Harmony™ XB7 monolithic 22 mm push buttons

Catalog
2012

Schneider Electric™

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Harmony™ XB7: Compact, robust, monolithic 22 mm push buttons for your machines

For your control systems that require high-performance, compact, and easy-to-install components...Harmony XB7 push buttons are your ideal solution. The new Emergency Stop push button design allows immediate identification of safety functions and status of contacts.

> Simple installation, simple integration...

Easy to install and to integrate into your Control Systems

> Designed for quality and conformity...

Conforms to industry standards and Machinery Directive

> High performance for industrial applications...

Robust, durable controls for industry and buildings

Make the most of your energy℠

Simple installation...

The monolithic design of the Harmony™ XB7 makes it **easy to mount** on machines or control panels with only one ring nut.

The 4 top-down terminals enable **easy wiring** with finger protection (IP 20).

IEC 60529
compliant

Simple integration...

New ergonomic design in 6 colors, plus illuminated functions with **integrated LED**.

Complete
product range

Push buttons ○●●●●●

Pilot lights ●●●○○●

Long life: a duration of more than 70,000 hours on pilot lights and 1 million operations for push buttons.

Illuminated push buttons
●●●●○●

Handle selectors
●

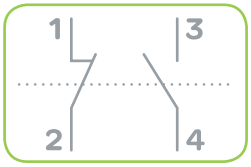
Key selectors
●

Emergency stop push buttons
●

1 reference = 1 function

Electrical reliability

Contact functions are designed for **load switching** (I/O interface) and resistance to vibrations.



Designed for quality and conformity...

Harmony™ XB7 “Emergency stop” push buttons comply with EN/IEC and UL standards, EN 13850, EN/IEC 60947-5-5 and are designed for machines and industrial control panels. The emergency stop function consists of:

Red trigger action

Standardized yellow legend

Green mark on body allows contact state visualization

Off

On

Green
mark for contact state

Worldwide availability

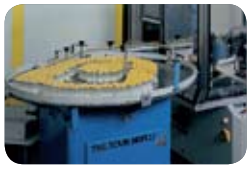
Conforming to
EN/IEC 60947-5-5

International certifications:
CE, UL, CSA, CCC, GOST

High performance for industrial applications...

The Harmony XB7 push button is perfect for industry applications like packaging and other machine processes, and building applications, including: HVAC, electrical distribution, and lighting.

Degree of protection
IP 65

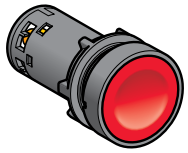
Assembly lines	Packaging machines	HVAC	Buildings
			

Harmony™ XB7 monolithic 22 mm push buttons

Push buttons, switches and pilot lights

Complete products: Contact functions

Spring return push buttons with/without marking



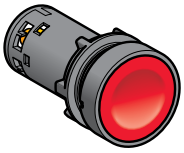
Flush

XB7 NA●●●●: see page 11

Projecting

XB7 NL●●●●: see page 11

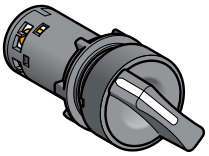
Latching push buttons without marking



Flush

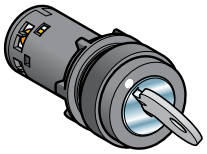
XB7 NH●●: see page 11

Selector switches and key switches



Standard handle, black

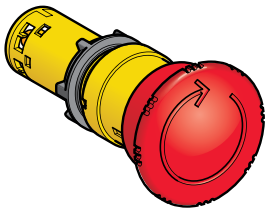
XB7 ND●●: see page 14



Key operated

XB7 NG●●: see page 14

Emergency Stop push buttons



Turn to release/Push-pull/Key release

XB7 NS●●●●/XB7 NT●●●: see page 14

Complete products: Signalling functions

Pilot lights

With integral LED

XB7 EV0●●P: see page 13

Illuminated push buttons, with projecting push

With integral LED, spring return or latching

XB7 NW●●●●, XB7 NJ●●●●1: see page 13

Legend holders, legends, and accessories

See pages 15 and 16

Harmony™ XB7 monolithic 22 mm push buttons

Push buttons, switches and pilot lights

Environment

Protective treatment	Standard version		"TH"
Ambient air temperature around the device	For storage	**°C**	-40 to +70
	For operation	**°C**	-25 to +70 for integral LED version
Electric shock protection	Conforming to IEC 61140		Class II
Degree of protection	Conforming to IEC 60529		Front face: □ IP 65 for push buttons, illuminated push buttons, pilot lights, selector switches and Emergency Stop push buttons Rear face: □ IP 20 (protection against direct contact)
	Conforming to UL 50E		□ Suitable for enclosure type 3: push buttons, illuminated push buttons, selector switches, Emergency Stop push buttons □ Suitable for enclosure type 4: pilot lights with integral LED □ Suitable for enclosure type 12: Emergency Stop push buttons, pilot lights with integral LED
Conformity to standards	Generic standards UL, CSA, GOST, CCC and CE		□ EN/IEC 60947-1, EN/IEC 60947-5-1 for push buttons, pilot lights, illuminated push buttons and selector switches □ UL, EN/IEC 60947-1, EN/IEC 60947-5-1, EN/IEC 60947-5-5, EN/IEC 60204-1 and EN/ISO 13850 for Emergency Stop trigger action push buttons □ UL 508, CSA C22 n° 14, CCC, GB 14048.5 for all XB7 range
Terminal referencing	Conforming to EN 50005 and EN 50013		Conforms

General specifications

Mechanical durability (in operating cycles)			□ Push buttons: 1,000,000 □ Illuminated push buttons, spring return and latch type: 300,000 □ Selector switches and key switches: 300,000 □ Emergency Stop: 100,000
Vibration resistance	Conforming to IEC 60068-2-6		5 gn (frequency 2 to 500 Hz)
Mechanical shock resistance	Conforming to IEC 60068-2-27		Half sine wave acceleration 11 ms: 50 gn Half sine wave acceleration 18 ms: 30 gn Half sine wave acceleration 11 ms: - 15 gn for Emergency Stop push buttons
Mounting Conforming to EN/IEC 60947-5-1	Finished mounting hole	**mm**	22.5, recommended (22.3 + 0.4/0)
	Mounting center	**mm**	□ 30 x 40 for all products (except Emergency Stop push buttons) □ 40 x 40 for Emergency Stop push buttons
	Support panel thickness	**mm**	□ Metal: 1 to 6 □ Plastic: 2 to 6
	Mounting nut: head tightening torque	**N•m**	□ 2.2 (+/-0.2)
Cabling capacity Conforming to EN/IEC 60947-1	Screw clamp terminal connection	**mm²**	For all types of push buttons and pilot lights: □ min: 1 x 0.34 mm^2 without cable end □ max: 2 x 1.5 mm^2 with cable end or 2 x 2.5 mm^2 without cable end
	Forked "U" type tag connection		2 max., fitted head to tail (for all types of push buttons and pilot lights) Recommended fork width: 6.5 mm (7 mm max.) for M3 screw
	Faston clip connection	**mm**	Type 6.35 x 0.8 mm (for pilot lights only)
Tightening torque of mounting screws		**N•m**	□ 0.8 (nominal recommended) □ 1.2 (max.) Screw heads compatible with Pozidriv, Phillips or JIS screwdrivers (size 1) and flat tipped screwdrivers (4 and 5.5 mm)

References: page 11
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Harmony™ XB7 monolithic 22 mm push buttons

Push buttons, switches and pilot lights

Contact function specifications

Type of contact	N/C, N/O or N/C+N/O			□ Slow break □ Snap action for Emergency Stop push buttons
Positive operation	Conforming to EN/IEC 60947-5-1 Appendix K			All functions incorporating a N/C contact are positive opening operation
Short-circuit protection	Conforming to EN/IEC 60947-5-1		**A**	4 (using gG cartridge fuse conforming to IEC 269-1)
Rated insulation voltage	Conforming to EN/IEC 60947-1		**V**	Ui = 250 (degree of pollution 3)
Rated impulse withstand voltage	Conforming to EN/IEC 60947-1		**kV**	Uimp = 6
Rated operational specifications conforming to EN/IEC 60947-5-1	a.c. supply: utilization category	AC14, D300		Ue = 240 V and Ie = 0.3 A or Ue = 120 V and Ie = 0.6 A
		AC15, C300		Ue = 120 V and Ie = 1.5 A or Ue = 240 V and Ie = 0.75 A (Emergency Stop only)
		DC13, R300		Ue = 250 V and Ie = 0.1 A or Ue = 125 V and Ie = 0.22 A
Electrical reliability at 17 V and 5 mA	Failure rate in accordance with EN/IEC 60947-5-4			□ $\lambda \leq 10^{-6}$ □ $\lambda \leq 5 \times 10^{-7}$ (Emergency Stop only)

Light function specifications

Type of signaling units				**Illuminated push buttons**	**Pilot lights**
Integral LED					
Current consumption	For all colors	⎓/∿ 24 V	**mA**	18 (27 max)	20 (27 max.)
		∿ 120 V	**mA**	12 (17 max)	18 (21 max.)
		∿ 230 V	**mA**	22 (27 max)	16 (20 max.)
Voltage limits	At nominal voltage	⎓ 24 V	**V**	19.2 to 30	
		∿ 24 V	**V**	21.6 to 26.4	
		∿ 120 V	**V**	100 to 132	
		∿ 230–240 V	**V**	195 to 264	
Service life	At nominal voltage and at an ambient temperature of 25 °C		**Hr**	70,000	
Overvoltage withstand	Level of protection	∿ 120 V	**VA**	100	
		∿ 230 V	**VA**	200	
Resistance to electrostatic discharges	Conforming to IEC 61000-4-2		**kV**	6: on contact, on metal parts 8: in free air, in insulating parts	
Resistance to electromagnetic fields	Conforming to IEC 61000-4-3		**V/m**	10	
Resistance to fast transients	Conforming to IEC 61000-4-4		**KV**	2	
Surge withstand	Conforming to IEC 61000-4-5		**KV**	1	
Immunity to conducted disturbances	Conforming to IEC 61000-4-6		**V**	10	
Brightness	At nominal voltage and for all colors		**Lux**	> 200	

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Harmony™ XB7 monolithic 22 mm push buttons

Push buttons, switches and pilot lights

XB7NA31

XB7NL4●

XB7NH2●

Push buttons

Shape of head	Type of push	Type of contact N/O	Type of contact N/C	Marking Text	Marking Color	Color of push	Sold in lots of	Unit reference	Weight kg
Spring return push button without marking									
	Flush	1	–	–	–	White	10	**XB7NA11**	0.021
		1	–	–	–	Black	10	**XB7NA21**	0.021
		1	–	–	–	Green	10	**XB7NA31**	0.021
		1	–	–	–	Yellow	10	**XB7NA81**	0.021
		1	1	–	–	White	10	**XB7NA15**	0.021
		1	1	–	–	Black	10	**XB7NA25**	0.021
		1	1	–	–	Green	10	**XB7NA35**	0.021
		1	1	–	–	Red	10	**XB7NA45**	0.021
		1	1	–	–	Blue	10	**XB7NA65**	0.021
		1	1	–	–	Yellow	10	**XB7NA85**	0.021
		–	1	–	–	Red	10	**XB7NA42**	0.021
		2	–	–	–	Black	10	**XB7NA23**	0.021
		2	–	–	–	Green	10	**XB7NA33**	0.021
		–	2	–	–	Red	10	**XB7NA44**	0.021
	Projecting	–	1	–	–	Red	10	**XB7NL42**	0.021
		1	1	–	–	Red	10	**XB7NL45**	0.021
		–	2	–	–	Red	10	**XB7NL44**	0.021
Latch type push button without marking									
	Flush	1	–	–	–	Black	10	**XB7NH21**	0.021
		1	–	–	–	Green	10	**XB7NH31**	0.021
		1	1	–	–	Black	10	**XB7NH25**	0.021
		1	1	–	–	Green	10	**XB7NH35**	0.021
		1	–	–	–	Yellow	10	**XB7NH81**	0.021

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Harmony™ XB7 monolithic 22 mm push buttons

Push buttons, switches and pilot lights

XB7NA3133

XB7NA4234

XB7NL4232

Push buttons (continued)

Shape of head	Type of push	Type of contact N/O	Type of contact N/C	Marking Text	Marking Color	Color of push	Sold in lots of	Unit reference	Weight kg
Spring return push button with marking									
	Flush	1	–	I	White	Green	10	**XB7NA3131**	0.021
		1	–	II	White	Green	10	**XB7NA3136**	0.021
		1	–	START	White	Green	10	**XB7NA3133**	0.021
		1	–	⬇	Black	White	10	**XB7NA11343**	0.021
		1	–	⬆	Black	White	10	**XB7NA11341**	0.021
		1	–	⇩	White	Black	10	**XB7NA21343**	0.021
		1	–	⇧	White	Black	10	**XB7NA21341**	0.021
		–	1	O	White	Red	10	**XB7NA4232**	0.021
		–	1	STOP	White	Red	10	**XB7NA4234**	0.021
		2	–	I	White	Green	10	**XB7NA3331**	0.021
		2	–	II	White	Green	10	**XB7NA3336**	0.021
		2	–	START	White	Green	10	**XB7NA3333**	0.021
		1	1	O	White	Red	10	**XB7NA4532**	0.021
		1	1	STOP	White	Red	10	**XB7NA4534**	0.021
		1	1	⬇	Black	White	10	**XB7NA15343**	0.021
		1	1	⬆	Black	White	10	**XB7NA15341**	0.021
		1	1	⇩	White	Black	10	**XB7NA25343**	0.021
		1	1	⇧	White	Black	10	**XB7NA25341**	0.021
	Projecting	–	1	O	White	Red	10	**XB7NL4232**	0.021
		–	1	STOP	White	Red	10	**XB7NL4234**	0.021
		1	1	O	White	Red	10	**XB7NL4532**	0.021
		1	1	STOP	White	Red	10	**XB7NL4534**	0.021

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Harmony™ XB7 monolithic 22 mm push buttons

Push buttons, switches and pilot lights

XB7NW33●1

Illuminated push buttons, projecting push

with integral LED

Shape of head	Type of push and contacts	Color of lens	Sold in lots of	Unit reference by supply voltage *(1)*			Weight
				~ / ⎓ 24 V	~ 120 V	~ 230 V	kg
	Spring return push with N/O or N/C contacts *(1)*	Green	10	**XB7NW33B1**	**XB7NW33G1**	**XB7NW33M1**	0.023
		Red	10	**XB7NW34B1**	**XB7NW34G1**	**XB7NW34M1**	0.023
			10	**XB7NW34B2**	**XB7NW34G2**	**XB7NW34M2**	0.023
		Orange	10	**XB7NW35B1**	**XB7NW35G1**	**XB7NW35M1**	0.023
		Blue	10	**XB7NW36B1**	**XB7NW36G1**	**XB7NW36M1**	0.023
		Clear	10	**XB7NW37B1**	**XB7NW37G1**	**XB7NW37M1**	0.023
		Yellow	10	**XB7NW38B1**	**XB7NW38G1**	**XB7NW38M1**	0.023
	Latch push	Green	10	**XB7NJ03B1**	**XB7NJ03G1**	**XB7NJ03M1**	0.023
		Red	10	**XB7NJ04B1**	**XB7NJ04G1**	**XB7NJ04M1**	0.023
			10	**XB7NJ04B2**	**XB7NJ04G2**	**XB7NJ04M2**	0.023
		Orange	10	**XB7NJ05B1**	**XB7NJ05G1**	**XB7NJ05M1**	0.023
		Blue	10	**XB7NJ06B1**	**XB7NJ06G1**	**XB7NJ06M1**	0.023
		Clear	10	**XB7NJ07B1**	**XB7NJ07G1**	**XB7NJ07M1**	0.023
		Yellow	10	**XB7NJ08B1**	**XB7NJ08G1**	**XB7NJ08M1**	0.023

XB7EV08●P

Pilot lights

with integral LED

Shape of head	Type of light source (included)	Color of lens	Sold in lots of	Unit reference by supply voltage *(2)*			Weight
				~ / ⎓ 24 V	~ 120 V	~ 230 V	kg
	Integral LED	Green	10	**XB7EV03BP**	**XB7EV03GP**	**XB7EV03MP**	0.020
		Red	10	**XB7EV04BP**	**XB7EV04GP**	**XB7EV04MP**	0.020
		Yellow	10	**XB7EV05BP**	**XB7EV05GP**	**XB7EV05MP**	0.020
		Blue	10	**XB7EV06BP**	**XB7EV06GP**	**XB7EV06MP**	0.020
		Clear	10	**XB7EV07BP**	**XB7EV07GP**	**XB7EV07MP**	0.020
		Orange	10	**XB7EV08BP**	**XB7EV08GP**	**XB7EV08MP**	0.020

(1) All product references ending with "1" correspond to products with N/O contacts (Example: XB7NW34B1). All product references ending with "2" correspond to products with N/C contacts (Example: XB7NW34B2).
(2) For Faston® connection version (1 x 6.35 mm and 2 x 2.8 mm), add the number "3" to the end of the reference. Example: XB7EV07BP becomes XB7EV07BP3.

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Harmony™ XB7 monolithic 22 mm push buttons

Push buttons, switches and pilot lights

XB7ND2●

XB7NG33

XB7 NS84●

Selector switches and key switches

Shape of head	Type of operator	Type of contact NO	Type of contact NC	Number and type of positions *(1)*	Sold in lots of	Unit reference	Weight kg
	Standard handle, black	1	–	2, stay put	10	**XB7ND21**	0.026
		1	1	2, stay put	10	**XB7ND25**	0.026
		2	–	3, stay put	10	**XB7ND33**	0.026
	Key (key n° 455)	1	–	2, key withdrawal in LH position	10	**XB7NG21**	0.050
		2	–	3, key withdrawal in center position	10	**XB7NG33**	0.050

Ø 40 mm Emergency stop trigger action and mechanically latching push buttons

Shape of head	Type of push	Standards	Type of contact NO	Type of contact NC	Color of push	Sold in lots of	Unit reference	Weight kg
	Turn to release	EN/IEC 60204-1, EN/ISO 13850, EN/IEC 60947-5-5, Machinery directive 2006/42/EC and UL	–	1	Red	10	**XB7NS8442**	0.045
			1	1	Red	10	**XB7NS8445**	0.045
			–	2	Red	10	**XB7NS8444**	0.045
	Push-pull		–	1	Red	10	**XB7NT842**	0.040
			1	1	Red	10	**XB7NT845**	0.040
			–	2	Red	10	**XB7NT844**	0.040
	Key release (n° 455)		–	2	Red	10	**XB7NS9444**	0.072
			–	1	Red	10	**XB7NS9445**	0.072

(1) The symbol "⚷" indicates key withdrawal position.

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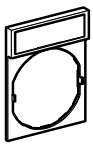
Harmony™ XB7 monolithic 22 mm push buttons

Push buttons, switches and pilot lights



ZBY 2101

Standard (30 x 40 mm) legend holders for 8 x 27 mm legends

Text	Sold in lots of	Unit reference	Weight kg
Without legend	10	ZBZ32	0.001

Legend holder, 30 x 40 mm with legend (black or red background)

with blank legend

Text	Sold in lots of	Unit reference	Weight kg
Without	10	ZBY2101	0.001

with marked legend (sold singly)

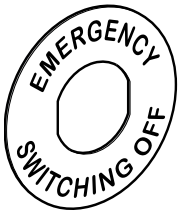
- Start functions: White characters on black background.
- Stop functions: White characters on red background.

Text	Unit reference	Weight kg	Text	Unit reference	Weight kg
Auto	ZBY2115	0.001	Reset	ZBY2323	0.001
Down	ZBY2308	0.001	Reverse	ZBY2306	0.001
Forward	ZBY2305	0.001	Right	ZBY2309	0.001
Hand	ZBY2316	0.001	Start	ZBY2303	0.001
Inch	ZBY2321	0.001	Stop	ZBY2304	0.001
Left	ZBY2310	0.001	Up	ZBY2307	0.001
Off	ZBY2312	0.001	O	ZBY2146	0.001
On	ZBY2311	0.001	I	ZBY2147	0.001
Power on	ZBY2326	0.001	O-I	ZBY2178	0.001

Standard (30 x 50 mm) legend holders for 18 x 27 mm legends

Text	Sold in lots of	Unit reference	Weight kg
Without legend	10	ZBZ 3	0.001

ZBY9330



ZBY9360

Circular legends, yellow, for mushroom head push buttons

used for “Emergency stop” function (1)

Conforming to standards	Diameter mm	Marking on yellow background	Unit reference	Weight kg
EN/IEC 60204-1 and EN/ISO 13850 (1)	60	–	ZBY9140	0.004
		EMERGENCY STOP	ZBY9330	0.004
	90	–	ZBY8140	0.008
		EMERGENCY STOP	ZBY8330	0.008

used for “Emergency switching off” function

Conforming to standard	Diameter mm	Marking on yellow background	Unit reference	Weight kg
EN/IEC 60204-1	60	–	ZBY9101	0.004
		EMERGENCY SWITCHING OFF	ZBY9360	0.004
	90	–	ZBY8101	0.008
		EMERGENCY SWITCHING OFF	ZBY8360	0.008

ZBY42101

ZBY62101

Nameplates, 30 x 40 mm, blank

Text color	Background color	Unit reference
White	Black	ZBY42101
White	Red	ZBY44101
Black	Yellow	ZBY41101
Black	White	ZBY45101

Nameplates, 30 x 50 mm, blank

Text color	Background color	Unit reference
White	Black	ZBY62101
White	Red	ZBY64101
Black	Yellow	ZBY61101
Black	White	ZBY65101

(1) For compliance with standard EN/ISO 13850, paragraph 4.4.6, the Emergency stop logo has been added.

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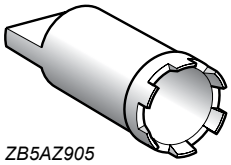
Harmony™ XB7 monolithic 22 mm push buttons

Push buttons, switches and pilot lights

ZB5AZ902

ZB5AZ901



ZB5AZ905

ZB5SZ3

Accessories

Description	Color	Sold in lots of	Unit reference	Weight kg
Anti-rotation plate	–	10	**ZB5AZ902**	0.008
Mounting nut	–	10	**ZB5AZ901**	0.002
Mounting nut tightening tool	–	1	**ZB5AZ905**	0.016
Plastic circular blanking plug (with mounting nut)	Black	10	**ZB5SZ3**	0.009

Specifications: page 9

Dimensions: page 17

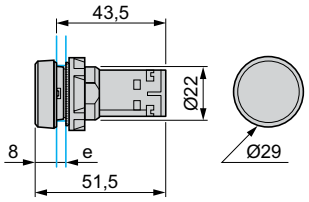
Harmony™ XB7 monolithic 22 mm push buttons

Push buttons, switches and pilot lights

Dimensions

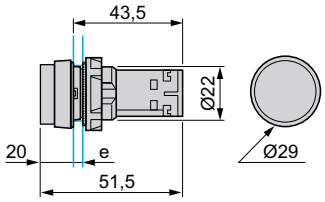
Push buttons, flush type

XB7NA●●●●, XB7NH●●



Push buttons, projecting type

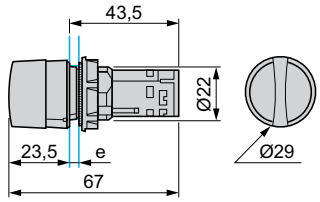
XB7NL●●●●



e : support panel thickness: 1 to 6 mm (metal), 2 to 6 mm (plastic).

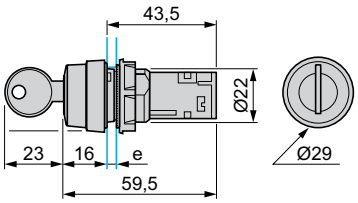
Selector switches, standard handle

XB7ND●●



Key switches

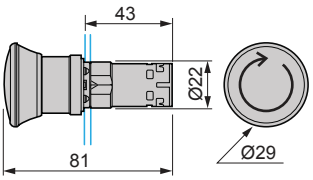
XB7NG●●



e : support panel thickness: 1 to 6 mm (metal), 2 to 6 mm (plastic).

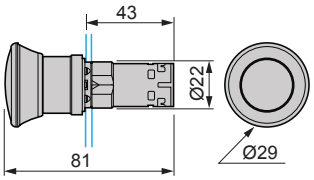
Emergency Stop push buttons (Turn to release)

XB7NS84●●



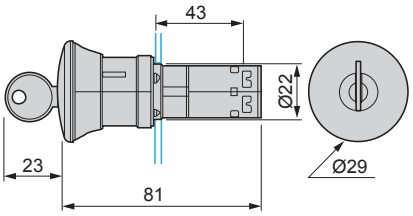
Emergency Stop push buttons (Push-pull)

XB7NT84●



Emergency Stop push buttons with key

XB7NS94●●



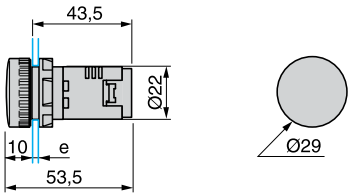
e : support panel thickness: 1 to 6 mm (metal), 2 to 6 mm (plastic).

Specifications:
page 9

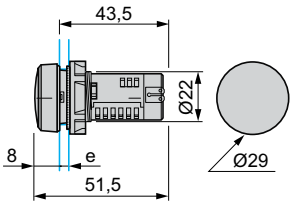
References:
page 11

Dimensions *(continued)*

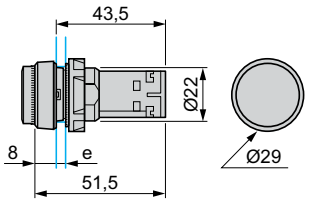
Pilot lights with screw terminal
XB7EV●●●P



Pilot lights with Faston® terminal
XB7EV●●●P3

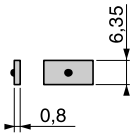


Illuminated push buttons
XB7NW●●●●, XB7NJ●●●●

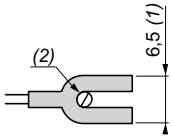


e : support panel thickness: 1 to 6 mm (metal), 2 to 6 mm (plastic).

Faston clip connection (for pilot lights only)



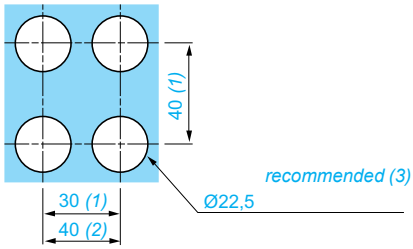
"U" type tag connection



(1) 6.5 recommended, 7 mm max.
(2) M3 screw clamp terminal.

Mounting

Diameter of finished mounting holes



(1) Minimum value.
(2) 40 mm for Emergency Stop push buttons only.
(3) Standard value: Ø 22.3 (0; + 0.4).

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ART. 960710

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