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Environment

Protective treatment	Standard version		"TH"
Ambient air temperature around the device	Storage	°C	- 40...+ 70
	Operation	°C	- 25...+ 70 for LED and neon bulb versions - 25...+ 40 for incandescent bulb version
Electric shock protection	Conforming to IEC 60536		Class II
Degree of protection	Conforming to IEC 60529		IP 54 front face IP 20 rear face (protection against direct contact)
	Conforming to NEMA		NEMA type 12
Mounting	Conforming to IEC/EN 60947-5-1		Finished fixing hole: 22.5 mm recommended (22.3 +0.4/ 0) Fixing centres: 30 x 40 mm min. (unless otherwise indicated) Mounting panel thickness: metal: 1 to 6 mm, double insulated: 2 to 6 mm Recommended tightening torque of fixing nut: 2 N.m. max.: 3 N.m
Cabling capacity	Conforming to EN60947-1		Screw clamp terminal connections: □ min.: 1 x 0.34 mm ² without cable end □ max.: 2 x 1.5 mm ² with cable end Forked "U" tag connectors: 2 max., fitted head to tail Fork width 6 to 7.5 mm for M3.5 screw Faston connectors: type 6.35 x 0.8 mm
Screw clamp tightening torque		N.m	0.8 (nominal recommended) 1.2 (max) Screw heads compatible with Pozidriv or Phillips or JIS screwdrivers (size 1) and flat screwdrivers (4 and 5.5 mm)
Mechanical durability (in operating cycles)			Pushbuttons: 1 000 000 Illuminated pushbuttons, spring return: 300 000 Illuminated pushbuttons, push-push: 300 000 Selector switches: 300 000 Key switches: 300 000 Emergency stop pushbuttons: 10 000
Vibration resistance	Conforming to IEC 60068-2-6		5 gn (frequency 2 at 500 Hz)
Electric shock resistance	Conforming to IEC 60068-2-27		50 gn (half sine wave for 11 ms) Emergency stop: 10 gn (half sine wave for 11 ms)
Conforming to standards	Generic standards		IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60947-5-5 UL 508, CSA C22 n°14, JIS C 4520 (pending)
Terminal referencing	Conforming to EN 50005 and EN 50013		Conforming

Contact block characteristics

Type of contact	N/C or N/O or C/O		Slow break
Positive operation	Conforming to IEC/EN 60947-5-1 appendix K		All functions incorporating an N/C contact have positive opening operation
Short-circuit protection	Conforming to IEC/EN 60947-5-1	A	4 (gG cartridge fuse conforming to IEC 269-1)
Rated insulation voltage	Conforming to IEC/EN 60947-1	V	Ui = 250 (degree of pollution 3)
Rated impulse withstand voltage	Conforming to IEC/EN 60947-1	kV	Uimp = 6
Rated operational characteristics (conforming to IEC/EN 60947-5-1)	a.c. supply: utilisation category AC14, D300		Ue = 240 V and Ie = 0.3 A or Ue = 120 V and Ie = 0.6 A
Electrical reliability	Failure rate conforming to IEC 60947-5-4		At 17 V and 5 mA: $\lambda \leq 10^{-6}$






Single light block characteristics

Type of bulb			LED	Incandescent (all models)	Neon (direct)
Voltage limits	For rated voltage	V	24 V \approx : 19.2...30 \approx ; 21.6...26.4 \approx 120 V \approx : 100...132 \approx 230-240 V \approx : 195...264 \approx	120 V \approx : 100...132 \approx 230 V \approx : 195...264 \approx	Direct supply model: 230 V \approx : 195...264 \approx
Current consumption	Applicable to all colours	mA	18 (all types, all voltages)	Depending on bulb	< 5
Service life	At rated voltage and at an ambient temperature of 25 °C	H	80 000	2 000	50 000
Electromagnetic emissions	Conforming to IEC 55011		Class B		



XB7 EA21P

Pushbuttons

Shape of head	Type of push	Type of contact			Marking		Colour of push	Sold in lots of	Unit reference	Weight kg		
		N/O	N/C	C/O	Text	Colour						
Pushbuttons, spring return												
	Flush	1	–	–	–	–	Black	10	XB7 EA21P (1)	0.020		
					–	–	Green	10	XB7 EA31P (1)	0.020		
					–	–	Yellow	10	XB7 EA51P (1)	0.020		
		–	1	–	–	–	Red	10	XB7 EA42P (1)	0.020		
		–	–	1	–	–	Black	10	XB7 EA25P	0.020		
					–	–	Green	10	XB7 EA35P	0.020		
					–	–	Red	10	XB7 EA45P	0.020		
		2	–	–	–	–	Black	10	XB7 EA23P	0.020		
					–	–	Green	10	XB7 EA33P	0.020		
			Flush	1	–	–	“I”	White	Green	10	XB7 EA3131P ▲	0.020
				2	–	–				10	XB7 EA3331P ▲	0.020
	Projecting			–	1	–	“O”	White	Red	10	XB7 EL4232P ▲	0.020
		–	–	1	10	XB7 EL4532P ▲				0.020		
	Flush	1	–	–	↑	Black	White	10	XB7 EA11341P ▲	0.020		
		–	–	1				10	XB7 EA15341P ▲	0.020		
	Flush	1	–	–	↑	White	Black	10	XB7 EA21341P ▲	0.020		
		–	–	1				10	XB7 EA25341P ▲	0.020		

Pushbuttons, push-push

	Flush	1	–	–	–	–	Black	10	XB7 EH21P	0.020
		–	–	–	–	–	Green	10	XB7 EH31P	0.020
		–	–	1	–	–	Black	10	XB7 EH25P	0.020
		–	–	1	–	–	Green	10	XB7 EH35P	0.020

Selector switches

Shape of head	Type of operator	Type of contact			Number and type of positions (2)	Sold in lots of	Unit reference	Weight kg
		N/O	N/C	C/O				
	Standard handle, black	1	–	–	2 - stay put	10	XB7 ED21P (1)	0.025
		1	1	–	2 - stay put	10	XB7 ED25P	0.025
		2	–	–	3 - stay put	10	XB7 ED33P	0.025
	Key switches (key n° 455)	1	–	–	2 - withdrawal from LH position	10	XB7 EG21P	0.049
		2	–	–	3 - withdrawal from centre position	10	XB7 EG33P	0.049

Emergency stop mushroom head pushbuttons, Ø 40

Shape of head	Type of push	Type of contact			Colour of push	Sold in lots of	Unit reference	Weight kg
		N/O	N/C	C/O				
	Turn to release	–	1	–	Red	10	XB7 ES542P	0.032
		1	1	–	Red	10	XB7 ES545P	0.035
	Turn to release (key n° 455)	–	1	–	Red	10	XB7 ES142P	0.055
		1	1	–	Red	10	XB7 ES145P	0.058

(1) For version with Faston connectors (1 x 6.35 mm and 2 x 2.8 mm), add suffix “3” to the above references.

Example: **XB7 EA21P3**.

(2) The symbol “” indicates the key withdrawal position.


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3rd quarter 2005.Characteristics:
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XB7 EV0●●P

Pilot lights with integral LED ("true" colours)

Shape of head	Supply voltage V	Colour of lens	Sold in lots of	Unit reference	Weight kg
	≈ 24	White	10	XB7 EV01BP (1)	0.020
		Green	10	XB7 EV03BP (1)	0.020
		Red	10	XB7 EV04BP (1)	0.020
		Yellow	10	XB7 EV05BP (1)	0.020
		Blue	10	XB7 EV06BP (1) ▲	0.020
		Orange	10	XB7 EV08BP (1) ▲	0.020
	~ 120 50-60 Hz	White	10	XB7 EV01GP (1)	0.020
		Green	10	XB7 EV03GP (1)	0.020
		Red	10	XB7 EV04GP (1)	0.020
		Yellow	10	XB7 EV05GP (1)	0.020
		Blue	10	XB7 EV06GP (1) ▲	0.020
		Orange	10	XB7 EV08GP (1) ▲	0.020
	~ 230 50-60 Hz	White	10	XB7 EV01MP (1)	0.020
		Green	10	XB7 EV03MP (1)	0.020
		Red	10	XB7 EV04MP (1)	0.020
		Yellow	10	XB7 EV05MP (1)	0.020
		Blue	10	XB7 EV06MP (1) ▲	0.020
		Orange	10	XB7 EV08MP (1) ▲	0.020

Illuminated pushbuttons with integral LED ("true" colours)

Shape of head	Type of push	Supply voltage V	Type of contact		Colour of lens	Sold in lots of	Unit reference	Weight kg
			N/O	N/C				
	Projecting	≈ 24	1	–	Green	10	XB7 EW33B1P	0.022
					Red	10	XB7 EW34B1P	0.022
					Yellow	10	XB7 EW35B1P	0.022
		~ 230	1	–	Red	10	XB7 EW34B2P	0.022
					Green	10	XB7 EW33M1P	0.022
					Red	10	XB7 EW34M1P	0.022
					Yellow	10	XB7 EW35M1P	0.022
					Red	10	XB7 EW34M2P	0.022

Illuminated pushbuttons, push-push

Shape of head	Type of push	Supply voltage V	Type of contact		Colour of lens	Sold in lots of	Unit reference	Weight kg
			N/O	N/C				
	Projecting	≈ 24	1	–	Green	10	XB7 EH03B1P	0.022
					Red	10	XB7 EH04B1P	0.022
					Yellow	10	XB7 EH05B1P	0.022
		~ 230	1	–	Red	10	XB7 EH04B2P	0.022
					Green	10	XB7 EH03M1P	0.022
					Red	10	XB7 EH04M1P	0.022
					Yellow	10	XB7 EH05M1P	0.022
					Red	10	XB7 EH04M2P	0.022

(1) For version with Faston connectors (1 x 6.35 mm and 2 x 2.8 mm), add suffix "3" to the above references.
Example: XB7 EV61P3.

▲ Available:
3rd quarter 2005.

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XB7 EV●●P

Pilot lights with BA 9s base fitting

Shape of head	Supply	Description	Supply voltage V	Colour of lens	Sold in lots of	Unit reference	Weight kg
	Direct (2)	For incandescent bulb (not included) (2) BA 9s base fitting	≤ 250	White	10	XB7 EV61P (1)	0.018
				Green	10	XB7 EV63P (1)	0.018
				Red	10	XB7 EV64P (1)	0.018
				Yellow	10	XB7 EV65P (1)	0.018
				Blue	10	XB7 EV66P (1)	0.018
				Clear	10	XB7 EV67P (1)	0.018
				Orange	10	XB7 EV68P (1)	0.018
				White	10	XB7 EV41P (1)	0.020
				Green	10	XB7 EV43P (1)	0.020
	With neon bulb (included) BA 9s base fitting	~ 230 50/60 Hz		Red	10	XB7 EV44P (1)	0.020
				Yellow	10	XB7 EV45P (1)	0.020
				Blue	10	XB7 EV46P (1)	0.020
				Clear	10	XB7 EV47P (1)	0.020
	Direct through resistor	For incandescent bulb 130 V - 2.6 W (included) BA 9s base fitting	~ 230 50/60 Hz	White	10	XB7 EV71P (1)	0.020
				Green	10	XB7 EV73P (1)	0.020
				Red	10	XB7 EV74P (1)	0.020
				Yellow	10	XB7 EV75P (1)	0.020
				Blue	10	XB7 EV76P (1)	0.020
				Clear	10	XB7 EV77P (1)	0.020
				Orange	10	XB7 EV78P (1)	0.020
				White	10	XB7 EV710P	0.020
	130 V - 2.6 W bulb (not included) BA 9s base fitting	~ 230 50/60 Hz		Green	10	XB7 EV730P	0.020
				Red	10	XB7 EV740P	0.020
				Yellow	10	XB7 EV750P	0.020
				Blue	10	XB7 EV760P	0.020
				Clear	10	XB7 EV770P	0.020
	Via integral transformer	With incandescent bulb (6V - 1.2 W) (included) BA 9s base fitting	~ 120 50/60 Hz	White	10	XB7 EV821P	0.020
				Green	10	XB7 EV823P	0.020
				Red	10	XB7 EV824P	0.020
				Yellow	10	XB7 EV825P	0.020
				Blue	10	XB7 EV826P	0.020
				Clear	10	XB7 EV827P	0.020
				White	10	XB7 EV81P	0.020
				Green	10	XB7 EV83P	0.020
				Red	10	XB7 EV84P	0.020
			~ 230 50/60 Hz	Yellow	10	XB7 EV85P	0.020
				Blue	10	XB7 EV86P	0.020
				Clear	10	XB7 EV87P	0.020

Illuminated pushbuttons with BA 9s base fitting

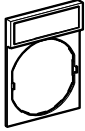
Type of push Shape of head	Supply	Supply voltage V	Type of contact		Colour of lens	Sold in lots of	Unit reference	Weight kg	
			N/O	N/C					
Illuminated pushbuttons, spring return									
	Projecting	Direct supply for BA 9s neon bulb (included)	~ 230	1	—	Green	10	XB7 EW3341P	0.022
						Red	10	XB7 EW3441P	0.022
						Yellow	10	XB7 EW3541P	0.022
	Direct supply for BA 9s incandescent bulb (not included) (2)	≤ 250	1	—	Green	10	XB7 EW3361P	0.020	
					Red	10	XB7 EW3461P	0.020	
					Yellow	10	XB7 EW3561P	0.020	
Illuminated pushbuttons, push-push									
	Projecting	Direct supply for BA 9s neon bulb (included)	~ 230	1	—	Green	10	XB7 EH0341P	0.022
						Red	10	XB7 EH0441P	0.022
						Yellow	10	XB7 EH0541P	0.022
	Direct supply for BA 9s incandescent bulb (not included) (2)	≤ 250	1	—	Green	10	XB7 EH0361P	0.020	
					Red	10	XB7 EH0461P	0.020	
					Yellow	10	XB7 EH0561P	0.020	

(1) For version with Faston connectors (1 x 6.35 mm and 2 x 2.8 mm), add suffix "3" to the above references.

Example: XB7 EV61P3.

(2) Bulb rating for direct supply pilot lights: 250 V max; 2.6 W max.

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ZBY 2101

30 x 40 mm legend holder with legend (black or red background)**With blank legend**

Text	Sold in lots of	Unit reference	Weight kg
Without	10	ZBY 2101	0.001

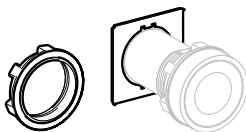
With marked legend (sold singly)

- Start functions: white letters on black background.
- Stop functions: white letters on red background.

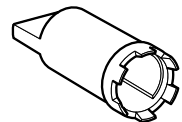
Text	Reference	Weight kg	Text	Reference	Weight kg
Auto	ZBY 2115	0.001	Reset	ZBY 2323	0.001
Down	ZBY 2308	0.001	Reverse	ZBY 2306	0.001
Forward	ZBY 2305	0.001	Right	ZBY 2309	0.001
Hand	ZBY 2316	0.001	Start	ZBY 2303	0.001
Inch	ZBY 2321	0.001	Stop	ZBY 2304	0.001
Left	ZBY 2310	0.001	Up	ZBY 2307	0.001
Off	ZBY 2312	0.001	O	ZBY 2146	0.001
On	ZBY 2311	0.001	I	ZBY 2147	0.001
Power on	ZBY 2326	0.001	O-I	ZBY 2178	0.001

Accessories

Text	Colour	Sold in lots of	Unit reference	Weight kg
Anti-rotation plate	–	10	ZB5 AZ902	0.008
Fixing nut	–	10	ZB5 AZ901	0.002
Bezel tightening tool	–	1	ZB5 AZ905	0.016
Grooved lens caps for BA 9s pilot lights	White	10	ZB7 EV01	0.002
	Green	10	ZB7 EV03	0.002
	Red	10	ZB7 EV04	0.002
	Yellow	10	ZB7 EV05	0.002
	Blue	10	ZB7 EV06	0.002
	Clear	10	ZB7 EV07	0.002
	Orange	10	ZB7 EV08	0.002



ZB5 AZ901 ZB5 AZ902



ZB5 AZ905

Bulbs

Description	Voltage V	Power W	Colour	Sold in lots of	Unit reference	Weight kg
Incandescent bulbs, standard BA 9s base fitting Ø 11 mm max length 28 mm max.	6	1.2	–	100	DL1 CB006NSP	0.002
	24	2.0	–	100	DL1 CE024NSP	0.002
	130	2.4	–	100	DL1 CE130NSP	0.002
Incandescent bulbs, long life BA 9s base fitting Ø 11 mm max length 28 mm max.	6	1.2	–	10	DL1 CB006	0.002
	24	2.0	–	10	DL1 CE024	0.002
	130	2.4	–	10	DL1 CE130	0.002
Neon bulbs BA 9s base fitting Ø 11 mm max length 28 mm max.	220...240	–	Green	10 100	DL1 CS3220 DL1 CS3220SP	0.002 0.002
			Blue	10 100	DL1 CS6220 DL1 CS6220SP	0.002 0.002
			Orange (1)	10 100	DL1 CS7220 DL1 CS7220SP	0.002 0.002



DL1 CE006

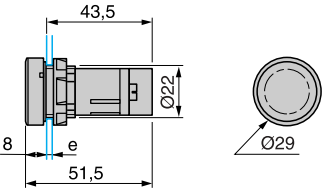


DL1 CS3220

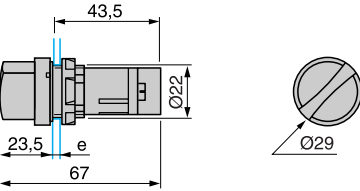
(1) For use with red, yellow or clear pilot light.

Dimensions

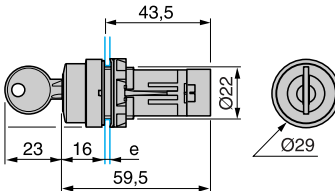
XB7 EA●●P, XB7 EH●●P



XB7 ED●●P

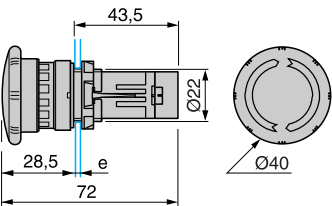


XB7 EG●●P

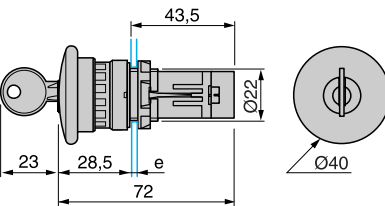


e: panel thickness = 1 to 6 mm

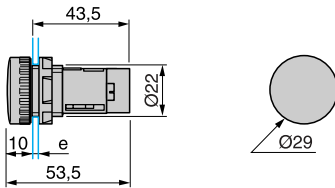
XB7 ES5●●P



XB7 ES1●●P

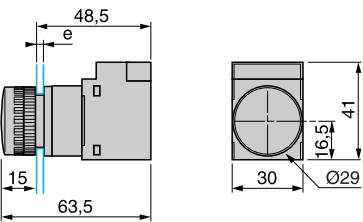


XB7 EV●●P

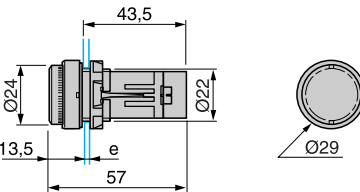


e: panel thickness = 1 to 6 mm

XB7 EV8●P

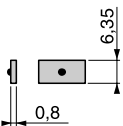


XB7 EW3●●P, XB7 EH0●●P

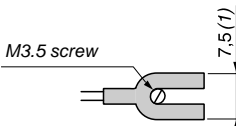


e: panel thickness = 1 to 6 mm

Faston connector



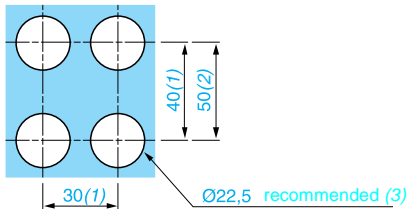
Forked "U" tag connection



(1) Maximum value.

Mounting

Diameter of finished fixing holes



- (1) Minimum value.
(2) For XB7 EV8 ●P.
(3) Standard value: Ø 22.3 (0; + 0.4).