



OUR COMMITMENT MAKES THE DIFFERENCE ▶

**BACO**®

## ▶ E-STOPS

Baco offers the largest selection of E-STOP devices in the industry. Available in 30mm & 22mm switch sizes in plastic construction, these E-STOPS meet applicable ISO 13850 and IEC standards. Selection includes push-pull/turn to release, illuminated, or key-operated devices. A wide variety of E-STOP legends, guards, and locking attachments is also available.



**Mushroom head**  
ISO 13850  
illuminated



**IP 66 to IP 69K**  
IK 05



Head with  
anti-rotation tab



: Ø 22,3 mm cut-out

## ▶ EMERGENCY STOP ACTUATORS - ISO 13850:

According to IEC 60947-5-5, the emergency stop function can be provided by an ISO 13850 mushroom head combined with a "positive opening" NC contact block. The mechanism of our ISO 13850 mushroom heads is so designed that a "push" action of sufficient force to open the contact systematically triggers an irreversible locking of this opening. This generates an "emergency stop" signal which can be cancelled only by deliberate manual resetting of the mushroom head (pull and turn or unlocking by key). This function allows to generate an "emergency stop" signal for any equipment subject to directive 98/37CE (machinery safety) completed by the IEC 60204-1 standard. The ISO 13850 mushroom heads also comply with the safety requirements detailed in standard ISO 13850.

## ▶ ADVANTAGES

*We're full of innovative ideas from listening to your needs, and watching you work*

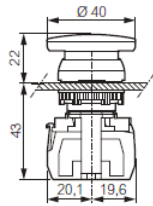
- On all heads, rotation is prevented by a tab which retracts when not required
- Insulating material ensures electrical safety
- Design and shape help avoid build-up of dirt and make the switch easy to clean
- ISO 13850 illuminated mushroom head with yellow collar for side-on visual indication
- Optimised ergonomic design
- Innovative functions: illuminated emergency stop mushroom head, etc
- Optimised dimensions: low-profile heads



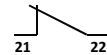
► Complete Units: Mushroom heads Ø 22

Ø40 MUSHROOM – SPRING RETURN Push Cat. No.

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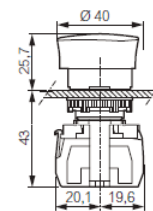
● NC



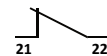
L21AD01C

Ø40 MUSHROOM – STAY PUT Push-Turn to reset Cat. No.

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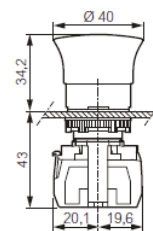
● NC



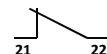
L22ED01D

Ø40 MUSHROOM – STAY PUT Push-Pull to reset Cat. No.

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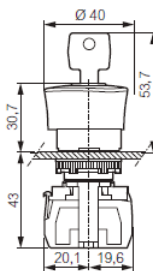
● NC



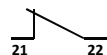
L22DD01A

Ø40 MUSHROOM – STAY PUT Key to reset Cat. No.

---



● NC



L22GM01E

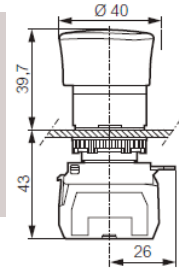


▶ ISO 13850 EMERGENCY STOP

Ø40 ISO13850 – STAY PUT

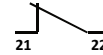
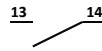
Push-Turn to reset

Cat. No.



Head position visible from the side with yellow collar  
Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850

● NO+NC

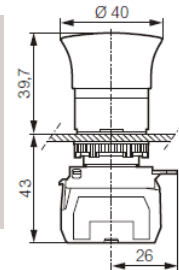


L22ER01D

Ø40 ISO13850 – STAY PUT

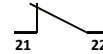
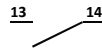
Push-Pull to reset

Cat. No.



Head position visible from the side with yellow collar  
Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850

● NO+NC

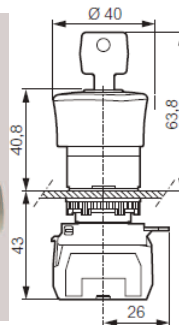
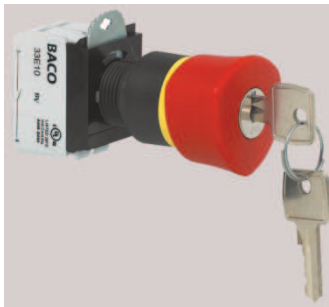


L22DR01B

Ø40 ISO13850 – STAY PUT

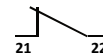
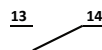
Key to reset

Cat. No.



Head position visible from the side with yellow collar  
Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850  
Supplied with 2 keys profile N°455

● NO+NC

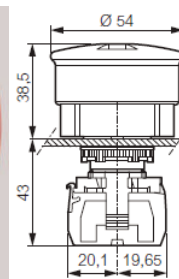


L22GR01B

Ø54 ISO13850 – STAY PUT

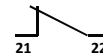
Push-pull to reset with flag indicator

Cat. No.



Head position visible from the side with yellow collar  
Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850  
Flag Indicator : Engraving STOP and I

● NC



L22DU01G

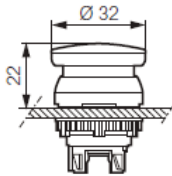


## ▶ Separate Units Ø22: Heads Non Illuminated

Ø32 MUSHROOM – SPRING RETURN

Push

Cat. No.



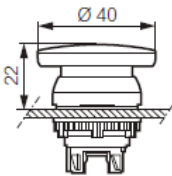
- Red
- Green
- Black
- Yellow

- L21AC01
- L21AC02
- L21AC03
- L21AC04

Ø40 MUSHROOM – SPRING RETURN

Push

Cat. No.



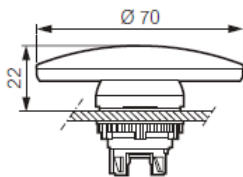
- Red
- Green
- Black
- Yellow
- Blue

- L21AD01
- L21AD02
- L21AD03
- L21AD04
- L21AD06

Ø70 MUSHROOM – SPRING RETURN

Push

Cat. No.



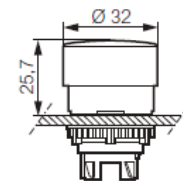
- Red
- Black

- L21AE01
- L21AE03

Ø32 MUSHROOM – STAY-PUT

Push-Turn to reset

Cat. No.



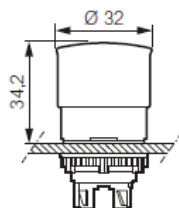
- Red
- Green
- Black
- Yellow

- L22EC01
- L22EC02
- L22EC03
- L22EC04

Ø32 MUSHROOM – STAY-PUT

Push-Pull to reset

Cat. No.



- Red

- L22DC01

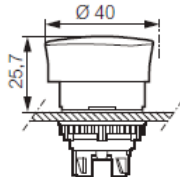


## ▶ Separate Units Ø22: Heads Non Illuminated

Ø40 MUSHROOM – STAY-PUT

Push-Turn to reset

Cat. No.



Without engraving

- Red
- Green
- Black
- Yellow

L22ED01  
L22ED02  
L22ED03  
L22ED04

With engraving

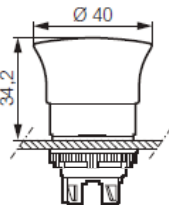
- Red- engraving STOP-STOP-STOP

L22ED01B

Ø40 MUSHROOM – STAY-PUT

Push-Pull to reset

Cat. No.



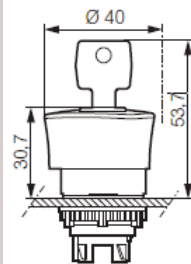
- Red
- Black

L22DD01  
L22DD03

Ø40 MUSHROOM – STAY-PUT

Key to reset

Cat. No.



Supplied with 2 keys profile N°455

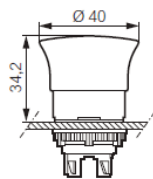
- Red

L22GM01

Ø40 MUSHROOM – STAY-PUT

Push-pull to reset

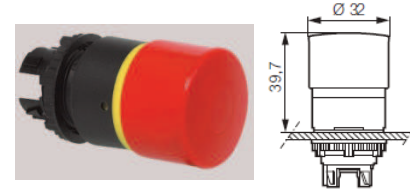
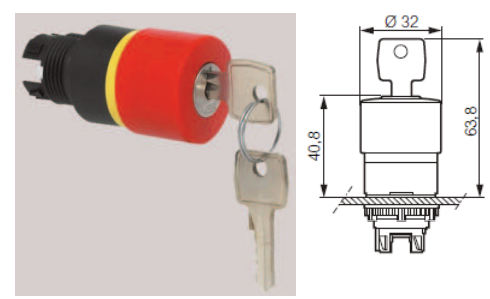
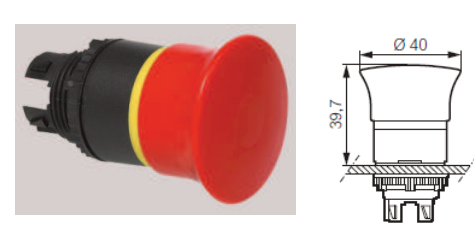

Cat. No.



- With Text STOP STOP STOP

L22DD01S

▶ **Separate Units Ø22: ISO 13850 EMERGENCY STOP – Non Illuminated**

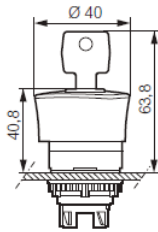
Ø32 ISO 13850 – STAY-PUT	Push-Pull to reset	Cat. No.
	<p>Head position visible from the side with yellow collar Compliant with the requirements of emergency stop: IEC 60947-5-5/ISO 13850</p> <p>● Red</p>	<b>L22DQ01</b>
Ø32 ISO 13850 – STAY-PUT	Key to reset	Cat. No.
	<p>Head position visible from the side with yellow collar Compliant with the requirements of emergency stop: IEC 60947-5-5/ISO 13850 Supplied with 2 keys profile N°455</p> <p>● Red</p>	<b>L22GQ01</b>
Ø40 ISO 13850 – STAY-PUT	Push-pull to reset	Cat. No.
	<p>Head position visible from the side with yellow collar Compliant with the requirements of emergency stop: IEC 60947-5-5/ISO 13850</p> <p>● Red</p>	<b>L22DR01</b>
Ø40 ISO 13850 – STAY-PUT	Push-Turn to reset	Cat. No.
	<p>Head position visible from the side with yellow collar Compliant with the requirements of emergency stop: IEC 60947-5-5/ISO 13850</p> <p>● Red</p>	<b>L22ER01</b>

▶ **Separate Units Ø22: ISO 13850 EMERGENCY STOP – Non Illuminated**

Ø40 ISO 13850 – STAY-PUT

Key to reset

Cat. No.



Head position visible from the side with yellow collar  
Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850  
Supplied with 2 keys profile N°455

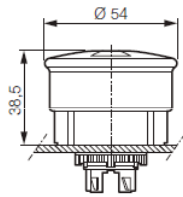
● Red

**L22GR01**

Ø54 ISO 13850 – STAY-PUT

Push-pull to reset with flag indicator

Cat. No.



Head position visible from the side with yellow collar  
Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850

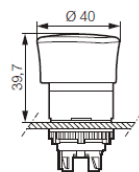
● Red – engraving 0-I  
● Red – engraving STOP -I

**L22DU01A**  
**L22DU01**

Ø40 ISO 13850 – STAY-PUT

Push-turn to reset

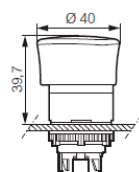
Cat. No.



Head position visible from the side view with yellow collar. Compliant with the requirements of emergency stop ISO13850

● Red with symbol IEC 60417-5638/ ISO 13850

**L22ER01K**



● Red – Engraving Text « EMO »

**L22ER01F**





▶ **Separate Units Ø22: Heads Illuminated**

<p>Ø32 MUSHROOM – SPRING RETURN</p>	<p>Push</p>	<p>Cat. No.</p>
	<ul style="list-style-type: none"> <li>● Red</li> <li>● Green</li> <li>● Yellow</li> <li>○ White</li> </ul>	<p>L21AL10 L21AL20 L21AL40 L21AL50</p>
<p>Ø32 MUSHROOM – STAY-PUT</p>	<p>Push-turn to reset</p>	<p>Cat. No.</p>
	<ul style="list-style-type: none"> <li>● Red</li> </ul>	<p>L22EL10</p>
<p>Ø32 MUSHROOM – STAY-PUT</p>	<p>Push-pull to reset</p>	<p>Cat. No.</p>
	<ul style="list-style-type: none"> <li>● Red</li> </ul>	<p>L22DL10</p>
<p>Ø40 MUSHROOM – STAY-PUT</p>	<p>Push-Turn to reset</p>	<p>Cat. No.</p>
	<ul style="list-style-type: none"> <li>● Red</li> <li>● Green</li> <li>● Yellow</li> </ul>	<p>L22EM10 L22EM20 L22EM40</p>
<p>Ø40 MUSHROOM – STAY-PUT</p>	<p>Push-pull to reset</p>	<p>Cat. No.</p>
	<ul style="list-style-type: none"> <li>● Red</li> <li>● Green</li> <li>● Yellow</li> <li>○ White</li> </ul>	<p>L22DM10 L22DM20 L22DM40 L22DM50</p>
<p>Ø40 ISO 13850 – STAY-PUT</p>	<p>Push-pull to reset</p>	<p>Cat. No.</p>
	<ul style="list-style-type: none"> <li>● Red</li> </ul>	<p>Head position visible from the side with yellow collar Compliant with the requirements of emergency stop: IEC 60947-5-5/ISO 13850</p> <p>L22DN10</p>

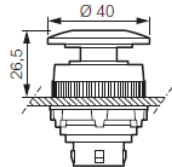


## ▶ Separate Units Ø30: Heads Non Illuminated

Ø40 MUSHROOM – SPRING RETURN

Push

Cat. No.



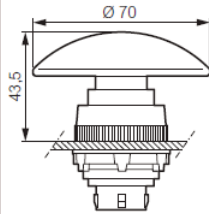
- Red
- Green
- Black
- Yellow

- T16AD01
- T16AD02
- T16AD03
- T16AD04

Ø70 MUSHROOM – SPRING RETURN

Push

Cat. No.



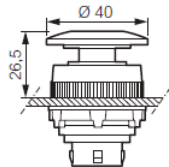
- Red
- Black

- T16AE01
- T16AE03

Ø40 MUSHROOM – STAY-PUT

Push-Pull to reset

Cat. No.



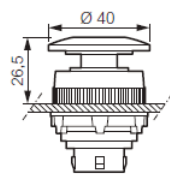
- Red
- Green
- Black
- Yellow

- T16DD01
- T16DD02
- T16DD03
- T16DD04

Ø40 MUSHROOM – STAY-PUT

Push-turn to reset

Cat. No.



### Stay-put

- Red
- Green
- Black
- Yellow

- T16ED01
- T16ED02
- T16ED03
- T16ED04

### Manual Locking

- Red
- Green
- Black
- Yellow

- T16FD01
- T16FD02
- T16FD03
- T16FD04

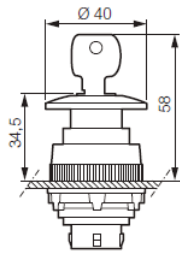


## ▶ Separate Units Ø30: Heads Non Illuminated

Ø40 MUSHROOM – STAY-PUT

Key to reset

Cat. No.



Supplied with 2 keys profile N°455

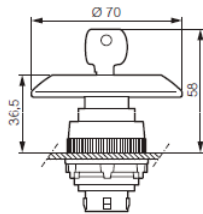
● Red

**T16GM01**

Ø70 MUSHROOM – STAY-PUT

Key to reset

Cat. No.



Supplied with 2 keys profile N°455

● Red

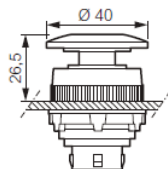
**T16GP01**

## ▶ Separate Unit Ø30: Head Illuminated

Ø40 MUSHROOM – SPRING RETURN

Push

Cat. No.



● Red  
● Green  
● Yellow  
○ Opal

**T16AM10**  
**T16AM20**  
**T16AM40**  
**T16AM50**


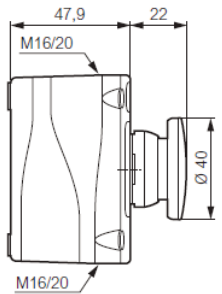


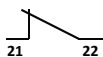
▶ **Control stations with 1 button – Non Illuminated**


MUSHROOM HEAD Ø40 – SPRING RETURN

Push

Cat. No.


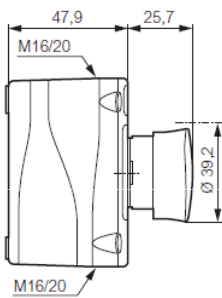
● NC 

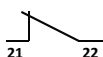
**Marking**  **LBX10210**

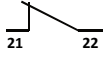
MUSHROOM HEAD Ø40 – STAY-PUT

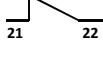
Push-turn to reset

Cat. No.

● NC 

● NC 

● NC 

**Marking**

ARRET D'URGENCE **LBX10310**


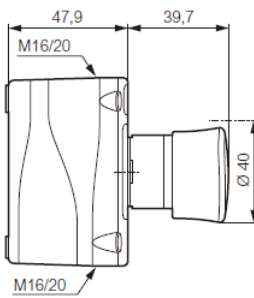
NOT AUS **LBX10410**

EMERGENCY STOP **LBX10510**

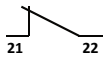
MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT

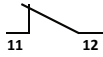
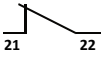
Push-turn to reset

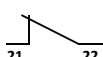
Cat. No.

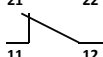
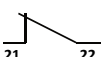



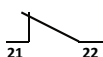
Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850

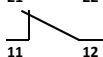
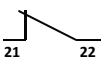
● NC 

● 2NC  


● NC 


● 2NC  


● NC 


● 2NC  


**Marking**


ARRET D'URGENCE +  **LBX17101**

ARRET D'URGENCE +  **LBX17102**

NOT HALT +  **LBX17201**

NOT HALT +  **LBX17202**

EMERGENCY STOP +  **LBX17301**

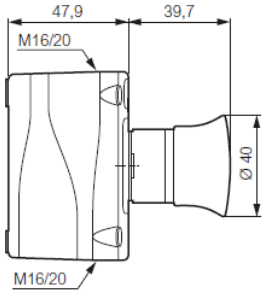
EMERGENCY STOP +  **LBX17302**

▶ **Control stations with 1 button – Non Illuminated**

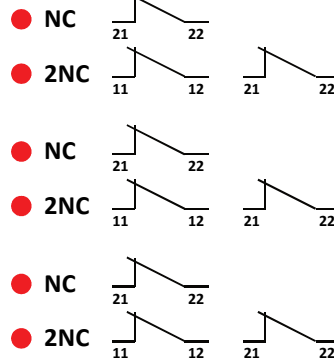
MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT

Push-pull to reset

Cat. No.



Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850



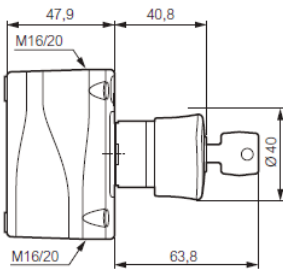
**Marking**

- ARRET D'URGENCE + **LBX15101**
- ARRET D'URGENCE + **LBX15102**
- NOT HALT + **LBX15201**
- NOT HALT + **LBX15202**
- EMERGENCY STOP + **LBX15301**
- EMERGENCY STOP + **LBX15302**

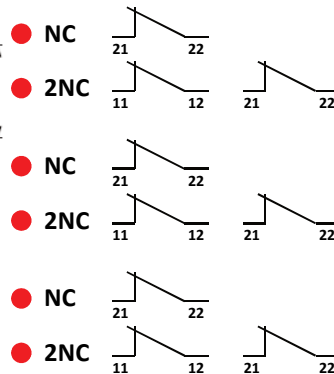
MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT

Key to reset

Cat. No.



Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850



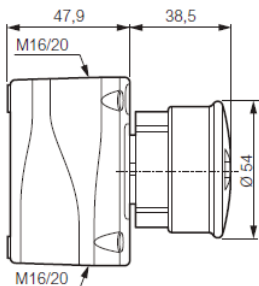
**Marking**

- ARRET D'URGENCE + **LBX11101**
- ARRET D'URGENCE + **LBX11102**
- NOT HALT + **LBX11201**
- NOT HALT + **LBX11202**
- EMERGENCY STOP + **LBX11301**
- EMERGENCY STOP + **LBX11302**

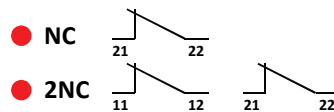
MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT

Push-pull to reset with flag indicator

Cat. No.



Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850  
Double position indicator : Head and collar



**Marking**

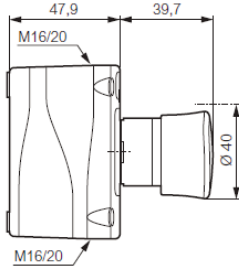
- STOP- **LBX14201**
- STOP- **LBX14202**

## ▶ Control stations with 1 button – Non Illuminated

MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT

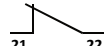
Push-turn to reset

Cat. No.



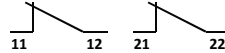
With symbol IEC 60417-5638/ ISO 13850 on the button head

● NC



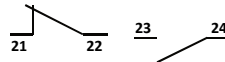
LBX130065

● 2NC



LBX130066

● NC+NC

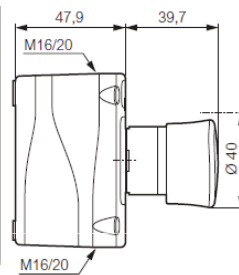


LBX130057

MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT

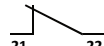
Push-turn to reset

Cat. No.



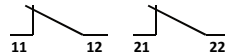
With EMO Text on button Head

● NC



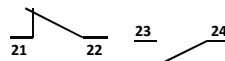
LBX130067

● 2NC



LBX130069

● NC+NO

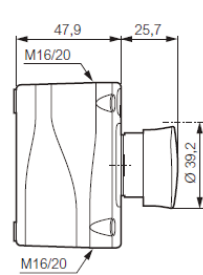


LBX130068

MUSHROOM HEAD Ø40 - STAY-PUT

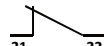
Push-turn to reset

Cat. No.



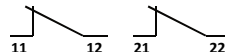
With STOP STOP STOP Text on button Head

● NC



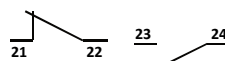
LBX130008

● 2NC



LBX130009

● NC+NO

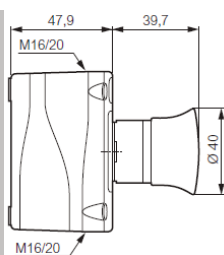


LBX130010

MUSHROOM HEAD Ø40 - STAY-PUT

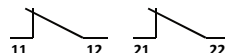
Push-pull to reset

Cat. No.



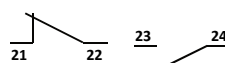
With STOP STOP STOP Text on button Head

● 2NC



LBX130075

● NC+NO




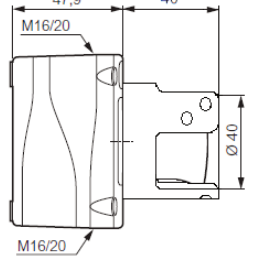
LBX130074



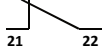
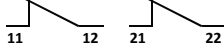
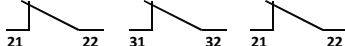
► **Control stations with 1 button – Non Illuminated**

MUSHROOM HEAD Ø40 + PADLOCKABLE GUARD- MAINTAINED Push-pull to reset Cat. No.




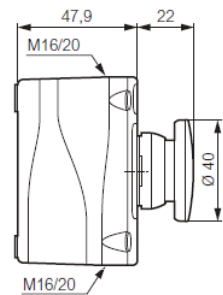


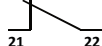
Contacts blocks attached to operator

- NC  LBX130091
- 2NC  LBX130092
- 3NC  LBX130093


MUSHROOM HEAD Ø40 – SPRING RETURN Push Cat. No.






● NC 

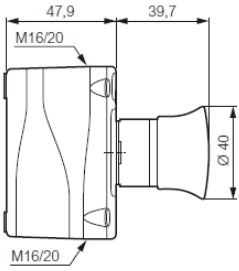
**Marking**

 LBX130047

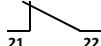
► **Control stations with 1 button – Illuminated**

MUSHROOM HEAD Ø40 – ISO 13850- STAY-PUT Push-pull to reset Cat. No.







Compliant with the requirements of emergency stop:  
IEC 60947-5-5/ISO 13850  
Supplied with 230V Red led, 33SARH

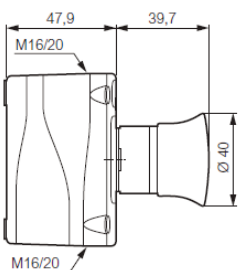
● NC 

**Marking**

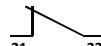
 LBX130179

MUSHROOM HEAD Ø40 - STAY-PUT Push-pull to reset Cat. No.





Supplied with 230V Red led, 33SARH

● NC 

**Marking**

EMERGENCY STOP LBX130049



## ▶ Control stations Ø22

1 HOLE ENCLOSURE

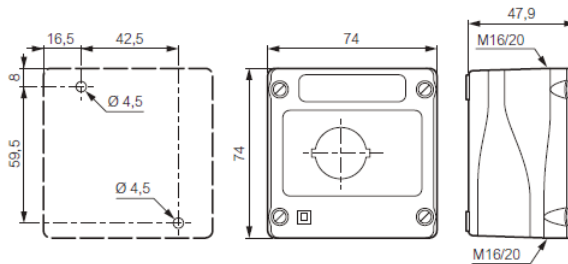
Cat. No.



**Black base**

● Yellow cover

**LBX0100J**



1 HOLE ENCLOSURE

Cat. No.

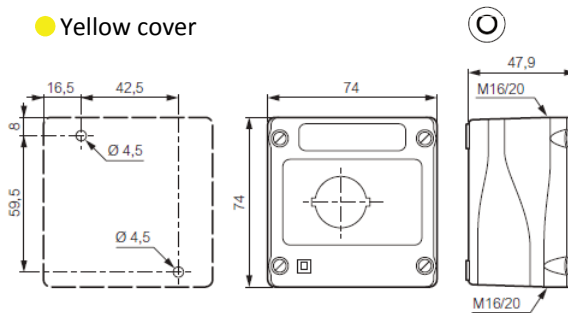


**Black base**

● Yellow cover

**Marking**

**LBX130046**



1 HOLE ENCLOSURE

Cat. No.



**Black base**

● Yellow cover

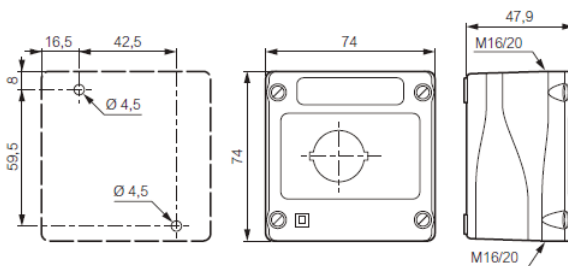
**Marking**

EMERGENCY STOP

**LBX0100JB**

● Yellow cover with symbol IEC 60417-5438/ISO 13850

**LBX130167**





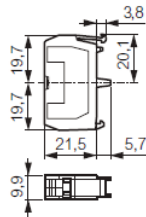


**BACO®**

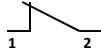
**▶ Separate units**

**CONTACT BLOCKS – SCREW TERMINALS**

Cat. No.

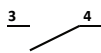


NC



**33E01**

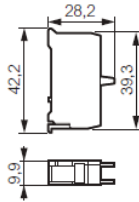
NO



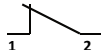
**33E10**

**CONTACT BLOCKS FOR CONTROL STATIONS SCREW TERMINALS**

Cat. No.

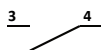


NC



**33S01**

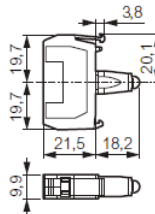
NO



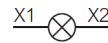
**33S10**

**LED BLOCKS – SCREW TERMINALS**

Cat. No.



LED



● RED 24V

**33EARL**

● RED 48V

**33EARL4**

● RED 130V

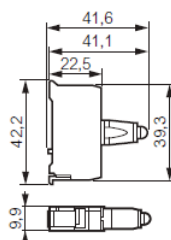
**33EARM**

● RED 230V

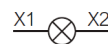
**33EARH**

**LED BLOCKS FOR CONTROL STATIONS – SCREW TERMINALS**

Cat. No.



LED



● RED 24V

**33SARL**

● RED 130V

**33SARM**

● RED 230V

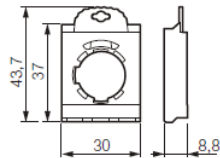
**33SARH**



▶ **Separate units**

CLIP

Cat. No.



3 positions

333E

ROUND LEGEND PLATE FOR MUSHROOM HEAD

Cat. No.



According to ISO 13850 Text + Symbol

- Ø60 ARRET D'URGENCE + **LWE16100**
- NOT-HALT + **LWE16232**
- EMERGENCY STOP + **LWE16300**
- Ø80 ARRET D'URGENCE + **LWE00100**
- NOT-HALT + **LWE00232**
- EMERGENCY STOP + **LWE00300**
- Ø60 Without symbol, text only ARRET D'URGENCE **LWE16152**
- NOT AUS **LWE16200**
- EMERGENCY STOP **LWE16352**
- Ø80 Without symbol, text only ARRET D'URGENCE **LWE00152**
- NOT AUS **LWE00200**
- EMERGENCY STOP **LWE00352**

PADLOCKABLE GUARD

Cat. No.



For stay-put mushroom head

● Yellow

LWA0240

FIXING TOOL

Cat. No.



Fixing tool for locking ring

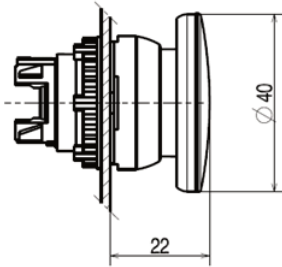
LWA0234



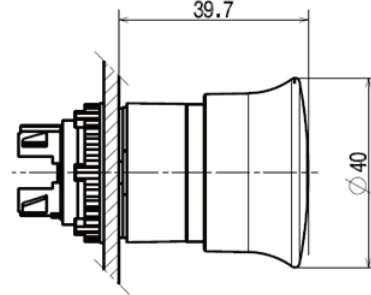
## ► Technical characteristics

### MEASUREMENT

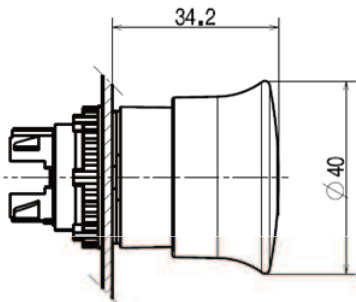
Spring return Mushroom head



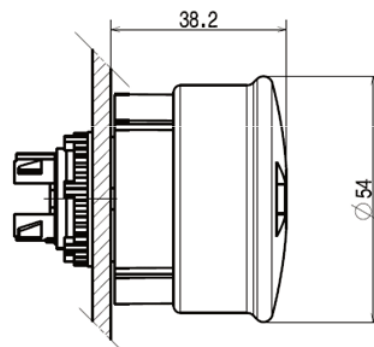
Mushroom head  $\varnothing$  40, ISO 13850 Push-pull Stay-put



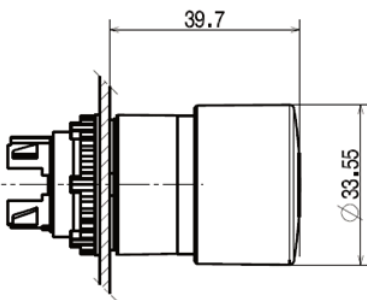
Mushroom head  $\varnothing$  40 Push-pull Stay -put



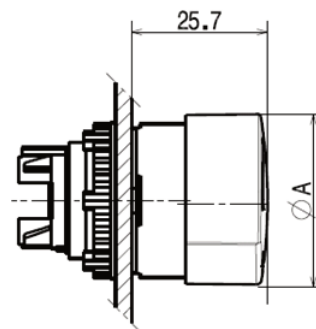
Mushroom head  $\varnothing$  54, ISO 13850 Push-pull Stay-put



Mushroom head ISO 13850  $\varnothing$  32 push-pull stay-put



Mushroom head Push-turn Stay-put



Ref L22EC01/03  $\varnothing A = 32$  mm

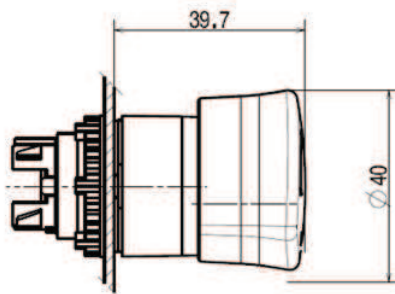
Ref L22ED01/03/01B  $\varnothing A = 40$  mm



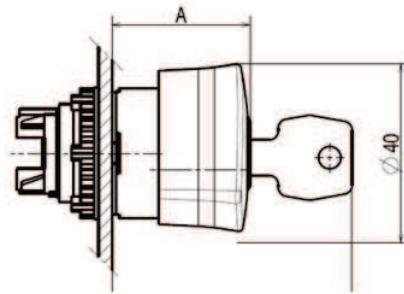
## ► Technical characteristics

### MEASUREMENT

Mushroom head  
ISO 13850 Push-turn Stay-put



Mushroom head Stay-put Key to reset

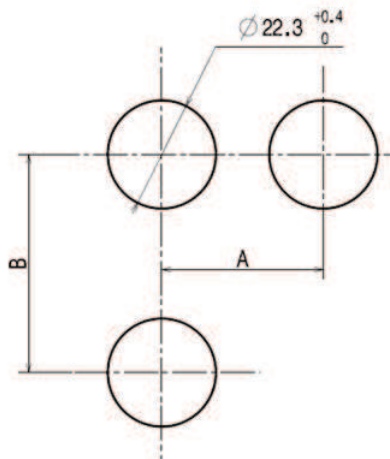


Ref	A (mm)	B (mm)
L22GM01	30.7	53.7
L22GR01	40.8	63.8

### INSTALLATION

**Drilling:**

Standard drilling (products fitted with screw and plug-in connection).  
Panel thickness: 1 to 6 mm



		Dimension (mm)	
A	=	30	With or without legend (usual case)
	=	33	For silicon shroud IP67
	=	40	With large legend plate
	>	40	For Mushroom head Ø 40
	>	45	For selector switch with long handle
	=	38	For super flush button
	=	50	With 5 position clip
B	=	45	With or without legend (usual case)
	=	54	With double touch
	=	77	With double touch + legend plate

**Method for tightening the locking ring:**

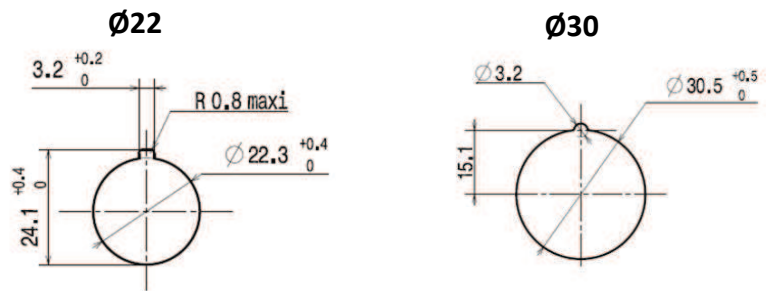
Tightening torque: 3 Nm or tightened with fixing tool (LWA0234) to hand tight after pressure point plus another half turn.



## ▶ Technical characteristics

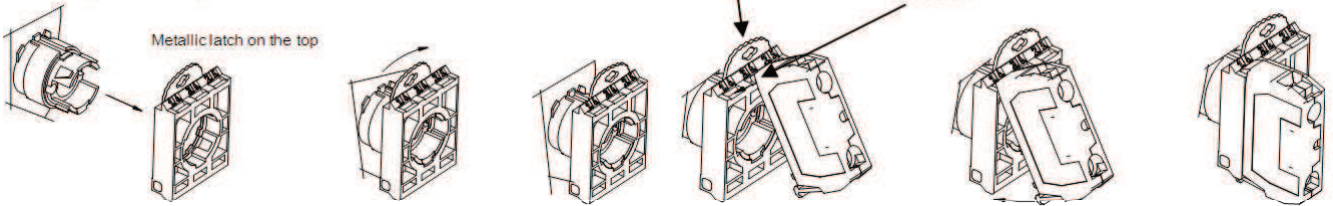
### INSTALLATION

Drilling when using the anti rotation tab:

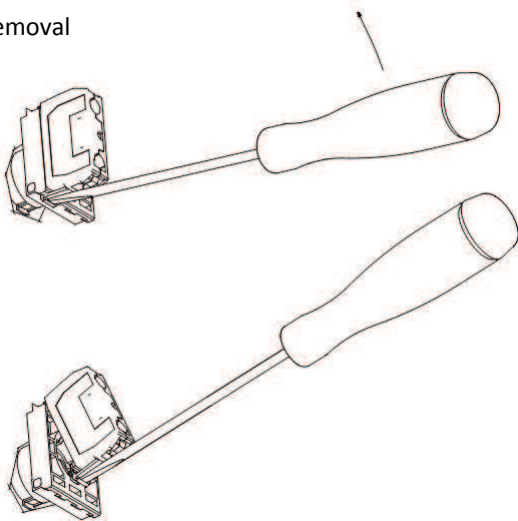


### MOUNTING

Head foolproof on the top



removal



### Technical characteristics

#### Protection index :

- . IP 66 and NEMA 4x,12,13 for standard heads
- . IP 67 with silicon shroud
- . IP 20 at the back of panel for the one piece pilot lights

#### Protection against mechanical impact:

- . IK 05 for heads



## ▶ Technical characteristics

Characteristics	Data	Standards
➤ Storage temperature	- 40 °C to + 70 °C	
➤ Operating temperature	- 25 °C to + 70 °C	
➤ Climatic resistance	Constant humid heat	IEC 60068-2-3
	Cyclic damp heat	IEC 60068-2-30
	Resistance to sea air	IEC 60068-2-52
➤ Degree of protection	IP 66 for standard heads	IEC 60529
	IP 66 for equipped control stations	IEC 60529
	IP 69 and IP69K for push buttons	IEC 60529 – ISO 20653
	IP 69 and IP69K for emergency stops	IEC 60529 – ISO 20653
	IP 20 at the rear of the panel for contact blocks and one piece pilot lights	
	Type 1, 2, 3, 3R, 3S, 4, 4X, 12, and 13 for heads and control stations	NEMA standard
➤ Protection against mechanical impacts	IK 05 illuminated and non illuminated heads	IEC 62262
	IK 07 empty control station	
➤ Electrical insulation	Class II - heads and control station	IEC 60947-5-1
➤ Terminal marking		IEC 60947-1
➤ Tightening torques	Locking ring: recommended 3 N.m or tightened with the fixing tool to hand tight after pressure point plus another half turn	
	Terminals: max. 1.2 N.m	
➤ Approvals	UL United states and Canada	UL 508, CSA 22.2
	BV Bureau Véritas	Marine rules
	Certification OC/CB IEC 60947-5-1	IEC 60947-5-5 IEC 60947-5-4
➤ Vibrations withstand vibration	Fc test: 2 to 25 Hz, 1.6 mm; 25-100 Hz, 4 g	IEC 60068-2-6

Characteristics	Data	Standards
➤ Mechanical endurance (in million cycles)	Spring return: 5 Mushroom head maintained function ISO 13850: 0,10 Mushroom head maintained function: 0,15	
➤ Activation force in N	Spring return + NO: 6,5 Spring return + NC: 4,5 Additional NO contact: 4,5 Additional NC contact: 3,0 Push-pull mushroom head + NO + NC: 27 Push-turn mushroom head + NO + NC: 22 Push-pull mushroom head ISO 13850 + NO + NC: 37 Push-turn mushroom head ISO 13850 + NO + NC: 60	



## ▶ Contact blocks Technical characteristics

Screw and plug-in connection characteristics	Data	Standards	
➤ Rated insulation voltage	690 V AC 600 V AC	IEC 60947-1 UL 508	
➤ NC contacts	Positive opening	IEC 60947-5-1	
➤ Rated impulse voltage Uimp	6kV		
➤ Pollution degree	3		
➤ Conventional thermal current in free air conditions	AC15:10 A DC13: 2,5 A	IEC 60947-5	
➤ Electrical ratings	<p><b>Alternating current</b> AC15 - A 600 Ue = 120 V, Ie = 6 A Ue = 240 V, Ie = 3 A Ue = 380 V, Ie = 1,9 A Ue = 480 V, Ie = 1,5 A Ue = 500V, Ie = 1,4 A Ue = 600 V, Ie = 1,2 A</p> <p><b>Minimum operating current</b> - standard blocks Ue = 24 V DC and Ie = 5 mA Failure rate &lt; 10<sup>-8</sup></p>	<p><b>Direct current</b> DC13 - Q 600 Ue = 125 V, Ie = 0,55 A Ue = 250 V, Ie = 0,27 A Ue = 400 V, Ie = 0,15 A Ue = 500 V, Ie = 0,13 A Ue = 600V, Ie = 0,1 A</p> <p>- golden contacts Ue = 5 V DC and Ie = 1 mA Failure rate &lt; 10<sup>-8</sup></p>	IEC 60947-5-1
➤ Electrical operating life	<p><b>1 million cycles for:</b> - AC15 - B 300 Ue = 120 V, Ie = 3 A Ue = 240 V, Ie = 1,5 A</p> <p>- DC13 - R 300 Ue = 125 V, Ie = 0,22 A Ue = 250 V, Ie = 0,1 A</p>		
➤ Applicable wire sizes	Rigid or flexible wire without ferrule: 0,5 mm <sup>2</sup> to 2 x 2,5 mm <sup>2</sup> Rigid or flexible wire with ferrule: 0,5 mm <sup>2</sup> to 2 x 1,5 mm <sup>2</sup>		



## ▶ Led block Technical characteristics

Characteristics	Data	Standards
➤ Rated insulation voltage	300 V	IEC 60947-5-1
➤ Rated impulse voltage Uimp	4 kV (with filter block see p. 64)	IEC 60947-1
➤ Operating voltage	Pollution degree 3 12 to 24 V AC/DC 48 V AC/DC (for LED block) 130 V AC 230 V AC	
➤ Frequency	50 or 60 Hz	
➤ Lifetime at rated supply voltage	Red and yellow: 100 000 hours at 25 °C Other colours: 50 000 hours at 25 °C	
➤ Consumption of LED blocks	Voltage: - 24 V: 25 mA ± 20% - 48 V: 15 mA ± 5% - 130 V: 20 mA ± 10% - 230V: 16mA ± 30%	

## ▶ Technical characteristics Ø30

Characteristics	Data	Standards
➤ Storage temperature for illuminated or non illuminated button	- 40°C to + 70°C	
➤ Operating temperature	Non illuminated buttons: - 25°C to + 70°C Illuminated buttons: - 25°C to + 60°C	
➤ Degree of protection	IP 65 for standard heads IP 67 for shrouded heads	IEC 60947-1
➤ Mechanical life	Spring return push button: 3 x 10 <sup>6</sup> operating cycles	IEC 60947-5-1

The blocks used for diameter 30 are the same as for diameter 22.





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**▶ Notes**



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