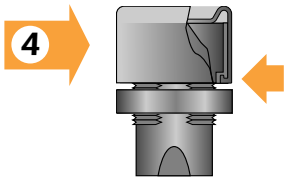
(1) IEC 947-5-1 CEI EN 60947-5-1



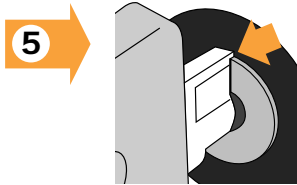
# MANUAL PILOT DEVICES Ø 22

## MANUFACTURING PRINCIPLES

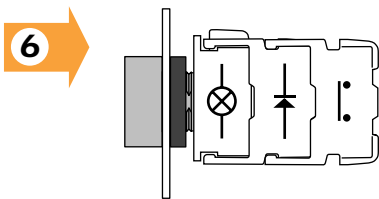
020



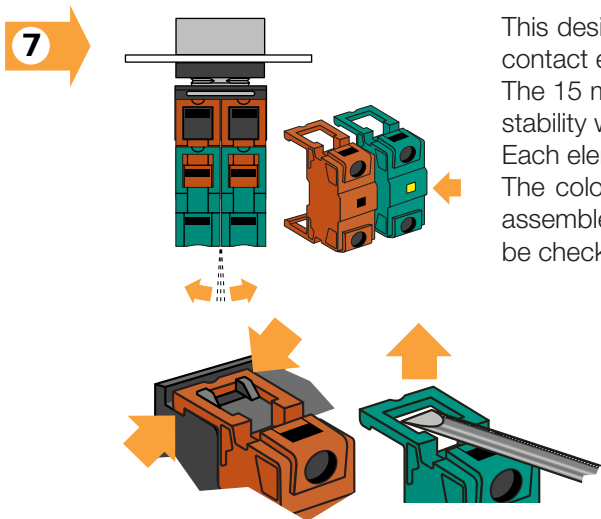
4 The rubber cap is manufactured from transparent silicon for illuminated push-buttons or when symbols are printed on the buttons. The sleeve's special design allows the pushbutton to stay permanently in position and assures cap stability even in case of tampering or lateral stretching.



5 The key has a large contact surface with the lock's rotating surface to prevent the key from breaking when subject to rough use. The pleasant-to-touch rubber grip has an antislip surface.

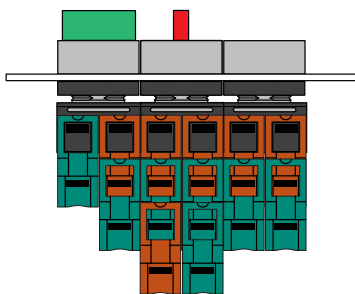


6 The SM2 range is a modular System which allows a combination of different elements to be assembled either alongside (SIDE BY SIDE) or overlapping (STACK SYSTEM) to the connection flange or to the lampholder.

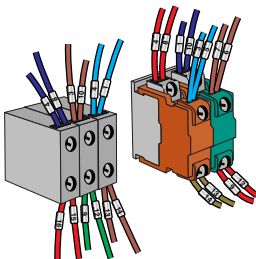


7 This design is one of the most versatile and effective available on the market. The contact elements are designed to interlock making wiring possible after assembly. The 15 mm base and the special wing form, with double hooking surface, provide stability without give.

Each element can be removed by gently levering the housing with a screwdriver. The colour (Green NO - Red NC) makes elements recognition easy, even when assembled. The aperture in the rear up the element allows the contact position to be checked.



8 The STACK SYSTEM makes it possible to use up to six elements without changing the standard (30 mm) horizontal centre-to-centre distances of boxes or pre-drilled panels available on the market, even with lampholders for illuminated operators.



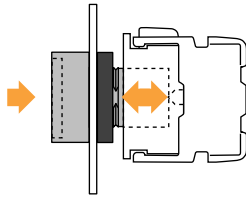
9 The connections are positioned and built to assure the most rational separation, of lampholder and contact element terminal blocks, so preventing the wires getting tangled up.





020

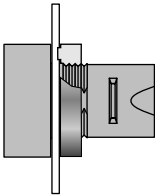
8



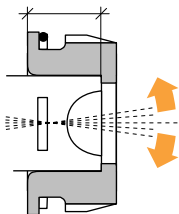
The jog system operators have a long lasting and reliable mechanism applying up-to-date manufacturing principles; since all components are integrated into a single element, these operators maintain a standard size and do not require other elements, even when the operators are illuminated. When ON, the button is below the rim of the guard clearly showing what position the button is in.

Write the letter "P" before the operator code when ordering this version with the exception of the latching mushroom push-buttons and double push-button types.

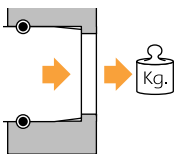
9



The locking systems have special technical features such as the sturdy metal threaded fine-pitch tightening ring nut and lines to prevent it working loose; the metal ensures the ring lasts a long time without give or losing its shape thus providing safe effective locking.

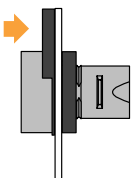


The considerable engagement depth between the operator and the connecting flange provides safe, precise assembling and assures vibrationless operations.



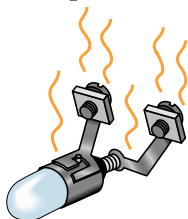
The robust spring hooking system is designed to assure safety, reliability and easy installation, operator/flange connections is through pressure only and does not require screws or other tightening tools. This system transforms the contact elements, and the various actuators, into a single, indivisible element preventing possible deformations, breaking or loosening that can cause the operator to rotate or, in extreme cases, the element to detach and fall inside the panel. These features make the system comply with the current standards<sup>(1)</sup>

10



The plate has a special slope to give it better grip and therefore avoid it possibly working loose after installation.

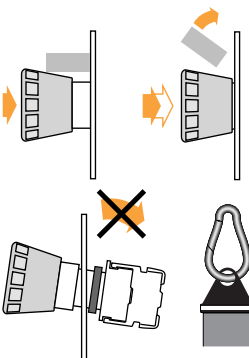
11



The adopted solution for lampholder contacts provides high conductivity even in case of bulbs of different sizes.

The high conductivity cross-section of the contacts favours the dissipation of heat.

12

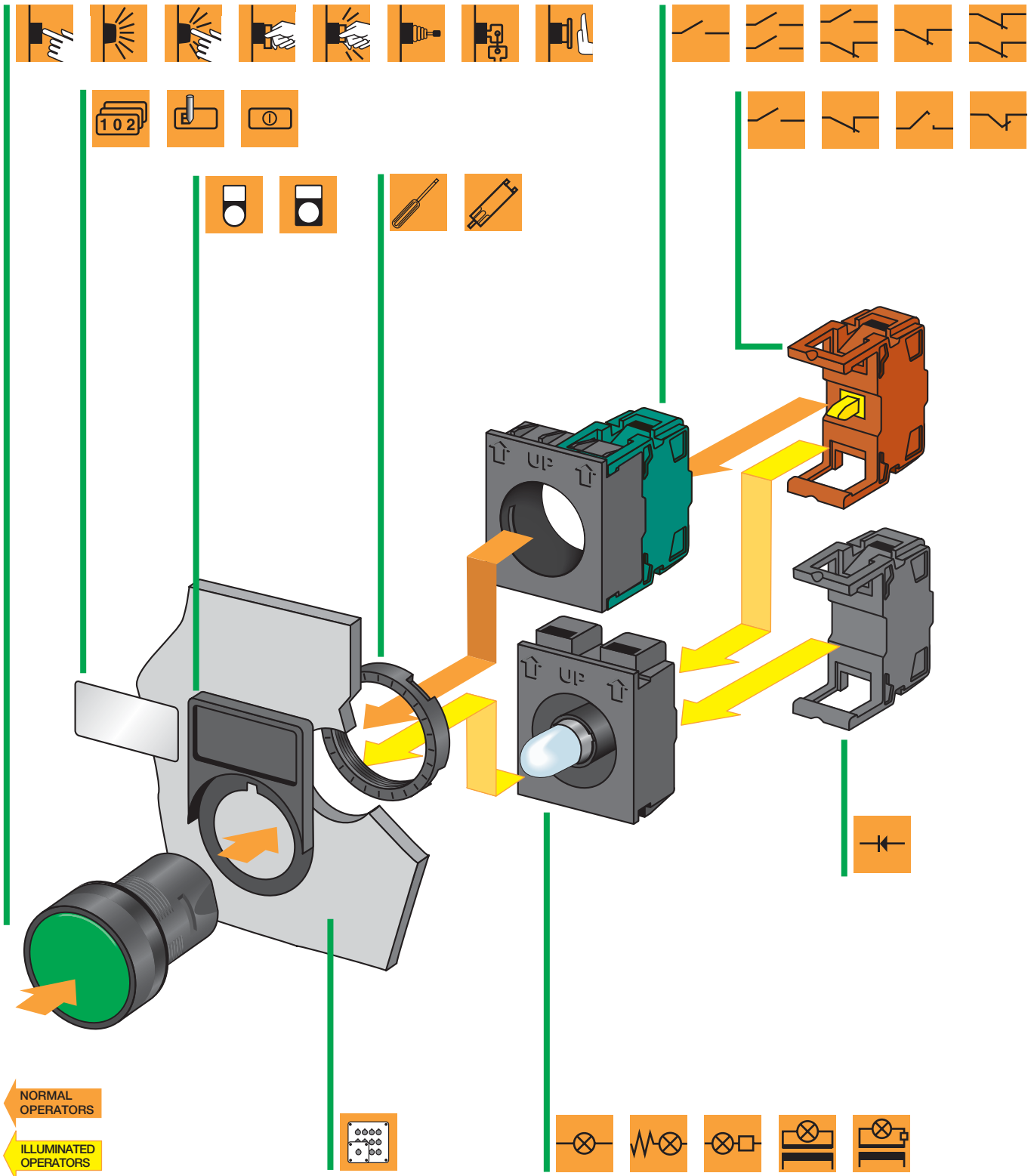


The latching type emergency stop button features a particular tapered shape of the head which permits elimination of any foreign bodies during functioning. The actuator features a mechanical system with fast locking of the latching device which assures precise, safe stop commands as any hesitation or partial pressing of the button does not interfere with its opening and instantaneous locking system. The contact element assembly system makes the stop button unique and "indivisible" because it is not affected by its assembly system to the panel; this means it is able to neutralise any type of fastening whose "unworkmalike execution could compromise safety"<sup>(1)</sup>.

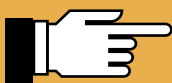


(1) EN 60947-S-1 point 2.3.3 - EN 292/2 point 3.5 point 3.7.3.





NORMAL OPERATORS  
 ILLUMINATED OPERATORS



Use the modular system for an overall view of the SM2 series. The graphic symbols shown in this page and adopted for all New Elfin communications, allow the designer, builder and installer to pinpoint the required elements easily and quickly. While reading this catalogue, keep this page unfolded in order to find and understand each component's function easily and quickly.



## NORMAL PUSH-BUTTONS<sup>(1)(2)</sup>

020



### GUARD TYPE

	METAL	RESIN	RESIN	RESIN
COLOUR	33	21	23	21
BLACK	020PTAINW	▲ 020PTAINK	020PQAINK	020PQTINK
RED	020PTAIRW	▲ 020PTAIRK	020PQAIRK	020PQTIRK
GREEN	020PTAIVW	▲ 020PTAIVK	020PQAIVK	020PQTIVK
YELLOW	020PTAIGW	▲ 020PTAIGK	020PQAIGK	020PQTIGK
BLUE	020PTAIBLW	▲ 020PTAIBLK	020PQAIBLK	020PQTIBLK
WHITE	020PTAIBW	▲ 020PTAIBK	020PQAIBK	020PQTIBK
GREY	020PTAIGRW	▲ 020PTAIGRK	020PQAIGRK	020PQTIGRK
COLOUR	34	22	25	25
BLACK	020PTASNW	▲ 020PTASNK	020PQASNK	020PQTSNK
RED	020PTASRW	▲ 020PTASRK	020PQASRK	020PQTSRK
GREEN	020PTASVW	▲ 020PTASVK	020PQASVK	020PQTSVK
YELLOW	020PTASGW	▲ 020PTASGK	020PQASGK	020PQTS GK
BLUE	020PTASBLW	▲ 020PTASBLK	020PQASBLK	020PQTSBLK
WHITE	020PTASBW	▲ 020PTASBK	020PQASBK	020PQTSBK
GREY	020PTASGRW	▲ 020PTASGRK	020PQASGRK	020PQTSGRK
COLOUR	28	22		
BLACK	020PTSINW	▲ 020PTSINK		
RED	020PTSIRW	▲ 020PTSIRK		
GREEN	020PTSIVW	▲ 020PTSIVK		
YELLOW	020PTSIGW	▲ 020PTSIGK		
BLUE	020PTSIBLW	▲ 020PTSIBLK		
WHITE	020PTSIBW	▲ 020PTSIBK		
GREY	020PTSIGRW	▲ 020PTSIGRK		
COLOUR	24	WITH GUARD	WITHOUT GUARD	
BLACK		▲ 020PTCGN	020PTCSGN	
RED		▲ 020PTCGR	020PTCSGR	
GREEN		▲ 020PTCGV	020PTCSGV	
YELLOW		▲ 020PTCGG	020PTCSGG	
BLUE		▲ 020PTCGBL	020PTCSGBL	
WHITE		▲ 020PTCGB	020PTCSGB	
GREY		▲ 020PTCGGR	020PTCSGGR	



(1) To order the jog system model, write "P" before the code's first letter.  
For example: normal buttons: 020PTAIVK;  
jog buttons: 020PPTAIVK.  
(2) For symbol see page 27

▲ 2 pieces pack





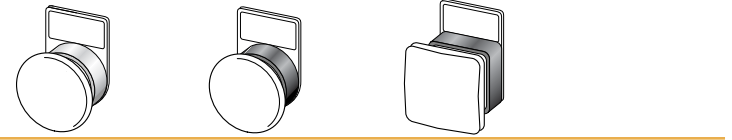
## MUSHROOM PUSH-BUTTONS



020

### GUARD TYPE

METAL      RESIN      RESIN      RESIN



COLOUR	gr.	44	32	27
BLACK		<b>020PTAFNW</b>	<b>020PTAFNK</b>	<b>020PQAFNK</b>
RED		<b>020PTAFRW</b>	<b>020PTAFRK</b>	<b>020PQAFRK</b>
GREEN		<b>020PTAFVW</b>	<b>020PTAFVK</b>	<b>020PQAFVK</b>
YELLOW		<b>020PTAFGW</b>	<b>020PTAFGK</b>	<b>020PQAFGK</b>
BLUE		<b>020PTAFBLW</b>	<b>020PTAFBLK</b>	<b>020PQAFBLK</b>

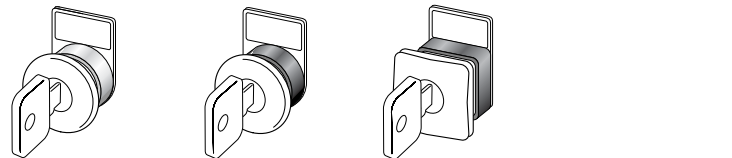
COLOUR	gr.	50
BLACK		<b>020PTAFFNK</b>
RED		<b>020PTAFFRK</b>
GREEN		<b>020PTAFFVK</b>



COLOUR	gr.	30
BLACK		<b>020PTAN</b>
RED		<b>020PTAR</b>

COLOUR	gr.	45	33	34
BLACK		<b>020PTAANW</b>	<b>020PTAANK</b>	<b>020PQTANK</b>
RED		<b>020PTAARW</b>	<b>020PTAARK</b>	<b>020PQTARK</b>

COLOUR	gr.	50
RED		<b>020PTAAFRK</b>



COLOUR	gr.	94	83	83
BLACK		<b>020PTHCNW</b>	<b>020PTHCNK</b>	<b>020PQACNK</b>
RED		<b>020PTHCRW</b>	<b>020PTHCRK</b>	<b>020PQACRK</b>



PULSE Ø 40



PULSE Ø 60



LATCHING Ø 35 (rotation release)



LATCHING Ø 40 (rotation release)



LATCHING Ø 60 (rotation release)



KEY LATCHING (key rotation release) <sup>(1)</sup>



LATCHING Ø 50 (rotation release)



KEY LATCHING (key rotation release) <sup>(1)</sup>

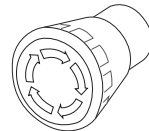


FUNGO Ø 35 (rotation release)

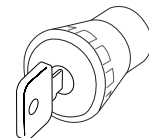
## FAST LOCKING OF THE LATCHING DEVICE

POSITIVE MECHANICAL ACTION ON THE ENTIRE MOVEMENT MAINTAINED ALSO <sup>(2)</sup>

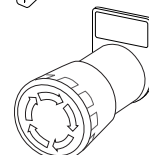
COLOUR	gr.	70
RED		<b>020PTAASRK</b>



COLOUR	gr.	100
RED		<b>020PTHCSRK</b>



COLOUR	gr.	55
RED		<b>020PTFASRK</b>



TYPE OF ACTUATOR INDICATING WHEN THE CONTROL DEVICE IS RESET (UNLATCHED)

COLOUR	gr.	32	CODE
RED			<b>020PTAR</b>
BLACK			<b>020PTAN</b>
YELLOW			<b>020PTAG</b>



Pushbuttons complying with EN 418 standard  
 (1) Key supplied as standard with red grip. Code 73037.  
 (2) UNI EN 292 part. 2<sup>a</sup> point. 3.5

Complete with



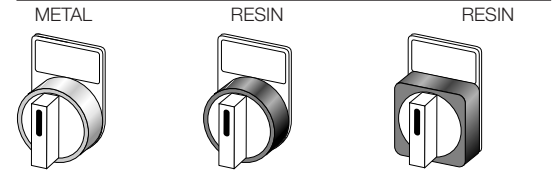
page 22



020



GUARD TYPE



2 POSITIONS CAM



A



B



C



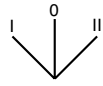
B



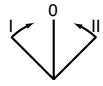
C



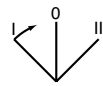
3 POSITIONS



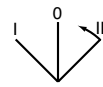
O



O



O



O

COLOUR	gr 38	26	27
BLACK	020STAMANW	▲ 020STAMANK	020SQTMANK
RED	020STAMARW	▲ 020STAMARK	020SQTMARK
GREEN	020STAMAVW	▲ 020STAMAVK	020SQTMAVK
YELLOW	020STAMAGW	▲ 020STAMAGK	020SQTMAGK
BLUE	020STAMABLW	▲ 020STAMABLK	020SQTMABLK
BLACK	020STAMBNW	020STAMBNK	020SQTMBNK
RED	020STAMBRW	020STAMBRK	020SQTMBRK
GREEN	020STAMBWW	020STAMBVK	020SQTMBVK
YELLOW	020STAMBGW	020STAMBGK	020SQTMBGK
BLUE	020STAMBBLW	020STAMBBLK	020SQTMBBLK
BLACK	020STAMCNW	020STAMCNK	020SQTMCNK
RED	020STAMCRW	020STAMCRK	020SQTMCRK
GREEN	020STAMCVW	020STAMCVK	020SQTMCVK
YELLOW	020STAMCGW	020STAMCGK	020SQTMC GK
BLUE	020STAMCBLW	020STAMCBLK	020SQTMCBLK
BLACK	020STAMBNWD	020STAMBNKD	020SQTMBNKD
RED	020STAMBRWD	020STAMBRKD	020SQTMBRKD
GREEN	020STAMBWWD	020STAMBVKD	020SQTMBVKD
YELLOW	020STAMBGWD	020STAMBGKD	020SQTMBGKD
BLUE	020STAMBBLWD	020STAMBBLKD	020SQTMBBLKD
BLACK	020STAMCNWS	020STAMCNKS	020SQTMCNKS
RED	020STAMCRWS	020STAMCRKS	020SQTMCRKS
GREEN	020STAMCVWS	020STAMCVKS	020SQTMCVKS
YELLOW	020STAMCGWS	020STAMCGKS	020SQTMC GKs
BLUE	020STAMCBLWS	020STAMCBLKS	020SQTMCBLKS
BLACK	020STAMONW	▲ 020STAMONK	020SQTMONK
RED	020STAMORW	▲ 020STAMORK	020SQTMORK
GREEN	020STAMOVW	▲ 020STAMOVK	020SQTMOVK
YELLOW	020STAMOGW	▲ 020STAMOGK	020SQTMOGK
BLUE	020STAMOBLW	▲ 020STAMOBLK	020SQTMOBLK
BLACK	020STAMONWC	▲ 020STAMONKC	020SQTMONKC
RED	020STAMORWC	▲ 020STAMORKC	020SQTMORKC
GREEN	020STAMOVWC	▲ 020STAMOVKC	020SQTMOVKC
YELLOW	020STAMOGWC	▲ 020STAMOGKC	020SQTMOGKC
BLUE	020STAMOBLWC	▲ 020STAMOBLKC	020SQTMOBLKC
BLACK	020STAMONWS	020STAMONKS	020SQTMONKS
RED	020STAMORWS	020STAMORKS	020SQTMORKS
GREEN	020STAMOVWS	020STAMOVKS	020SQTMOVKS
YELLOW	020STAMOGWS	020STAMOGKS	020SQTMOGKS
BLUE	020STAMOBLWS	020STAMOBLKS	020SQTMOBLKS
BLACK	020STAMONWD	020STAMONKD	020SQTMONKD
RED	020STAMORWD	020STAMORKD	020SQTMORKD
GREEN	020STAMOVWD	020STAMOVKD	020SQTMOVKD
YELLOW	020STAMOGWD	020STAMOGKD	020SQTMOGKD
BLUE	020STAMOBLWD	020STAMOBLKD	020SQTMOBLKD



See the diagram combination on page 28  
▲ 2 pieces pack

Complete with



page 22

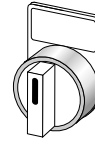


GUARD TYPE

METAL

RESIN

RESIN



CONTINUE CAM



E



E



T



T

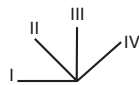


T

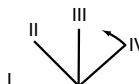


T

4 POSITIONS

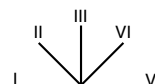


Q

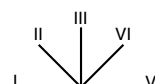


U

5 POSITIONS



R



Z

COLOUR  38 26 27

BLACK **020STAMENW** **020STAMENK** **020SQTMENK**

BLACK **020STAMENWD** **020STAMENKD** **020SQTMENKD**

BLACK **020STAMTNW** **020STAMTNK** **020SQTMTNK**  
 RED **020STAMTRW** **020STAMTRK** **020SQTMTRK**  
 GREEN **020STAMTVW** **020STAMTVK** **020SQTMTVK**  
 YELLOW **020STAMTGW** **020STAMTGK** **020SQTMTGK**  
 BLUE **020STAMTBLW** **020STAMTBLK** **020SQTMTBLK**

BLACK **020STAMTNWC** **020STAMTNKC** **020SQTMTNKC**  
 RED **020STAMTRWC** **020STAMTRKC** **020SQTMTRKC**  
 GREEN **020STAMTVWC** **020STAMTVKC** **020SQTMTVKC**  
 YELLOW **020STAMTGW** **020STAMTGKC** **020SQTMTGKC**  
 BLUE **020STAMTBLWC** **020STAMTBLKC** **020SQTMTBLKC**

BLACK **020STAMTNWS** **020STAMTNKS** **020SQTMTNKS**  
 RED **020STAMTRWS** **020STAMTRKS** **020SQTMTRKS**  
 GREEN **020STAMTVWS** **020STAMTVKS** **020SQTMTVKS**  
 YELLOW **020STAMTGS** **020STAMTGKS** **020SQTMTGKS**  
 BLUE **020STAMTBLWS** **020STAMTBLKS** **020SQTMTBLKS**

BLACK **020STAMTNWD** **020STAMTNKD** **020SQTMTNKD**  
 RED **020STAMTRWD** **020STAMTRKD** **020SQTMTRKD**  
 GREEN **020STAMTVWD** **020STAMTVKD** **020SQTMTVKD**  
 YELLOW **020STAMTGW** **020STAMTGKD** **020SQTMTGKD**  
 BLUE **020STAMTBLWD** **020STAMTBLKD** **020SQTMTBLKD**

COLOUR  38 26 27

BLACK **020STAMQNW** **020STAMQNK** **020SQTMQNK**  
 RED **020STAMQRW** **020STAMQRK** **020SQTMQRK**  
 GREEN **020STAMQVW** **020STAMQVK** **020SQTMQVK**  
 YELLOW **020STAMQGW** **020STAMQGK** **020SQTMQGK**  
 BLUE **020STAMQBLW** **020STAMQBLK** **020SQTMQBLK**

BLACK **020STAMUNW** **020STAMUNK** **020SQAMUNK**

COLOUR  38 26 27

BLACK **020STAMRNW** **020STAMRNK** **020SQTMRNK**  
 RED **020STAMRRW** **020STAMRRK** **020SQTMRRK**  
 GREEN **020STAMRVW** **020STAMRVK** **020SQTMRVK**  
 YELLOW **020STAMRGW** **020STAMRGK** **020SQTMRGK**  
 BLUE **020STAMRBLW** **020STAMRBLK** **020SQTMRBLK**

BLACK **020STAMZNW** **020STAMZNK** **020SQTMZNK**  
 RED **020STAMZRW** **020STAMZRK** **020SQTMZRK**  
 GREEN **020STAMZVW** **020STAMZVK** **020SQTMZVK**  
 YELLOW **020STAMZGW** **020STAMZGK** **020SQTMZGK**  
 BLUE **020STAMZBLW** **020STAMZBLK** **020SQTMZBLK**



See the diagram combination on page 28

Complete with



page 22



020



2 POSITIONS



CAM

A



B



C



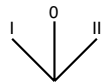
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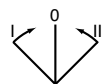
C



3 POSITIONS



O



O



GUARD TYPE

METAL

RESIN

RESIN



COLOUR	gr. 38	26	27
BLACK	020STALANW	▲ 020STALANK	020SQTLANK
RED	020STALARW	▲ 020STALARK	020SQTLARK
GREEN	020STALAVW	▲ 020STALAVK	020SQT LAVK
YELLOW	020STALAGW	▲ 020STALAGK	020SQTLAGK
BLUE	020STALABLW	▲ 020STALABLK	020SQTLABLK

BLACK	020STALBNW	020STALBNK	020SQT LBNK
RED	020STALBRW	020STALBRK	020SQT LBRK
GREEN	020STALBVW	020STALBVK	020SQT LBVK
YELLOW	020STALBGW	020STALBGK	020SQT LBGK
BLUE	020STALBBLW	020STALBBLK	020SQT LBLK

BLACK	020STALCNW	020STALCNK	020SQT LCNK
RED	020STALCRW	020STALCRK	020SQT LCRK
GREEN	020STALCVW	020STALCVK	020SQT LCVK
YELLOW	020STALCGW	020STALCGK	020SQT LCGK
BLUE	020STALCBLW	020STALCBLK	020SQT LBLK

BLACK	020STALBNWD	020STALBNKD	020SQT LBNKD
RED	020STALBRWD	020STALBRKD	020SQT LBRKD
GREEN	020STALBVWD	020STALBVKD	020SQT LBVKD
YELLOW	020STALBGWD	020STALBGKD	020SQT LBGKD
BLUE	020STALBBLWD	020STALBBLKD	020SQT LBLKD

BLACK	020STALCNWS	020STALCNKS	020SQT LCNKS
RED	020STALCRWS	020STALCRKS	020SQT LCRKS
GREEN	020STALCVWS	020STALCVKS	020SQT LCVKS
YELLOW	020STALCGWS	020STALCGKS	020SQT LCGKS
BLUE	020STALCBLWS	020STALCBLKS	020SQT LBLKS

COLOUR	gr. 38	26	27
BLACK	020STALONW	▲ 020STALONK	020SQT LONK
RED	020STALORW	▲ 020STALORK	020SQT LORK
GREEN	020STALOVW	▲ 020STALOVK	020SQT LOVK
YELLOW	020STALOGW	▲ 020STALOGK	020SQT LOGK
BLUE	020STALOBLW	▲ 020STALOBLK	020SQT LOBLK

BLACK	020STALONWC	▲ 020STALONKC	020SQT LONKC
RED	020STALORWC	▲ 020STALORKC	020SQT LORKC
GREEN	020STALOVWC	▲ 020STALOVKC	020SQT LOVKC
YELLOW	020STALOGWC	▲ 020STALOGKC	020SQT LOGKC
BLUE	020STALOBLWC	▲ 020STALOBLKC	020SQT LOBLKC



See the diagram combination on page 28  
▲ 2 pieces pack

Complete with



page 22



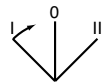
LEVER SELECTOR SWITCHES



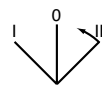
020



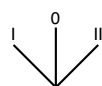
CONTINUE CAM



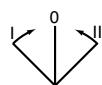
O



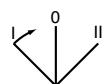
O



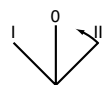
T



T

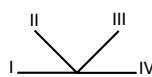


T



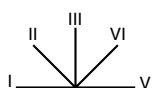
T

4 POSITIONS



Q

5 POSITIONS



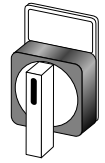
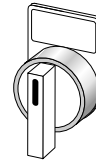
R

GUARD TYPE

METAL

RESIN

RESIN



COLOUR 38 26 27

BLACK	020STALONWS	020STALONKS	020SQTLOKNS
RED	020STALORWS	020STALORKS	020SQTLOKRS
GREEN	020STALOVWS	020STALOVKS	020SQTLOVKS
YELLOW	020STALOGWS	020STALOGKS	020SQTLOGKS
BLUE	020STALOBLWS	020STALOBLKS	020SQTLOBLKS

BLACK	020STALONWD	020STALONKD	020SQTLOKND
RED	020STALORWD	020STALORKD	020SQTLOKRD
GREEN	020STALOVWD	020STALOVKD	020SQTLOVKD
YELLOW	020STALOGWD	020STALOGKD	020SQTLOGKD
BLUE	020STALOBLWD	020STALOBLKD	020SQTLOBLKD

BLACK	020STALTNW	020STALTNK	020SQTLTNK
RED	020STALTRW	020STALTRK	020SQTLTRK
GREEN	020STALTVW	020STALTVK	020SQTLTVK
YELLOW	020STALTGW	020STALTGK	020SQTLTGK
BLUE	020STALTLW	020STALTLK	020SQTLTBK

BLACK	020STALTNWC	020STALTNKC	020SQTLTNKC
RED	020STALTRWC	020STALTRKC	020SQTLTRKC
GREEN	020STALTVWC	020STALTVKC	020SQTLTVKC
YELLOW	020STALTGWC	020STALTGKC	020SQTLTGKC
BLUE	020STALTLWC	020STALTLKC	020SQTLTBKC

BLACK	020STALTNWS	020STALTNKS	020SQTLTNKS
RED	020STALTRWS	020STALTRKS	020SQTLTRKS
GREEN	020STALTVWS	020STALTVKS	020SQTLTVKS
YELLOW	020STALTGWS	020STALTGKS	020SQTLTGKS
BLUE	020STALTLWS	020STALTLKS	020SQTLTBKS

BLACK	020STALTNWD	020STALTNKD	020SQTLTNKD
RED	020STALTRWD	020STALTRKD	020SQTLTRKD
GREEN	020STALTVWD	020STALTVKD	020SQTLTVKD
YELLOW	020STALTGWD	020STALTGKD	020SQTLTGKD
BLUE	020STALTLWD	020STALTLKD	020SQTLTBKD

COLOUR 38 26 27

BLACK	020STALQNW	020STALQNK	020SQTLOQNK
RED	020STALQRW	020STALQRK	020SQTLOQRK
GREEN	020STALQVW	020STALQVK	020SQTLOQVK
YELLOW	020STALQGW	020STALQGK	020SQTLOGK
BLUE	020STALQBLW	020STALQBLK	020SQTLOQBLK

COLOUR 38 26 27

BLACK	020STALRNW	020STALRNK	020SQTLRNK
RED	020STALRRW	020STALRRK	020SQTLRRK
GREEN	020STALRVW	020STALRVK	020SQTLRVK
YELLOW	020STALRGW	020STALRGK	020SQTLRGK
BLUE	020STALRBLW	020STALRBLK	020SQTLRBLK



See the diagram combination on page 28

Complete with



page 22



KEY SELECTOR SWITCHES<sup>(1)</sup>

020



2 POSITIONS CAM



A



B



C

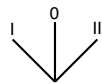


B



C

3 POSITIONS



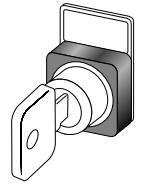
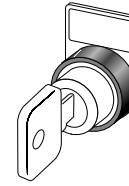
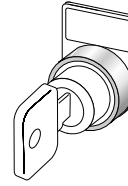
O

GUARD TYPE

METAL

RESIN

RESIN



KEY EXTRACTION  95                      82                      83

I	II	020STACAW	▲ 020STACAK	020SQTCAK
I		020STACAW2	▲ 020STACAK2	020SQTCAK2
	II	020STACAW4	▲ 020STACAK4	020SQTCAK4

0	II	020STACBW	020STACBK	020SQTGBK
0		020STACBW2	020STACBK2	020SQTGBK2
	II	020STACBW4	020STACBK4	020SQTGBK4

I	0	020STACCW	020STACCK	020SQTCKK
I		020STACCW2	020STACCK2	020SQTCKK2
	0	020STACCW4	020STACCK4	020SQTCKK4

0		020STACBWD	020STACBKD	020SQTGBKD
---	--	------------	------------	------------

0		020STACAWS	020STACCKS	020SQTCKKS
---	--	------------	------------	------------

KEY EXTRACTION  95                      82                      83

I	0	II	020STACOW	▲ 020STACOK	020SQTOKK
I			020STACOW2	▲ 020STACOK2	020SQTOKK2
	0		020STACOW3	020STACOK3	020SQTOKK3
		II	020STACOW4	020STACOK4	020SQTOKK4
I	0		020STACOW5	020STACOK5	020SQTOKK5
I		II	020STACOW6	020STACOK6	020SQTOKK6
	0	II	020STACOW7	020STACOK7	020SQTOKK7



See the diagram combination on page 28  
 1) Normal key with grey grip, code 3095; for non standard code, see table on page 27  
 ▲ 2 pieces pack

Complete with



page 22





KEY SELECTOR SWITCHES<sup>(1)</sup>

020



CONTINUE

CAM



O



O



O



T



T



T



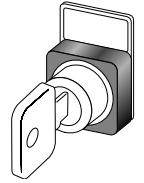
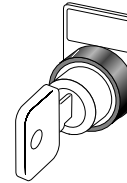
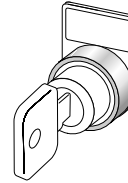
T

GUARD TYPE

METAL

RESIN

RESIN



KEY EXTRACTION  gr.

95

82

83

0

020STACOWC

▲ 020STACOKC

020SQTCKC

I 0

020STACOWD

020STACOKD

020SQTCKD

I 0

020STACOWD2

020STACOKD2

020SQTCKD2

0

020STACOWD3

020STACOKD3

0 II

020STACOWS

020STACOKS

020SQTCKS

0

020STACOWS3

020STACOKS3

020SQTCKS3

II

020STACOWS4

020STACOKS4

020SQTCKS4

I 0 II

020STACTW

020STACTK

020SQTCTK

I 0

020STACTW2

020STACTK2

020SQTCTK2

I 0

020STACTW3

020STACTK3

020SQTCTK3

I 0

020STACTW4

020STACTK4

020SQTCTK4

I 0

020STACTW5

020STACTK5

020SQTCTK5

I 0

020STACTW6

020STACTK6

020SQTCTK6

0 II

020STACTW7

020STACTK7

020SQTCTK7

0

020STACTWC

020STACTKC

020SQTCTKC

I 0

020STACTWD

020STACTKD

020SQTCTKD

I 0

020STACTWD2

020STACTKD2

020SQTCTKD2

0

020STACTWD3

020STACTKD3

020SQTCTKD3

0 II

020STACTWS

020STACTKS

020SQTCTKS

0

020STACTWS3

020STACTKS3

020SQTCTKS3

II

020STACTWS4

020STACTKS4

020SQTCTKS4



See the diagram combination on page 28  
 1) Normal key with grey grip, code 3095; for non standard code, see table on page 27  
 ▲ 2 pieces pack

Complete with



page 22

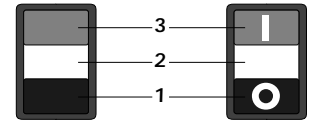


## DOUBLE PUSH-BUTTONS

020




### GUARD TYPE



WITH GUARD

NORMAL <sup>(1)</sup>

BUTTON 1	LENS 2	BUTTON 3	 26	26
RED	BLACK	GREEN	<b>020PDRV</b>	<b>020PDRVS</b>
RED	BLACK	BLACK	<b>020PDRN</b>	<b>020PDRNS</b>
BLACK	BLACK	WHITE		<b>020PDNBS</b>



PROTRUDING

1	2	3	26,5	26,5
RED	BLACK	GREEN	<b>020PDSRV</b>	<b>020PDSRVS</b>
RED	BLACK	BLACK	<b>020PDSRN</b>	<b>020PDSRNS</b>
BLACK	BLACK	WHITE		<b>020PDSNBS</b>



WITH GUARD

ILLUMINATED <sup>(2)(3)</sup>

1	2	3	26	26
RED	WHITE	GREEN	<b>020PDRVGB</b>	<b>020PDRVGBS</b>
RED	WHITE	BLACK	<b>020PDRNGB</b>	<b>020PDRNGBS</b>
BLACK	WHITE	WHITE		<b>020PDNBGBS</b>



PROTRUDING

1	2	3	26,5	26,5
RED	WHITE	GREEN	<b>020PDSRVGB</b>	<b>020PDSRVGBS</b>
RED	WHITE	BLACK	<b>020PDSRNGB</b>	<b>020PDSRNGBS</b>
BLACK	WHITE	WHITE		<b>020PDSNBGBS</b>



(2) For version with non standard lens, see accessories on page 26

(1) Complete with



page 22

(3) Complete with



page 21 +



page 22



CONTROL LEVERS

020

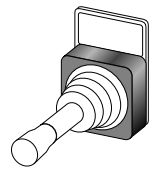
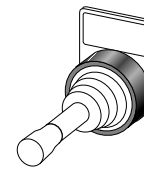
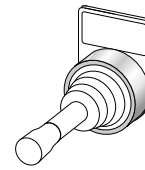


GUARD TYPE

METAL

RESIN

RESIN



2 POSITIONS

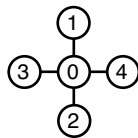


POSITIONS	 gr.	METAL	RESIN	RESIN
1-2 PERMANENT	56	020MTA2PW	020MTA2PK	020MQT2PK
1-2 TEMPORARY		020MTA2TW	020MTA2TK	020MQT2TK

SHORTED TYPE

POSITIONS	 gr.	METAL	RESIN	RESIN
1-2 PERMANENT	52	020MTAR2PW	020MTAR2PK	020MQTR2PK
1-2 TEMPORARY		020MTAR2TW	020MTAR2TK	020MQTR2TK

4 POSITIONS



POSITIONS	 gr.	METAL	RESIN	RESIN
1-2-3-4 PERMANENT	56	020MTA4PW	020MTA4PK	020MQT4PK
1-2-3-4 TEMPORARY		020MTA4TW	020MTA4TK	020MQT4TK

SHORTED TYPE

POSITIONS	 gr.	METAL	RESIN	RESIN
1-2-3-4 PERMANENT	52	020MTAR4PW	020MTAR4PK	020MQTR4PK
1-2-3-4 TEMPORARY		020MTAR4TW	020MTAR4TK	020MQTR4TK



RESET PUSH-BUTTONS



COLOUR	 gr.	METAL	RESIN
RED	31	020RTAIR	020RQTIR
BLUE	33	020RTAIBL	020RQTIBL





ILLUMINATED PUSH-BUTTONS <sup>(1)(2)</sup>



020



WITH GUARD



WITHOUT GUARD



WITH SHIELDED GUARD



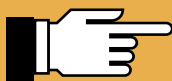
WITH PULSE MUSHROOM



WITH GUARD RUBBER CAP

GUARD TYPE

	METAL	RESIN	RESIN	RESIN
COLOUR	33	21	23	22
RED	020PTAILRW	▲ 020PTAILRK	020PQAILRK	020PQTILRK
GREEN	020PTAILVW	▲ 020PTAILVK	020PQAILVK	020PQTILVK
YELLOW	020PTAILGW	▲ 020PTAILGK	020PQAILGK	020PQTILGK
BLUE	020PTAILBLW	▲ 020PTAILBLK	020PQAILBLK	020PQTILBLK
WHITE	020PTAILBW	▲ 020PTAILBK	020PQAILBK	020PQTILBK
COLORLESS	020PTAILIW	▲ 020PTAILIK	020PQAILIK	020PQTILIK
ORANGE	020PTAILAW	▲ 020PTAILAK	020PQAILAK	020PQTILAK
COLOUR	35	22	25	23
RED	020PTASLRW	▲ 020PTASLRK	020PQASLRK	020PQTSLRK
GREEN	020PTASLVW	▲ 020PTASLVK	020PQASLVK	020PQTSLVK
YELLOW	020PTASLGW	▲ 020PTASLGK	020PQASLGK	020PQTSLGK
BLUE	020PTASLBLW	▲ 020PTASLBLK	020PQASLBLK	020PQTSLBLK
WHITE	020PTASLBW	▲ 020PTASLBK	020PQASLBK	020PQTSLBK
COLORLESS	020PTASLIW	▲ 020PTASLIK	020PQASLIK	020PQTSLIK
ORANGE	020PTASLAW	▲ 020PTASLAK	020PQASLAK	020PQTSLAK
COLOUR	29	23		
RED	020PTSSLRW	▲ 020PTSSLRK		
GREEN	020PTSSLVW	▲ 020PTSSLVK		
YELLOW	020PTSSLGW	▲ 020PTSSLGK		
BLUE	020PTSSLBLW	▲ 020PTSSLBLK		
WHITE	020PTSSLBW	▲ 020PTSSLBK		
COLORLESS	020PTSSLIW	▲ 020PTSSLIK		
ORANGE	020PTSSLAW	▲ 020PTSSLAK		
COLOUR	36	24		
RED	020PTAFLRW	020PTAFLRK		
GREEN	020PTAFLVW	020PTAFLVK		
YELLOW	020PTAFLGW	020PTAFLGK		
COLOUR	23	WITH GUARD	WITHOUT GUARD	
RED		020PTCGLR	020PTCSGLR	
GREEN		020PTCGLV	020PTCSGLV	
YELLOW		020PTCGLG	020PTCSGLG	
BLUE		020PTCGLBL	020PTCSGLBL	
WHITE		020PTCGLB	020PTCSGLB	
COLORLESS		020PTCGLI	020PTCSGLI	
ORANGE		020PTCGLA	020PTCSGLA	



(1) To order the jog system model, write "P" before the code's first letter.

For example: normal buttons: 020PTAILVK;  
jog buttons: 020PPTAILVK.

(2) For symbols see page 25

▲ 2 pieces pack

Complete with



page 21 +



page 22



KNOB ILLUMINATED SELECTOR SWITCHES

020

GUARD TYPE

METAL

RESIN

RESIN



2 POSITIONS

CAM

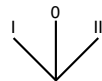


A

COLOUR	gr. 38	26	27
RED	020STAMLARW	▲ 020STAMLARK	020SQTMLARK
GREEN	020STAMLAVW	▲ 020STAMLAVK	020SQTMLAVK
YELLOW	020STAMLAGW	▲ 020STAMLAGK	020SQTMLAGK
BLUE	020STAMLABLW	▲ 020STAMLABLK	020SQTMLABLK
WHITE	020STAMLABW	▲ 020STAMLABK	020SQTMLABK
COLORLESS	020STAMLAIW	▲ 020STAMLAIK	020SQTMLAIK
ORANGE	020STAMLAAW	▲ 020STAMLAAK	020SQTMLAAK

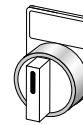


3 POSITIONS

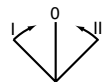


O

RED	020STAMLARWD	020STAMLARKD	020SQTMLARKD
GREEN	020STAMLAVWD	020STAMLAVKD	020SQTMLAVKD
YELLOW	020STAMLAGWD	020STAMLAGKD	020SQTMLAGKD
BLUE	020STAMLABLWD	020STAMLABLKD	020SQTMLABLKD
WHITE	020STAMLABWD	020STAMLABKD	020SQTMLABKD
COLORLESS	020STAMLAIWD	020STAMLAIKD	020SQTMLAIKD
ORANGE	020STAMLAAWD	020STAMLAAKD	020SQTMLAAKD

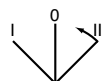


COLOUR	gr. 38	26	27
RED	020STAMLORW	▲ 020STAMLORK	020SQTMLORK
GREEN	020STAMLOVW	▲ 020STAMLOVK	020SQTMLOVK
YELLOW	020STAMLOGW	▲ 020STAMLOGK	020SQTMLOGK
BLUE	020STAMLOBLW	▲ 020STAMLOBLK	020SQTMLOBLK
WHITE	020STAMLOBW	▲ 020STAMLOBK	020SQTMLOBK
COLORLESS	020STAMLOIW	▲ 020STAMLOIK	020SQTMLOIK
ORANGE	020STAMLOAW	▲ 020STAMLOAK	020SQTMLOAK



O

RED	020STAMLORWC	020STAMLORKC	020SQTMLORKC
GREEN	020STAMLOVWC	020STAMLOVKC	020SQTMLOVKC
YELLOW	020STAMLOGWC	020STAMLOGKC	020SQTMLOGKC
BLUE	020STAMLOBLWC	020STAMLOBLKC	020SQTMLOBLKC
WHITE	020STAMLOBWC	020STAMLOBKC	020SQTMLOBKC
COLORLESS	020STAMLOIWC	020STAMLOIKC	020SQTMLOIKC
ORANGE	020STAMLOAWC	020STAMLOAKC	020SQTMLOAKC



O

RED	020STAMLORWD	020STAMLORKD	020SQTMLORKD
GREEN	020STAMLOVWD	020STAMLOVKD	020SQTMLOVKD
YELLOW	020STAMLOGWD	020STAMLOGKD	020SQTMLOGKD
BLUE	020STAMLOBLWD	020STAMLOBLKD	020SQTMLOBLKD
WHITE	020STAMLOBWD	020STAMLOBKD	020SQTMLOBKD
COLORLESS	020STAMLOIWD	020STAMLOIKD	020SQTMLOIKD
ORANGE	020STAMLOAWD	020STAMLOAKD	020SQTMLOAKD



See the diagram combination on page 28  
▲ 2 pieces pack

Complete with



page 21 +



page 22

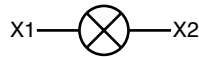


INDICATOR LIGHTS

020



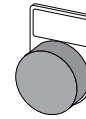
COMPLETE INDICATOR LIGHT<sup>(1)</sup>  
 Direct power supply - IP 67  
 BA9S 380V. 3W max  
 excluded



LENS TYPE

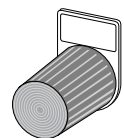
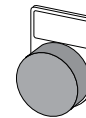
LOW

HIGH



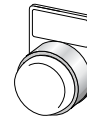
COLOUR	18	22
RED	■ 020LMR	▲ 020LMAR
GREEN	■ 020LMV	▲ 020LMAV
YELLOW	■ 020LMG	▲ 020LMAG
BLUE	■ 020LBL	▲ 020LMABL
WHITE	■ 020LMB	▲ 020LMAB
COLORLESS	■ 020LMI	▲ 020LMAI
ORANGE	■ 020LMA	▲ 020LMAA

UNIT WITH ILLUMINATED LENS<sup>(2)</sup>



COLOUR	9 gr.	13
RED	■ 020ULR	▲ 020ULAR
GREEN	■ 020ULV	▲ 020ULAV
YELLOW	■ 020ULG	▲ 020ULAG
BLUE	■ 020ULBL	▲ 020ULABL
WHITE	■ 020ULB	▲ 020ULAB
COLORLESS	■ 020ULI	▲ 020ULAI
ORANGE	■ 020ULA	▲ 020ULAA

UNIT WITH PROTECTED LENS



CROWNED LENS

COLOUR	30 gr.	21	23
RED	■ 020LTBBRW	▲ 020LTBBRK	020LQBBrk
GREEN	■ 020LTBBVW	▲ 020LTBBVK	020LQBbvk
YELLOW	■ 020LTBBGW	▲ 020LTBBGK	020LQBbGk
BLUE	■ 020LTBBBLW	▲ 020LTBBBLK	020LQBbBlk
WHITE	■ 020LTBBBW	▲ 020LTBBBK	020LQBbBk
COLORLESS	■ 020LTBBIW	▲ 020LTBBIK	020LQBbIk
ORANGE	■ 020LTBBAW	▲ 020LTBBAK	020LQBbAk

FLAT LENS<sup>(3)</sup>



COLOUR	29 gr.	20	22
RED	■ 020LTBIRW	▲ 020LTBIRK	020LQBIRk
GREEN	■ 020LTBIVW	▲ 020LTBIVK	020LQBIVk
YELLOW	■ 020LTBIGW	▲ 020LTBIGK	020LQBIGk
BLUE	■ 020LTBIBLW	▲ 020LTBIBLK	020LQBIBLk
WHITE	■ 020LTBIBW	▲ 020LTBIBK	020LQBIBk
COLORLESS	■ 020LTBIW	▲ 020LTBIK	020LQBIIk
ORANGE	■ 020LTBIAW	▲ 020LTBIAK	020LQBIAk



(1) Loose parts see accessory section. 020LM + 020G/020GA page 26

(2) Loose parts see accessory section. 020UL + 020G/020GA page 26

(3) Tamperproof

▲ 2 pieces pack

■ 5 pieces pack



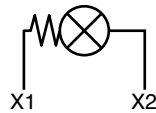


16

CODE

DIRECT SUPPLY  $\sim$  ---  
IEC : BA9S 380V. max 2W EXCLUDED\*  
UL - CSA : BA9S 250V. max 2W EXCLUDED

● 020PD9



34

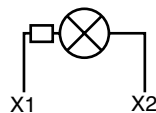
CODE

RESISTOR FOR FILAMENT BULB  $\sim$  ---  
110÷125V. BA9S 60V. 1,2W INCLUDED\*  
110÷125V. BA9S 48V. 2W<sup>(1)</sup> INCLUDED  
220÷240V. BA9S 60V. 1,2W INCLUDED

020PR19  
020PR1E9  
020PR29

RESISTOR FOR MULTILED BULB 48V  $\sim$  ---<sup>(2)</sup>  
110÷125V. BA9SL 48V. 16mA EXCLUDED  
220÷240V. BA9SL 48V. 16mA EXCLUDED

020PR19L  
020PR29L

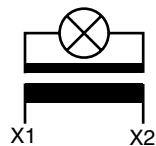


32

CODE

FLASHING WITH DIRECT SUPPLY  
6-24 V max 125mA excluded lamp

020PL9

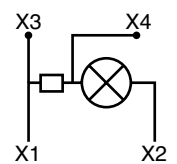


64

CODE

TRANSFORMER 50-60Hz  
110÷120V. BA9S 6V. 0,6W INCLUDED  
220÷240V. BA9S 6V. 0,6W INCLUDED  
380V. BA9S 6V. 0,6W INCLUDED  
415÷440V. BA9S 6V. 0,6W INCLUDED

020PT19  
020PT29  
020PT39  
020PT49



32

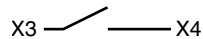
CODE

MULTIFUNCTION DIRECT SUPPLY<sup>(3)</sup>  
6V. 0,6W ÷ 24V. 3W EXCLUDED

020PDL9



FIXED LIGHT



FLASHING LIGHT

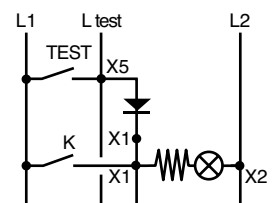
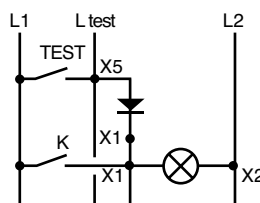


10

CODE

BULB TEST ELEMENT<sup>(4)</sup>

▲ 020ET



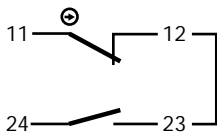
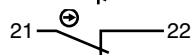
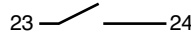
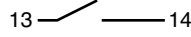
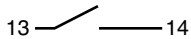
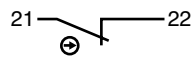
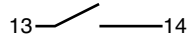
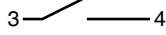
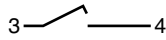
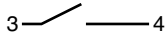
- (1) Version in conformity with ENEL Standard
  - (2) Match multiled 48V bulb of required colour (page 27).
  - (3) Connect to remote contact for fixed or flashing light.
  - (4) For unmatched filament bulb check.
- \* Certified values IMQ

- ▲ 2 pieces pack
- 10 pieces pack




## CONTACT ELEMENTS

020



 8	CODE
CONNECTION FLANGE	● 020G

 10	CODE
1 NO OPEN	● 020E10
1 NO ADVANCE CLOSING	020E10A

 10	CODE
1 NC CLOSED	● 020E01
1 NC DELAYED OPENING	020E01R

 19	CODE
1 NO OPEN	■ 020GE10

 19	CODE
1 NC CLOSED	■ 020GE01

 29	CODE
1 NO OPEN	020GE11
1 NC CLOSED	

 29	CODE
1 NO OPEN	020GE20
1 NO OPEN	

 29	CODE
1 NC CLOSED	020GE02
1 NC CLOSED	

 30	CODE
	020GE11S



■ 5 pieces pack  
● 10 pieces pack





### COMPLIANCE WITH STANDARDS

EC 947-5-1. EN 60947 - 5 - 1. VDE 0660 PART 200. ASE 0119. ASE 1003. BS 4794. CSA C22-2 N° 14. UL 508. NEMA. CENELEC EN 50007

### HOMOLOGATION

IMQ. RINA. CSA. UL

### CLIMATIC PROTECTION

In normal functioning, T.C. all climates.

### TEMPERATURE LIMITS

Functioning  $\geq -25^{\circ}\text{C} \div \leq +65^{\circ}\text{C}$  - Stocking  $\geq -35^{\circ}\text{C} \div \leq +70^{\circ}\text{C}$

### FUNCTIONING POSITION

All positions  $\leftarrow \rightarrow \uparrow \downarrow$

### KNOCK PROTECTION

11 ms duration with 50g, form 1/2 sinusoid in compliance with IEC 68 - 2 -27

### VIBRATION RESISTANCE

16 g.  $40 \geq \div 500 \leq$  Hz in conformity with IEC 68 - 2 - 64

### ALTITUDE OF USE

$\leq 3,000$  mt.

### PROTECTION LEVEL

Double switch IP 40 - normal, illuminated, lamp, selector switches IP 65 - rubber cap buttons IP 66.

### ELECTRICAL PROTECTION

Class II double insulation in conformity with IEC 536.

### TORQUES

Operator fixing ring  $3 \div 3,5$  Nm - Terminal screws  $1 \div 1,2$  Nm.

### ACTIVATING POWER

Switch with contact NO kg. 0,85 - Additional contacts: NO kg. 0,26 - NC kg. 0.19

### MECHANICAL DURATION

Normal, illuminated, mushroom pulse, push-buttons - 2 millions operations Selectors, control levers, jog 500.000 operations. Latch mushroom head: 300.000 operations

### POLLUTION

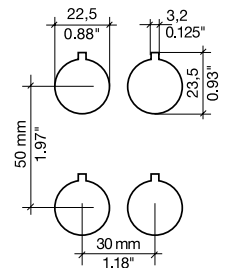
Class 3 according to DIN VDE 0110\*

### OPERATION FREQUENCY

1operation cycles/hour 1,000 cycles

### ASSEMBLY DIMENSIONS(1)

Panel with thickness  $1 \div 6$  mm - Holes in conformity with CEI EN 60947 - 5 - 1



### RATED INSULATION VOLTAGE

660 V CA/CC\*

### INSULATION CLASS

C Group in conformity with VDE 0110

### SHORT CIRCUIT PROTECTION

Fuses DIAZED 10A operating class gL/gG shape D II second IEC 269-3-1\*

### RATED THERMIC CURRENT (ITH)

10A open space  $25^{\circ}\text{C}^*$  - 6A closed space  $60^{\circ}\text{C}$ .

### RATED POWER OUTPUT

In conformity with IEC 947-5-1

cat AC15

cat DC 13

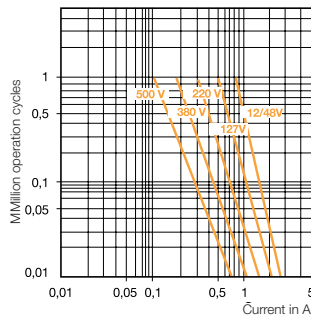
Tension Ue	V	24*	48	60	110*	220	380	400*	500	600	Tension Ue	V	24*	48	60*	110	220
Current Ie	A	10	8	6	6	3	2	1,5	1,5	1,2	Current Ie	A	2,5	1,4	1	0,6	0,3

### USE CLASS

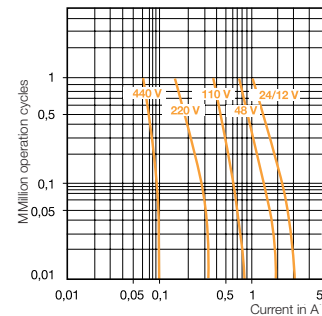
In conformity with CSA - UL; A600 - R300

### ELECTRICAL DURATION

Alternated current  $50 \div 60$ Hz cat AC15



Direct Current cat DC 13



### CONTACT RESISTANCE

$25\text{m}\Omega$  In conformity with IEC 255.7 category 3

### CLAMP PROTECTION

IP2X in conformity with IEC 529

### CONNECTION(2)

Screw type terminal with retained clamp. Prepared (open). Combined head screw DIN 7962 - Z2 Closing capacity:  $\geq 1 \times 0,5 \text{ mm}^2, \leq 2 \times 2,5 \text{ mm}^2$  - Faston tongue 6,5 mm - Solder foot  $0,8 \times 0,8$  mm In conformity with DIN EN 50013 - 1<sup>ST</sup> number, assembling order of connection flange.

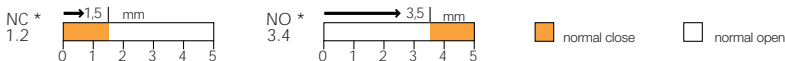
### CLAMP IDENTIFICATION

2<sup>ND</sup> number, element contact function, 1 - 2 NC, 3 - 4 NO

### CONTACT FUNCTIONING

Slow action, sliding autocleaning, positive action, NC  $\rightarrow$

### CONTACT STROKE



### POSITIVE TRIPPING FORCE

15N normal push button. 40N mushroom push button\*

### OPERATION SPEED

max  $20 \text{ mm/s}^*$  min  $10 \text{ mm/s}^*$

### LAMP HOLDER

BA9s connection; incandescence, neon, multiled.

### LAMP DURATION(3)

Recommended power: indicator light 2.6W - pushbuttons, selector 1.2W.

Incandescence  $\leq 1,000$  h - Neon  $\leq 3,000$  h - Multiled  $\geq 50,000$  h



(1) For mushroom, double pushbuttons, control levers see chapter DIMENSIONS on page 30.

(2) See ACCESSORIES on page 30

(3) In rated conditions

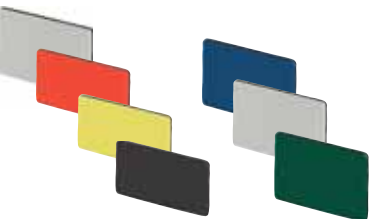
\* Certified values IMQ



INDICATIONS LABELS



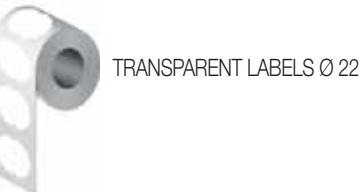
020



ALUMINIUM ADHESIVE LABELS FOR THERMAL TRANSFER



TRANSPARENT COVER



TRANSPARENT LABELS Ø 22

EMERGENCY INDICATION LABELS<sup>(1)</sup>

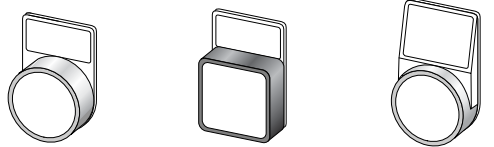
2

5,3

MESSAGE	Ø 60	Ø 90
WITHOUT WORDING	<b>020D0</b>	<b>020DD0</b>
ARRESTO EMERGENZA	<b>020D21</b>	<b>020DD21</b>
EMERGENCY STOP	<b>020D23</b>	<b>020DD23</b>
NOT-AUS	<b>020D39</b>	<b>020DD39</b>
ARRET D'URGENCE	<b>020D36</b>	<b>020DD36</b>
PARO EMERGENCIA	<b>020D37</b>	<b>020DD37</b>
EMERGENCIA PARAGEM	<b>020D95</b>	<b>020DD95</b>

1,8

COLOUR	INCISION	50 x 50
ALLUMINIUM	BLACK	<b>02000T50</b>
YELLOW	BLACK	<b>02000T50G</b>



SUPPORT FOR LABELS

LABELS	13 x 27	13 x 27	18 x 27
COLOUR	2	2	2,5
BLACK	● <b>020ST</b>	● <b>020SQ</b>	● <b>020ST18</b>

BLANK LABELS<sup>(2)</sup>

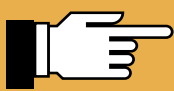
0,2

COLOUR	INCISION	13 x 27	18 x 27
ALUMINIUM	BLACK	● <b>02000T</b>	● <b>02000T18</b>
ALUMINIUM	BLACK	● <b>02000TP<sup>(3)</sup></b>	● <b>02000TP18<sup>(3)</sup></b>
WHITE	BLACK	● <b>02000TB</b>	● <b>02000TB18</b>
YELLOW	BLACK	● <b>02000TG</b>	● <b>02000TG18</b>
BLACK	WHITE	● <b>02000TN</b>	● <b>02000TN18</b>
RED	WHITE	● <b>02000TR</b>	● <b>02000TR18</b>
GREEN	WHITE	● <b>02000TV</b>	● <b>02000TV18</b>
BLUE	WHITE	● <b>02000TBL</b>	● <b>02000TBL18</b>

	LABEL		CODE
300	13x27	Roll of 1500 pcs.	<b>020RE</b>
300	18x27	Roll of 1500 pcs.	<b>020RE18</b>
300	27x27	Roll of 1500 pcs.	<b>020RE27</b>
380	60x15	Roll of 1500 pcs.	<b>020RE615</b>
430	60x40	Roll of 700 pcs.	<b>020RE640</b>
450	60x60	Roll of 500 pcs.	<b>020RE660</b>
450	60x60 hole Ø 22	Roll of 500 pcs.	<b>020RE660D</b>
580	60x80	Roll of 400 pcs.	<b>020RE68</b>
500	60x110	Roll of 300 pcs.	<b>020RE6110</b>

	TRANSPARENT COVER	CODE
2	13x27	● <b>020PE</b>
2	18x27	● <b>020PE18</b>
2	27x27	● <b>020PE27</b>

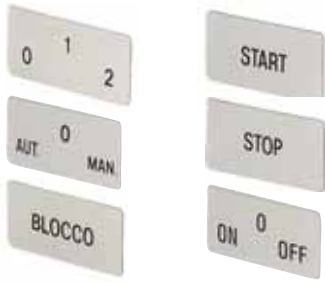
	TRANSPARENT LABEL	CODE
300	Ø 22	Roll of 1.500 pcs. <b>020REL</b>



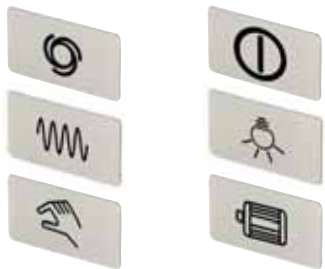
(1) In conformity with VDE 0113  
 (2) Mechanical incision.  
 (3) For customized messages please contact the sales office.  
 ● 10 pieces pack.



WORDING



WITH SYMBOLS



WORDING LABELS 13 x 27<sup>(1)</sup> ●

0,2

CODE	WORDING	CODE	WORDING	CODE	WORDING
02001T	MARCIA	02023T	STOP	02092T	ON 0 OFF
02002T	ARRESTO	02024T	ARRESTO-MARCIA	02093T	MAN 0 AUTO
02003T	AVANTI	02025T	INSER. DISINSER.	02094T	DANGER
02004T	INDIETRO	02026T	START	02095T	ONDER SPANNING
02005T	SALITA	02027T	ABBASSA	02096T	SOUS TENSION
02006T	DISCESA	02028T	ALZA	02097T	HAND 0 AUTO
02007T	DESTRA	02029T	ALT	02098T	ARRET
02008T	SINISTRA	02030T	APRE CHIUDE	02099T	MARCHE
02009T	APRE	02031T	AUT. SEMIAUT.	020100T	MARCHA
02010T	CHIUDE	02032T	AUT 0 MA	020101T	ARRANQUE
02011T	LENTO	02033T	0 1	020102T	SUBIR
02012T	VELOCE	02034T	TENSIONE IN LINEA	020103T	BAJAR
02013T	AVVIAMENTO	02035T	BLOCCO	020104T	PARADA
02014T	ARRESTO CICLO	02036T	ARRET D'URGENCE	020105T	NIVEL BAJO
02016T	CICLO AUTOMATICO	02037T	PARO EMERGENCIA	020106T	TERM. DISP.
02017T	RIPRISTINO CICLO	02039T	NOT AUS	020107T	NO STOP
02018T	INSERITO	02040T	0 1 2	020108T	MANUAL - AUTO
02019T	CORRENTE INSERITA	02041T	1 0 2	020109T	PARADA - AUTO
02020T	DISINSERITO	02055T	RESET	020110T	PARADA - MARCHA
02021T	EMERGENZA	02056T	TEST		
02022T	LAVORO	02091T	NOOD UIT		

STANDARD*	CODE	SYMBOLS <sup>(2)</sup>	STANDARD*	CODE	SYMBOLS <sup>(2)</sup>	STANDARD*	CODE	SYMBOLS <sup>(2)</sup>	STANDARD*	CODE	SYMBOLS <sup>(2)</sup>
	IEC 5022a	02047 T S 47		ISO 0018	02062 T		ISO 0353	02074 T		02089 T	
	IEC 5022a	02046 T S 46		ISO 0019	02063 T		ISO 0910	02075 T		02090 T	
	IEC 5023a	02049 T		ISO 0020	02064 T		IEC 5014a	02076 T		IEC 5177a	020135 T
	ISO 0001	02050 T		ISO 0021	02065 T		UNI 3.2.1	02077 T		ISO 0058	020136 T
	ISO 0002	02051 T		ISO 0026	02066 T		IEC 5012a	02078 T		IEC 5308a	020137 T
	ISO 0004	02052 T		ISO 0096	02048 T S 48		ISO 0028	02079 T		IEC 5178a	020138 T S 138
	ISO 0004	02053 T		IEC 5007a	02043 T S 43		ISO 0029	02080 T		IEC 5111a	020139 T S 140
	ISO 0259	02054 T		IEC 5008a	02042 T S 42		ISO 0030	02081 T		IEC 5104a	020140 T
	ISO 0266	02057 T		IEC 5010a	02067 T S 67		ISO 0391	02082 T		IEC 5009a	020141 T
	IEC 5005a	02044 T		IEC 5011a	02068 T S 68		ISO 0032	02083 T			020142 T
	IEC 5006a	02045 T		ISO 0022	02069 T		ISO 0033	02084 T		ISO 0915	020143 T
	ISO 0011	02058 T		ISO 0023	02070 T			02085 T		IEC 5638	020144 T S 144
	ISO 0134	02059 T		ISO 0314	02071 T			02086 T		IEC 5276a IEC 5277a	020145 T
	UNI 4.3.7	02060 T		IEC 5036a	02072 T			02087 T			020146 T
	IEC 5022a	02061 T		ISO 0434	02073 T			02088 T		ISO 0435	020147 T
							ISO 0085	02038 T		IEC 5110a	020148 T

\* UNI ISO7000 - CEI IEC 417 - UNI 4598




(1) Aluminium colour, black message  
 (2) Let follow to the code of the desired item. Es.: 020PTAINK = 020PTAINKS47  
 ● 10 pieces pack.



## ACCESSORIES



### PLUGS<sup>(1)</sup>

COLOUR 	5	5
GREY RAL 7035	● 020TTP	● 020QTP
BLACK	● 020TTPN	● 020QTPN
TRANSPARENT	● 020TTPT	

### SEPARATE INDICATOR LIGHTS PARTS

#### INTEGRAL LENS

COLOUR 	3	7
RED	■ 020GR	▲ 020GAR
GREEN	■ 020GV	▲ 020GAV
YELLOW	■ 020GG	▲ 020GAG
BLUE	■ 020GBL	▲ 020GABL
WHITE	■ 020GB	▲ 020GAB
COLORLESS	■ 020GI	▲ 020GAI
ORANGE	■ 020GA	▲ 020GAA


#### ILLUMINATED UNIT

	6
	■ 020UL

#### INDICATOR LIGHT UNIT direct supply

	14
	■ 020LM

### SELECTOR KNOBS AND LEVERS

COLOUR 	3	4	3
	NORMAL	NORMAL	ILLUMINATED
BLACK	020MN	020LN	
RED	020MR	020LR	020MLR
GREEN	020MV	020LV	020MLV
YELLOW	020MG	020LG	020MLG
BLUE	020MBL	020LBL	020MLBL
WHITE	020MB		020MLB
COLORLESS	020MI		020MLI
ORANGE	020MA		020MLA


#### EMERGENCY PUSHBUTTON SHIELD

#### PROTECTION GUARD OPERATOR

	150		46
	020SPE		020GPE

against accidental operation which does not compromise the access to the actuator<sup>(3)</sup>

### DOUBLE PUSHBUTTON LENS


COLOUR 	1,2	NORMAL	ILLUMINATED
BLACK		020PDGN	
RED			020PDGR
GREEN			020PDGV
YELLOW			020PDGG
WHITE			020PDGB
COLORLESS			020PDGI

### FASTON CLAMPS

	0,2
	020TF

CONNECTION WITH CONTROL AND LAMP HOLDERS  
COMPATIBILITY WITH TWO 1 X 6.3/2 X 2.8 JACKS, INSULATED TYPE.

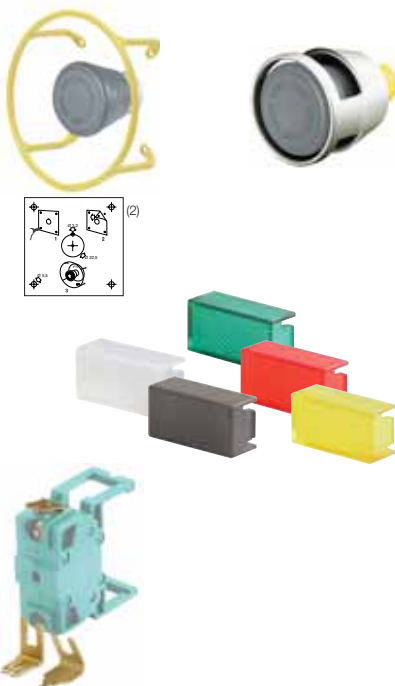
### SOLDER CLAMPS

	0,2
	020TS

020



### PROTECTION SYSTEM



(1) For non used holes  
(2) Removable drilling shape supplied  
(3) EN 418 point 4.1.13  
(4) DIN 43247

▲ 2 pieces pack  
■ 5 pieces pack  
● 10 pieces pack



### SELECTOR SWITCH KEYS



11

STANDARD GRIP

COLORED GRIP<sup>(1)</sup>

COLOUR	SUFFIX	CODING	CODE
GREY RAL 7001	95	3095	▲ 020C3095
	53	3353	▲ 020C3353
	01	9901	▲ 020C9901
	02	9902	▲ 020C9902
	03	9903	▲ 020C9903
	04	9904	▲ 020C9904
	05	9905	▲ 020C9905
	10	9910	▲ 020C9910
	16	9916	▲ 020C9916
	19	9919	▲ 020C9919
YELLOW	33	73033	▲ 020C73033
BLACK	34	73034	▲ 020C73034
RED	37	73037	▲ 020C73037
BLUE	38	73038	▲ 020C73038
ORANGE	40	73040	▲ 020C73040



### BA9S BULBS

FILAMENT<sup>(2)</sup> 1,3

		CODE	CODE	
6V 0,6W	● 010BA9S6V/0,6W	48V 1,2W	● 010BA9S48V/1,2W	
24V 1,2W	● 010BA9S24V/1,2W	60V 1,2W	● 010BA9S60V/1,2W	
24V 3W	● 010BA9S24V/3W	60V 3W	● 010BA9S60V/3W	
30V 1,2W	● 010BA9S30V/1,2W	130V 1,9W	● 010BA9S130V/1,9W	
30V 3W	● 010BA9S30V/3W	220V 2W	● 010BA9S220V/2W	



NEON 2,3

		RED/ORANGE	GREEN
65V 0,05W	010BA9SN65		
110V 0,1W	010BA9SN110		010BA9NV110
220V 0,3W	010BA9SN220		010BA9NV220
380V 0,5W	010BA9SN380		010BA9NV380



MONOLED<sup>(3)</sup> FIXED LIGHT 2

VOLT	RED	YELLOW	GREEN	BLUE	WHITE
6V AC-DC	010BA9SLR6	010BA9SLG6	010BA9SLV6	010BA9SLBL6	010BA9SLB6
12V AC-DC	010BA9SLR12	010BA9SLG12	010BA9SLV12	010BA9SLBL12	010BA9SLB12
24V AC-DC	010BA9SLR24	010BA9SLG24	010BA9SLV24	010BA9SLBL24	010BA9SLB24
48V AC-DC	010BA9SLR48	010BA9SLG48	010BA9SLV48	010BA9SLBL48	010BA9SLB48
110V AC-DC	010BA9SLR110	010BA9SLG110	010BA9SLV110	010BA9SLBL110	010BA9SLB110
220V AC	010BA9SLR220	010BA9SLG220	010BA9SLV220	010BA9SLBL220	010BA9SLB220

MONOLED<sup>(3)</sup> FLASHING LIGHT

VOLT	RED
24V AC-DC	010BA9SLLR24
110V AC-DC	010BA9SLLR110
220V AC	010BA9SLLR220

#### ULTRA-BRIGHT LED

VOLTAGES ± 15% NOT POLARIZED

AC-DC	6	12	24	48	110	AC 220
mA	30	20	14	7	5	16



OPERATOR LOCKING TOOL

		CODE
32	THERMOPLASTIC BODY WITH TOOL FOR BA9S	020CGN
100	STEEL TUBE, TOOL $\frac{1}{4}$	020CGA

OPERATOR LOCKING RING

		CODE
8	SPARE PART PACK 10 PIECES	020GF

RUBBER CAP

	WITH GUARD	WITHOUT GUARD
3,5	■ 020CGS	020CSGS

TRANSPARENT SILICON - USE AS SPARE PART ONLY FOR USE WITH PTCG. BUTTON ONLY (NOT WITH STANDARD RANGE)



- (1) Version in conformity with FIAT standard
- (2) 10 piece pack
- (3) Match bulb colour and unit colour

- ▲ 2 pieces pack
- 5 pieces pack
- 10 pieces pack



020

SELECTOR	CAM	DIAGRAM	FLANGED CONTACTS
	<b>A</b>		
	<b>A</b>		
	<b>B</b>		
	<b>C</b>		
	<b>O</b>		
	<b>O</b>		
	<b>O</b>		
	<b>E</b>		
	<b>T</b>		





SELECTOR	CAM	DIAGRAM	FLANGED CONTACTS
	<b>T</b>	  E01 E01 E10 E10	 020GE02 +020E10 +020E10
	<b>Q</b>	  E01 E01 E10 E10	 020GE02 +020E10 +020E10
	<b>U</b>	  E01 E10 E10	 020GE11 + 020E10
	<b>R</b>	  E01 E01 E10 E10	 020GE02 +020E10 +020E10
	<b>Z</b>	  E01 E01 E10 E10	 020GE02 +020E10 +020E10

CONTROL LEVER

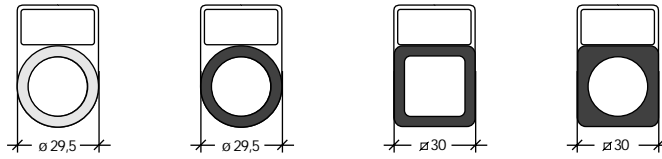
DIAGRAM

	  E10 E10	 020GE20
	  E01 E01 E10 E10	 020GE02 +020E10 +020E10

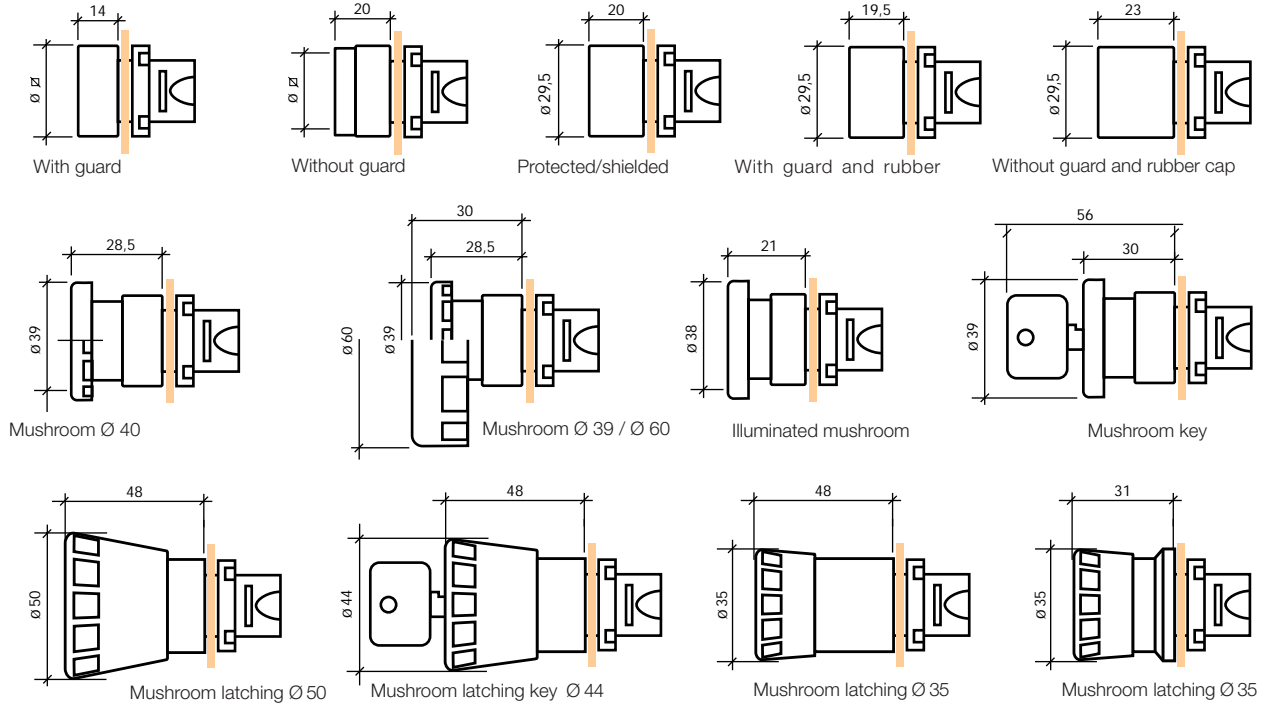




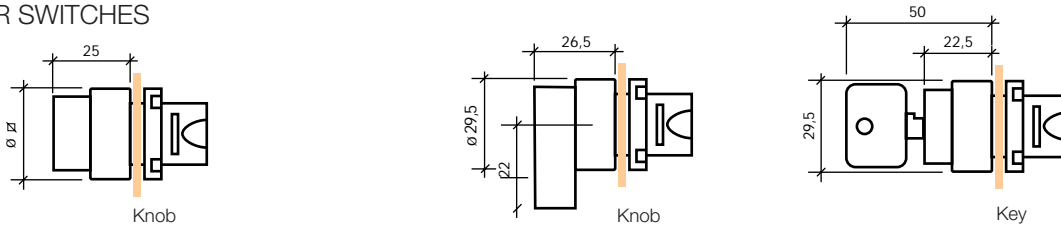
GUARD TYPE



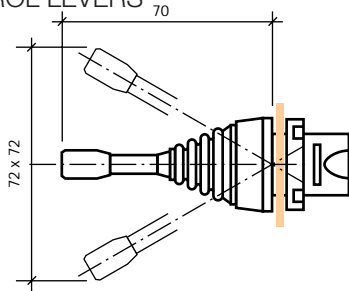
PUSH-BUTTONS, ILLUMINATED, ALTERNATE



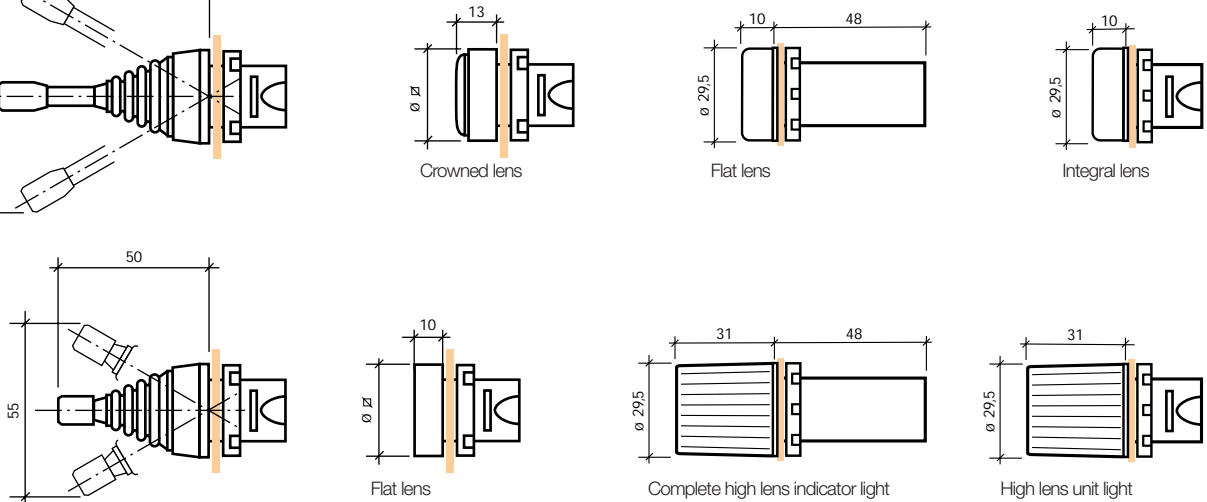
SELECTOR SWITCHES



CONTROL LEVERS



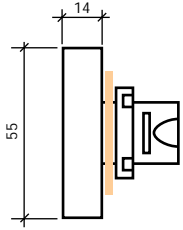
INDICATOR LIGHTS



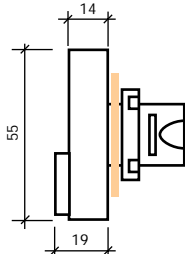




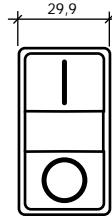
### DOUBLE PUSH-BUTTONS



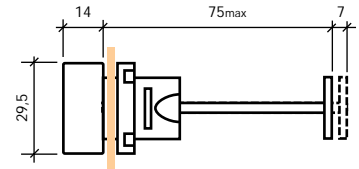
With guard



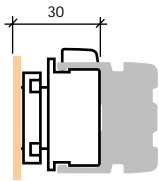
Protruding



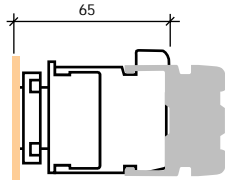
### RESET PUSH-BUTTON



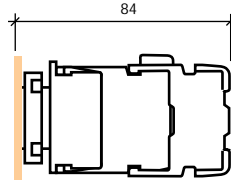
### LAMP HOLDERS



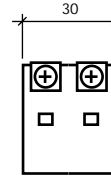
Direct supply



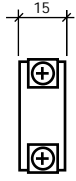
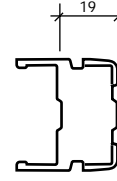
Supply, resistor, flashing transformer



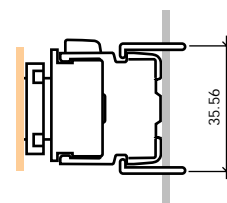
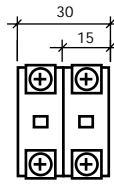
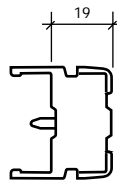
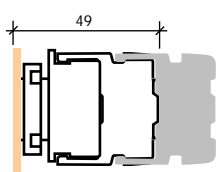
Multifunction



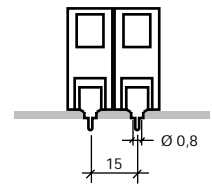
Test element



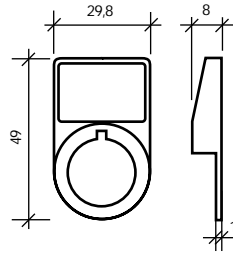
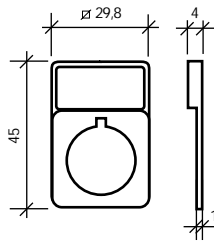
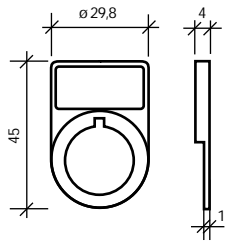
### CONTACT ELEMENTS



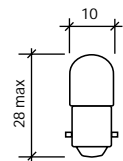
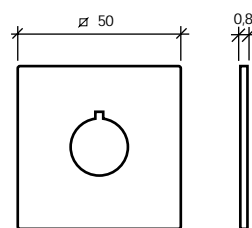
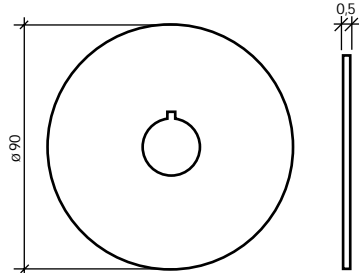
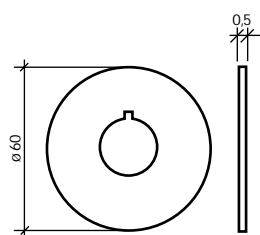
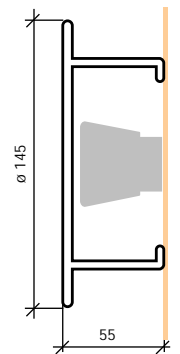
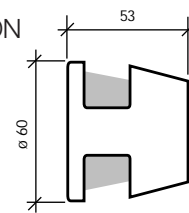
Contact element with solder clamp



### LABELS





### PROTECTION





020 STAMPANTE A TRASFERIMENTO TERMICO



 1.400	CODE
PRINTER	
 53	CODE
INK TAPE 91 m.	
010NR6374	

## TECHNICAL CHARACTERISTICS

## STANDARD FEATURES

Print method: direct thermal / thermal transfer  
Construction: ABS double walled casing  
OpenACCESS design  
Head up sensor  
Windows® drivers (95, 98, Me, NT v.4.0, 2000) - Windows printer utilities

## ELECTRICAL CHARACTERISTICS

Autoranging external power supply  
Input: 100-240VAC; 50-60Hz - Output: 20VDC; 2.5A

## OPERATING ENVIRONMENT

Operating temperature 5°C÷40°C - Umidity 10-90% non condensing

## CONNECTIVITY

Serial RS232 (DB9) 1,2-38,4K bits/second - Flow control hardware and software  
USB  
Parallel (centronics)

## MEMORY

Standard: 512KB Flash;

## GRAPHICS SPECIFICATIONS

Line and box drawing - PCX graphic storage

## RESOLUTION

203 dpi (8 dots/mm)

## FONT AND CHARACTER SETS

Standard fonts: 5 bitmapped expandible 8 x  
International characters sets supporting the following code pages:  
DOS 437/737/850/851/855/857/860/861/862/863/865/866/869  
WINDOWS 1250/1251/1252/1253/1254/1255/1265/1257

## PROGRAMMING

ASCII EPL2 programming language (Page mode)

## PRINTING ACCESSORIES

3M® high resistance alluminium labels roll (-30° +90°)  
Pre socket-punching adhesive PVC protection sheets  
Max roll size: 127 mm O.D. on a 25mm or 38 mm I.D. core  
Thickness (label and liner): 0,08mm to 0,18mm  
Max roll size: 33mm O.D. on a 12,7mm I.D. core  
Standard lengths: 74 m capacity provides 1:1 media roll ribbon ratios  
Ribbon set up: ribbon wound ink side out; ribbon is recommended to be at least as wide as media

## LABELS

## RIBBON

## SOFTWARE

Bar-one lite version freeware

## APPROVALS

UL-CUL 1950; FCC (Class B); VCCI (Class b); C\_TICK; EN 50082-1; EN 55022 (Class B)/CISPR 24; EN 55024/CISPR 24; EN 60950/IEC 950; EN 61000-3-2, 3-3

## OVERALL DIMENSIONS

width 200mm - length 248 mm - heigth 173mm





EXAMPLES OF LABELS APPLICATION



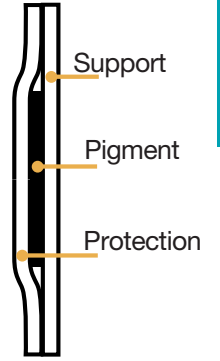
Label application



Application of the protection



Application to pannel



020

LABELS DIMENSIONS

