







Push Button Selection Guide

Family	XB4	XB5	XB7	9001K	9001SK	9001KX
						
Type of Product	*22 mm Push Button (metal)	**22 mm Push Button (plastic)	***22mm Push Button (plastic)	****30 mm Push Button (metal)	****30 mm Push Button (plastic)	****30 mm Push Button (metal, square)
Mounting Hole Diameter	22.5 mm	22.5 mm	22.5 mm	31 mm (1.22 in)	31 mm (1.22 in)	31 mm (1.22 in)
Approvals	UL Listed File E164353, CCN NKCR UL Recognized File E164353, CCN NKCR2	UL Listed File E164353, CCN NKCR UL Recognized File E164353, CCN NKCR2	UL File E164353, CCN NKCR	UL File E78403, CCN NKCR	UL File E78403, CCN NKCR	UL File E78403, CCN NKCR
	CSA File LR44087, Class 3211-03	CSA File LR44087, Class 3211-03	CSA File LR44087-122 Class 3211-03	CSA File LR25490, Class 3211-03	CSA File LR25490, Class 3211-03	CSA File LR25490, Class 3211-03
Conforming to Standards	CE Marked RoHS Compliant	CE Marked RoHS Compliant	CE Marked RoHS Compliant	CE Marked RoHS Compliant	CE Marked RoHS Compliant	CE Marked RoHS Compliant
	EN/IEC 60947-1, EN/IEC 60947-5-1, EN/IEC 60947-5-4, EN/IEC 60947-5-5	EN/IEC 60947-1, EN/IEC 60947-5-1, EN/IEC 60947-5-4, EN/IEC 60947-5-5	EN/IEC 60947-1, EN/IEC 60947-5-1 for push buttons, pilot lights, illuminated push buttons and selector switches EN/IEC 60947-1, EN/IEC 60947-5-1, EN/IEC 60947-5-5,	EN/IEC 60947-1	EN/IEC 60947-1	
	EN/IEC 60204-1 and EN/ISO 13850:2006 (trigger action and mechanical latching emergency stop push buttons)	EN/IEC 60204-1 and EN/ISO 13850:2006 (trigger action and mechanical latching emergency stop push button).	EN/IEC 60204-1 and EN/ISO 13850 for Emergency Stop trigger action push buttons	EN/IEC60947-5-1	EN/IEC60947-5-1	
	EN/IEC 60364-5-53 (emergency switching of mechanical latching push buttons)	EN/IEC 60364-5-53 (emergency switching of mechanical latching push buttons)		EN/IEC60947-5-4	EN/IEC60947-5-4	
	—	EN81-1 (emergency stop trigger action and mechanical latching push buttons with mechanical state indicator)				
	JIS C 4520	JIS C 4520		JIS C 4520 and 852	JIS C 4520 and 852	
	UL 508	UL 508	UL 508	UL 508	UL 508	
	CSA C22.2 No.14	CSA C22.2 No.14	CSA C22.2 No.14	CSA C22.2 No.14	CSA C22.2 No.14	
	GOST	GOST				
	CCC	CCC	CCC			
Degree of Protection	IP65	IP65	IP54, IP65	IP65	IP65	IP66
	IP66 for booted	IP66 for booted	—	—	—	—
	NEMA 1, 2, 3, 4, 4X, 12, 13	NEMA 1, 2, 3, 3R, 4, 4X, 12, 13	NEMA 3, 4, 12	NEMA 1, 2, 3, 3R, 4, 12, 13	NEMA 1, 2, 3, 3R, 4, 4X, 12, 13	NEMA 1, 2, 3, 3R, 4, 12, 13
Operating Temperature F° (C°)	-13 to 158 (-40 to 70) LED and Neon -13 to 131 (-25 to 55) Incandescent	-13 to 158 (-40 to 70) LED and Neon -13 to 131 (-25 to 55) Incandescent	-13 to 158 (-25 to 70)	-22 to 140 (-30 to 60)	-22 to 140 (-30 to 60)	-22 to 140 (-30 to 60)
Storage Temperature F° (C°)	-40 to 158 (-40 to 70)	-40 to 158 (-40 to 70)	-40 to 158 (-40 to 70)	-40 to 158 (-40 to 70)	-40 to 158 (-40 to 70)	-40 to 158 (-40 to 70)
Electric Shock Protection	Class I	Class I	—	Class II	Class II	Class II
Electrical Consumption						
	24 Vac/Vdc: 18 mA 120 Vac: 14 mA	24 Vac/Vdc: 18 mA 120 Vac: 14 mA	Illuminated Push Buttons: 24V - 18mA 120V - 12mA 230V - 22mA Pilot Lights 24V - 20mA 120V - 18mA 230V - 16mA	Incandescent and LED bulbs. For ratings, see Standard Light Modules, page 19-91.	Incandescent and LED bulbs. For ratings, see Standard Light Modules, page 19-91.	—
	240 Vac: 14 mA	240 Vac: 14 mA				
Rated Operational Characteristics	AC-15; B600 Ue = 600 Vac and Ie = 1.2 A Ue = 240 Vac and Ie = 3 A Ue = 120 Vac and Ie = 6 A Continuous 10 A	AC-15; B600 Ue = 600 Vac and Ie = 1.2 A Ue = 240 Vac and Ie = 3 A Ue = 120 Vac and Ie = 6 A Continuous 10 A	AC-14; D300 Ue = 240 Vac and Ie = 0.3A Ue = 120 Vac and Ie = 0.6A Continuous 4 A	AC-15; A600 Continuous 10 A	AC-15; A600 Continuous 10 A	AC-15; A600 Continuous 10 A
	DC-13; Q600 Ue = 600 Vdc and Ie = 0.1 A Ue = 250 Vdc and Ie = 0.27 A Ue = 125 Vdc and Ie = 0.55 A	DC-13; Q600 Ue = 600 Vdc and Ie = 0.1 A Ue = 250Vdc and Ie = 0.27 A Ue = 125 Vdc and Ie = 0.55 A	DC-13; R300 Ue = 250 Vdc and Ie = 0.1A Ue = 125 Vdc and Ie = 0.22A	DC-13; Q600 Ue = 600 Vdc and Ie = 0.1 A Ue = 250 Vdc and Ie = 0.27 A Ue = 125 Vdc and Ie = 0.55 A	DC-13; Q600 Ue = 600 Vdc and Ie = 0.1 A Ue = 250 Vdc and Ie = 0.27 A Ue = 125 Vdc and Ie = 0.55 A	DC-13; Q600 Ue = 600 Vdc and Ie = 0.1 A Ue = 250 Vdc and Ie = 0.27 A Ue = 125 Vdc and Ie = 0.55 A
Connection Type	IP20 Fingersafe Screw or Spring Terminal Screw Terminal:	Spring Terminal:	Screw and captive clamp terminal connections Faston clip connections (pilot lights)	IP20 Fingersafe Screw Terminal		
Cable Size	1 x 24 AWG (0.22 mm ²) min. 2 x 14 AWG (2.5 mm ²) max. 2 x 16 AWG (1.5 mm ²) max.	1 x 24 AWG (0.22 mm ²) min. 2 x 14 AWG (2.5 mm ²) max. 2 x 16 AWG (1.5 mm ²) max.		1 x 24 AWG (0.22 mm ²) min. 2 x 16 AWG (1.5 mm ²) max	1 x 24 AWG (0.22 mm ²) min. 2 x 16 AWG (1.5 mm ²) max	1 x 24 AWG (0.22 mm ²) min. 2 x 16 AWG (1.5 mm ²) max
Digest Location	XB4, page 19-24	XB5, page 19-43	XB7, page 19-68	Type K, page 19-72	Type SK, page 19-82	KX, page 19-102

XB4–XB5 Common Operators

Table 19.1: BLACK—Start Push Buttons (flush head)





Operator Style	Description	Contact Block	Type	Legend Plate
XB4 Die Cast Chrome		 1 N.O.	XB4BA21	ZBY2303
XB5 Double Insulated		 1 N.O.	XB5AA21	ZBY2303

Table 19.2: RED—Stop Push Buttons (extended head)





Operator Style	Description	Contact Block	Type	Legend Plate
XB4 Die Cast Chrome		 1 N.C.	XB4BL42	ZBY2304
XB5 Double Insulated		 1 N.C.	XB5AL42	ZBY2304

Table 19.3: BLACK—Off-On Selector Switch





Operator Style	Description	Contact Block	Type	Legend Plate
XB4 Die Cast Chrome		 1 N.O.	XB4BD21	ZBY2367
XB5 Double Insulated		 1 N.O.	XB5AD21	ZBY2367

Table 19.4: Hand-Off-Auto Selector Switch





Operator Style	Description	Contact Block	Type	Legend Plate
XB4 Die Cast Chrome		 2 N.O.	XB4BD33	ZBY2387
XB5 Double Insulated		 2 N.O.	XB5AD33	ZBY2387

Table 19.5: RED—120 Vac LED—On Pilot Light



Operator Style	Description	Contact Block	Type	Legend Plate
XB4 Die Cast Chrome		120 Vac Red LED	XB4BVG4	ZBY2311
XB5 Double Insulated		120 Vac Red LED	XB5AVG4	ZBY2311

Table 19.6: GREEN—120 Vac LED—Off Pilot Light



Operator Style	Description	Contact Block	Type	Legend Plate
XB4 Die Cast Chrome		120 Vac Green LED	XB4BVG3	ZBY2312
XB5 Double Insulated		120 Vac Green LED	XB5AVG3	ZBY2312

Table 19.7: RED—40 mm Mushroom Stop (Push-Pull)









Operator Style	Description	Contact Block	Type	Legend Plate
XB4 Die Cast Chrome		 1 N.C.	XB4BT42	ZBY9330
XB5 Double Insulated		 1 N.C.	XB5AT42	ZBY9330

Table 19.8: RED—40 mm Mushroom Emergency Stop (Trigger Action, Turn-to-Release)

Operator Style	Description	Contact Block	Type	Legend Plate 60 mm Round
XB4 Die Cast Chrome		 1 N.O. / 1 N.C.	XB4BS8445	ZBY9330
XB5 Double Insulated		 1 N.O. / 1 N.C.	XB5AS8445	ZBY9330

When ordering, please specify:

Quantity
Type or Catalog Number



XB5AVB1

Table 19.131: Pilot Lights with Protected LED™ (screw clamp terminal connections) [44]

Shape of Head	Supply Voltage	Color	Catalog Number	Components
	24 Vac/Vdc	White	XB5AVB1	(ZB5AVB1 + ZB5AV013)
		Green	XB5AVB3	(ZB5AVB3 + ZB5AV033)
		Red	XB5AVB4	(ZB5AVB4 + ZB5AV043)
		Yellow	XB5AVB5	(ZB5AVB5 + ZB5AV053)
		Blue	XB5AVB6	(ZB5AVB6 + ZB5AV063)
		White	XB5AVG1	(ZB5AVG1 + ZB5AV013)
	110–120 Vac	Green	XB5AVG3	(ZB5AVG3 + ZB5AV033)
		Red	XB5AVG4	(ZB5AVG4 + ZB5AV043)
		Yellow	XB5AVG5	(ZB5AVG5 + ZB5AV053)
		Blue	XB5AVG6	(ZB5AVG6 + ZB5AV063)



XB5AV63



XB5AV34

Table 19.132: Pilot Lights for BA9s Bulb (screw clamp terminal connections)

Shape of Head	Supply Voltage	Color	Catalog Number	Components
Direct supply, for BA9s (incandescent, LED, neon) V < 250 V, 2.4 W bulb (bulb not included) [45]				
	< 250 Vac/Vdc	White	XB5AV61	(ZB5AV6 + ZB5AV01)
		Green	XB5AV63	(ZB5AV6 + ZB5AV03)
		Red	XB5AV64	(ZB5AV6 + ZB5AV04)
		Yellow	XB5AV65	(ZB5AV6 + ZB5AV05)
Transformer type with 1.2 VA, 6 V secondary. BA9s incandescent bulb included				
	110–120 Vac 50/60 Hz	White	XB5AV31	(ZB5AV3 + ZB5AV01)
		Green	XB5AV33	(ZB5AV3 + ZB5AV03)
		Red	XB5AV34	(ZB5AV3 + ZB5AV04)
		Yellow	XB5AV35	(ZB5AV3 + ZB5AV05)

Table 19.133: Illuminated Push Buttons, Momentary (screw clamp terminal connections) [44]

Shape of Head	Description	Type of Contact		Supply Voltage	Color of Push	Catalog Number	Components					
		N.O.	N.C.									
Flush												
	Direct supply for BA9s 2.4 W max. bulb not included	1	1	24 Vac/Vdc	White	XB5AW31B5	(ZB5AW0B15 + ZB5AW313)					
					Green	XB5AW33B5	(ZB5AW0B35 + ZB5AW333)					
					Red	XB5AW34B5	(ZB5AW0B45 + ZB5AW343)					
					Yellow	XB5AW35B5	(ZB5AW0B55 + ZB5AW353)					
					Blue	XB5AW36B5	(ZB5AW0B65 + ZB5AW363)					
					White	XB5AW31G5	(ZB5AW0G15 + ZB5AW313)					
				110–120 Vac	Green	XB5AW33G5	(ZB5AW0G35 + ZB5AW333)					
					Red	XB5AW34G5	(ZB5AW0G45 + ZB5AW343)					
					Yellow	XB5AW35G5	(ZB5AW0G55 + ZB5AW353)					
					Blue	XB5AW36G5	(ZB5AW0G65 + ZB5AW363)					
					< 250 Vac/Vdc	White	XB5AW3165	(ZB5AW065 + ZB5AW31)				
						Green	XB5AW3365	(ZB5AW065 + ZB5AW33)				
Red	XB5AW3465	(ZB5AW065 + ZB5AW34)										
Yellow	XB5AW3565	(ZB5AW065 + ZB5AW35)										
	Transformer type 1.2 VA, 6 V secondary. BA9s incandescent bulb included	1	1	110–120 Vac 50/60 Hz	White	XB5AW3135	(ZB5AW035 + ZB5AW31)					
					Green	XB5AW3335	(ZB5AW035 + ZB5AW33)					
					Red	XB5AW3435	(ZB5AW035 + ZB5AW34)					
					Yellow	XB5AW3535	(ZB5AW035 + ZB5AW35)					
					230–240 Vac 50/60 Hz	White	XB5AW3145	(ZB5AW045 + ZB5AW31)				
						Green	XB5AW3345	(ZB5AW045 + ZB5AW33)				
				Red		XB5AW3445	(ZB5AW045 + ZB5AW34)					
				Yellow		XB5AW3545	(ZB5AW045 + ZB5AW35)					
				Extended								
						Direct supply for BA9s 2.4 W max. bulb not included	1	1	24 Vac/Vdc	White	XB5AW11B5	(ZB5AW0B15 + ZB5AW113)
					Green					XB5AW13B5	(ZB5AW0B35 + ZB5AW133)	
					Red					XB5AW14B5	(ZB5AW0B45 + ZB5AW143)	
Yellow	XB5AW15B5	(ZB5AW0B55 + ZB5AW153)										
Blue	XB5AW16B5	(ZB5AW0B65 + ZB5AW163)										
White	XB5AW11G5	(ZB5AW0G15 + ZB5AW113)										
110–120 Vac	Green	XB5AW13G5	(ZB5AW0G35 + ZB5AW133)									
	Red	XB5AW14G5	(ZB5AW0G45 + ZB5AW143)									
	Yellow	XB5AW15G5	(ZB5AW0G55 + ZB5AW153)									
	Blue	XB5AW16G5	(ZB5AW0G65 + ZB5AW163)									

For legends, see XB5 Legend Holders, page 19-58 and XB5 Legend Inserts Only, page 19-59.

[44] For 240V LED, replace the "B" or "G" with "M". (Example: XB5APVB1 (24 V) to XB5APVM1 (240 Vac only))

[45] For bulb information, refer to Table 19.183 BA9s Bulbs and Associated Accessories, page 19-61