





# Harmony™ XB6/ZB6 16 mm push buttons

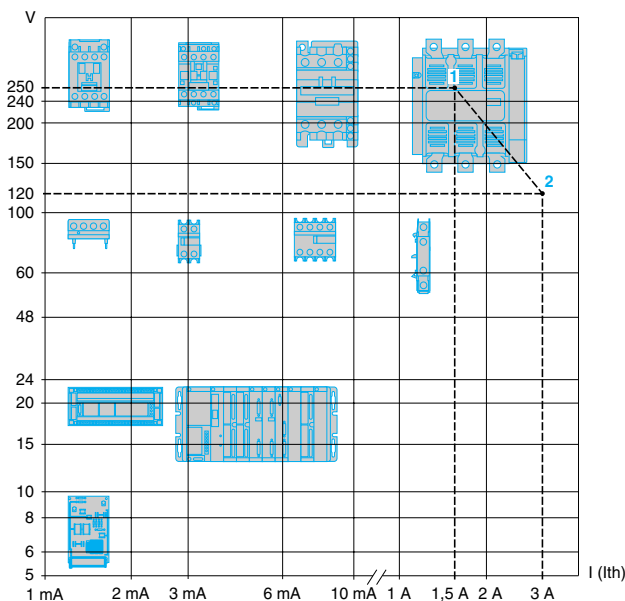
## Environmental specifications

<b>Conforming to standards</b>	 Marked 		IEC 60947-1, IEC 60947-5-1, IEC 60947-5-4, EN 60947-5-1, JIS C 4520 and 852, UL 508, CSA C22.2 No. 14, RoHS compliant (Reduction of Hazardous Substances)
<b>Product certifications</b>	 File E164353 CCN NKCR  File LR 44087 Class 3211 03		UL, CSA ASE, BV, JIS, RINA, LROS, DNV, GL: pending
<b>Protective treatment standard version</b>			"TC"
<b>Ambient air temperature around the device</b>	Storage	°C (°F)	- 40 to +70 (- 40 to +158)
	Operation	°C (°F)	- 25 to +70 (-13 to +158)
<b>Vibration resistance</b>	Conforming to IEC 60068-2-6		(2 to 500 Hz) 3 mm peak to peak or 5 gn
<b>Shock resistance</b>	Conforming to IEC 60068-2-27		Half sine wave 18 ms, 30 gn Half sine wave 11 ms, 50 gn
<b>Electric shock protection</b>	Conforming to IEC 60536 & NF C 20-030		Class II
<b>Degree of protection</b>	Conforming to IEC 60529 & NF C 20-010 Conforming to UL 50 & CSA C22.2 No. 94		IP 65 Type 1, 4, 4X and 12 (not for key selector switches)
<b>Mechanical durability (in operating cycles)</b>	Spring return push buttons		2 million
	Maintained push buttons		300,000
	Key operated selector switches		200,000
	Handle operated selector switches		500,000
<b>Mounting positions</b>			All

## Electrical specifications of LED pilot lights

<b>Voltage limits</b>			6 - 30 Vac/Vdc
<b>Current draw</b>		<b>mA</b>	15
<b>Surge withstand</b>	Conforming to IEC 61000-4-5	<b>kV</b>	2/1
<b>Resistance to fast transients</b>	Conforming to IEC 61000-4-4	<b>kV</b>	2
<b>Resistance to electromagnetic fields</b>	Conforming to IEC 61000-4-3	<b>V/m</b>	10
<b>Resistance to electrostatic discharges</b>	Conforming to IEC 61000-4-2	<b>kV</b>	8/6
<b>Electromagnetic emission</b>	Conforming to IEC 55011		Class B
<b>Service life</b>	At nominal voltage and 25 °C ambient		100,000 hrs

Electrical specifications of contacts			
Rated operational specifications	AC-15		B300, Ue = 240 Vac and Ie = 1.5 A or Ue 120 Vac and Ie = 3 A
	DC-13		R300, Ue = 250 Vdc and Ie = 0.1 A or Ue = 125 Vdc and Ie = 0.22 A
Rated insulation voltage	Conforming to IEC 60947-1		Ui = 250 V Degree of pollution 3 (Except pilot lights with incandescent or neon bulb: degree of pollution 2)
Rated impulse withstand voltage	Conforming to EN/IEC 60947-1	kV	Uimp = 4
Contact material	Normal environment and usage		Silver alloy
	Chemically corrosive environment or infrequent operation		Gold
Contact operation	N/C or N/O		Slow break, with indication of change of state by the tactile feedback on push and audibility
Differential travel of contacts	With push button head	in (mm)	Changing N/C state: 0.04 (1.0) Changing N/O state: 0.08 (2.0) Total travel: 0.14 (3.5)
Operating force	N/C contact	lbf (N)	0.56 (2.5)
	N/O contact	lbf (N)	0.36 (1.6)
	Push button head + N/O contact	lbf (N)	0.79 (3.5)
	Push button head + N/C contact	lbf (N)	1.01 (4.5)
Positive operation	Conforming to IEC 60947-5-2	lbf (N)	N/C contact with positive opening operation Positive opening force: 3.38 (15)
Terminal referencing	Conforming to EN 50005 and EN 50013		
Short-circuit protection	Cartridge fuse mounted upstream		6 A gG, 6 A Class CC, Bussman KTK-R
Electrical reliability	Failure rate Conforming to IEC 60947-5-4		With confidence level of 90 %: $\lambda_{90} = 10^{-8}$ 5 V - 1 mA, defect contact voltage drop = 0.5 V
Cabling		in (mm)	By Quick Connectors/Solder tabs 0.11 x 0.02 (2.8 x 0.5) By pins for printed circuit board connection 0.04 x 0.02 (1 x 0.5)
Electrical durability	Conforming to IEC 947-5-1 Appendix C Utilization category AC-15 and DC-13 Operating rate 3600 operating cycles/h Load factor 0.5		1 million operating cycles - 200 VA-230 V



- Switching capacity conforming to EN/IEC 60947-5-1, utilization category AC-15, DC-13  

B300	240 Vac	1.5 A
R300	250 Vdc	0.1 A
- Switching capacity conforming to EN/IEC 60947-5-1, utilization category AC-15, DC-13  




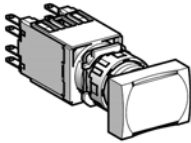
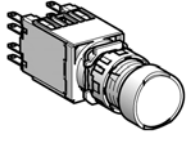
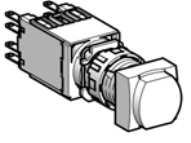
B300	120 Vac	3 A
R300	125 Vdc	0.22 A

# Harmony™ XB6/ZB6

## 16 mm push buttons

Complete units

### Illuminated Push Buttons (12–24 Vac/Vdc LED included) Complete Units with Quick Connectors/Solder Tabs

Type of Operator	Type of Contact		Color			
	N.O.	N.C.		Rectangular Reference	Square Reference	Round Reference
 XB6DW***B	1	—	White	XB6DW1B1B	XB6CW1B1B	XB6AW1B1B
			Green	XB6DW3B1B	XB6CW3B1B	XB6AW3B1B
			Yellow	XB6DW5B1B	XB6CW5B1B	XB6AW5B1B
			Blue	XB6DW6B1B	XB6CW6B1B	XB6AW6B1B
	—	1	Red	XB6DW4B2B	XB6CW4B2B	XB6AW4B2B
			White	XB6DW1B5B	XB6CW1B5B	XB6AW1B5B
			Green	XB6DW3B5B	XB6CW3B5B	XB6AW3B5B
			Red	XB6DW4B5B	XB6CW4B5B	XB6AW4B5B
	1	1	Yellow	XB6DW5B5B	XB6CW5B5B	XB6AW5B5B
			Blue	XB6DW6B5B	XB6CW6B5B	XB6AW6B5B
			White	XB6DF1B1B	XB6CF1B1B	XB6AF1B1B
			Green	XB6DF3B1B	XB6CF3B1B	XB6AF3B1B
 XB6AF***B	—	1	Yellow	XB6DF5B1B	XB6CF5B1B	XB6AF5B1B
			Blue	XB6DF6B1B	XB6CF6B1B	XB6AF6B1B
			Red	XB6DF4B2B	XB6CF4B2B	XB6AF4B2B
			White	XB6DF1B5B	XB6CF1B5B	XB6AF1B5B
	1	1	Green	XB6DF3B5B	XB6CF3B5B	XB6AF3B5B
			Red	XB6DF4B5B	XB6CF4B5B	XB6AF4B5B
			Yellow	XB6DF5B5B	XB6CF5B5B	XB6AF5B5B
			Blue	XB6DF6B5B	XB6CF6B5B	XB6AF6B5B
 XB6CE***B	1	—	White	XB6DE1B1B	XB6CE1B1B	XB6AE1B1B
			Green	XB6DE3B1B	XB6CE3B1B	XB6AE3B1B
			Yellow	XB6DE5B1B	XB6CE5B1B	XB6AE5B1B
			Blue	XB6DE6B1B	XB6CE6B1B	XB6AE6B1B
	—	1	Red	XB6DE4B2B	XB6CE4B2B	XB6AE4B2B
			White	XB6DE1B5B	XB6CE1B5B	XB6AE1B5B
			Green	XB6DE3B5B	XB6CE3B5B	XB6AE3B5B
			Red	XB6DE4B5B	XB6CE4B5B	XB6AE4B5B
	1	1	Yellow	XB6DE5B5B	XB6CE5B5B	XB6AE5B5B
			Blue	XB6DE6B5B	XB6CE6B5B	XB6AE6B5B

Illuminated Push Buttons 120 Vac LED are available as Complete Units with Quick Connectors/Solder Tabs. Use 12–24 V table above. Change Voltage Code (2nd B) to "G". Example: XB6DW1B1B (White 24 V, 1 N.O.) becomes XB6DW1G1B. For Legends, see pages 22 and 24.

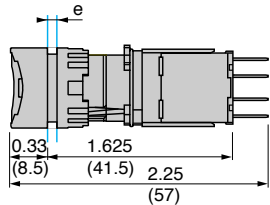
## Push buttons (illuminated and non illuminated)

### Rectangular head

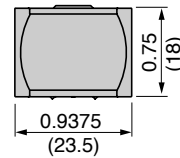
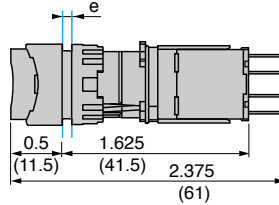
**XB6DW●●●●, DF●●●●, DA●●**

**XB6DE●●●●**

Common face view



e: panel thickness  
1 to 6 mm

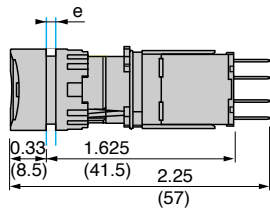


### Square head

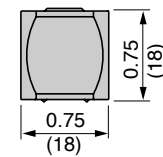
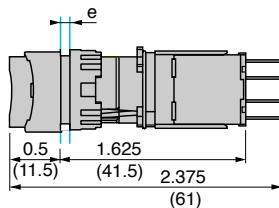
**XB6CW●●●●, CF●●●●, CA●●**

**XB6CE●●●●**

Common face view



e: panel thickness  
1 to 6 mm

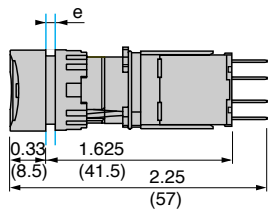


### Circular head

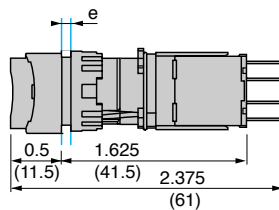
**XB6AW●●●●, AF●●●●, AA●●**

**XB6AE●●●●**

Common face view



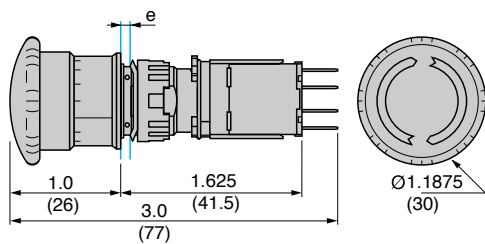
e: panel thickness  
1 to 6 mm



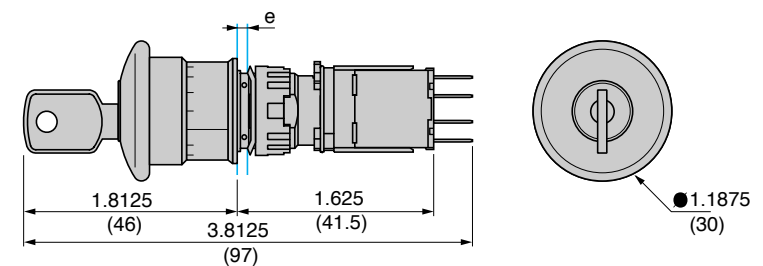
## Mushroom head push buttons

**XB6AS8349B**

**XB6AS9349B**



e: panel thickness 1 to 6 mm



## Pilot lights

**Common side view**

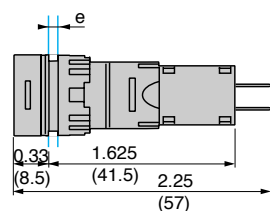
**XB6DV●●●, XB6CV●●●**

**Rectangular head**

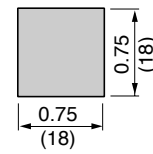
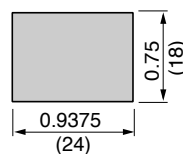
**XB6DV●●●**

**Square head**

**XB6CV●●●**

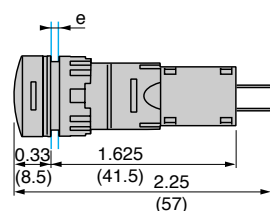


e: panel thickness  
1 to 6 mm

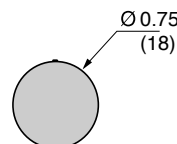


### Circular head

**XB6AV●●●**



e: panel thickness  
1 to 6 mm



Dual Dimensions: in (mm)