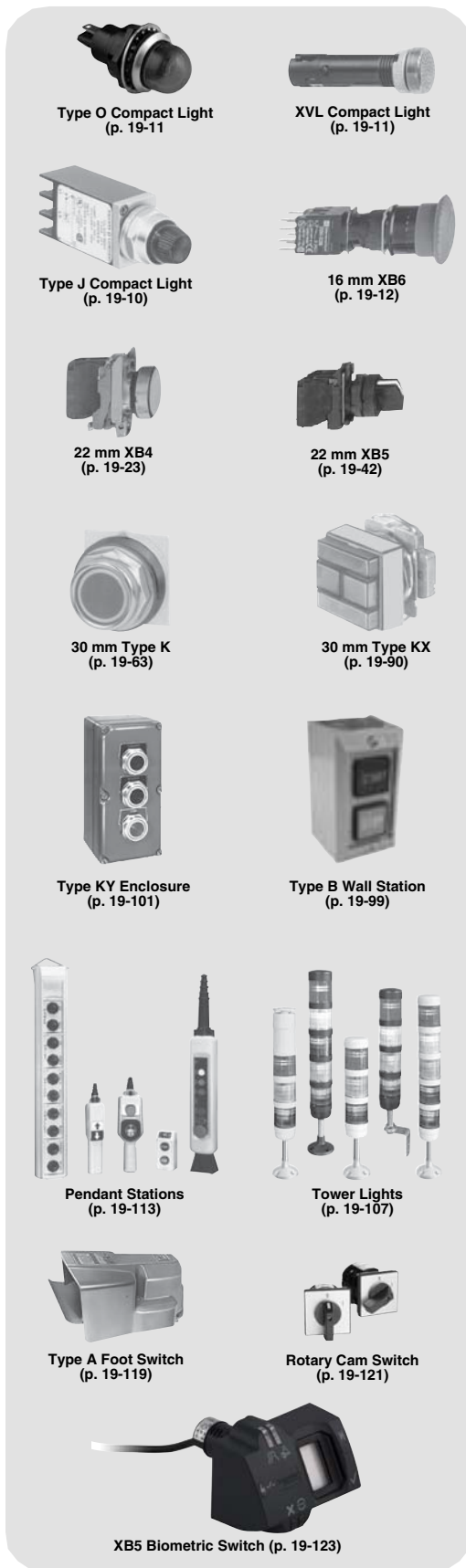


Push Buttons and Operator Interface



Product Panorama

Push Buttons	19-2
Control Stations	19-4
Pendant Stations	19-5
Tower Lights	19-6

22 and 30 mm Most Common Complete Operators

Class 9001 Type K, SK (30 mm) and XB4, XB5 (22 mm) most common complete operators assembled with contact blocks and suggested legend plates. Start-Stop, Hand-Off-Auto, and other configurations are offered in this simplified quick selector. **19-8**

Compact Pilot Lights

The Compact Pilot Light ranges include the **Type J** incandescent, push-to-test types; the **Type O** low-cost incandescent; and the **XVL** miniature LED type. **19-10**

16 mm Push Buttons

XB6 16 mm Push Buttons, selector switches, and pilot lights with a plastic bezel are intended for machine adjustment and setup. **19-12**

22 mm Push Buttons

XB4 22 mm Push Buttons, selector switches, and pilot lights with a metal bezel are designed for industrial applications. They combine ease of installation and robustness. **19-23**

XB5 22 mm, the plastic version of the XB4 unit, is particularly suited to applications requiring a resistance to chemical agents and/or double electrical insulation. **19-42**

XB5 Biometric Switches **19-123**

30 mm Push Buttons

Class 9001 Type K Heavy Duty Oiltight/Watertight Push Buttons are intended primarily for machine tool and industrial applications. **19-63**

Class 9001 Type SK Non-Metallic Watertight operators are designed for use in highly corrosive areas. **19-73**

Class 9001 Type KX operators are Square Multifunction Control Units that mount in a Type K mounting hole. This highly versatile line saves space by combining push buttons and pilot lights into one common operator. **19-90**

Control Stations and Enclosures

XAL control stations are available pre-assembled or custom assembled. These control stations use push buttons and pilot lights from the **XB5 22 mm** range. **XAP** enclosures are available in glass reinforced polyester, die cast metal and flush mount. **19-96**

Type B Standard Duty Control Stations in 1, 2, and 3 button configurations are available as predetermined complete stations. **19-99**

Class 9001 Type KY Heavy Duty Control Stations are ideally suited for commercial and industrial applications. Available in die cast metal, stainless steel, sheet steel, and gloss reinforced polyester. **19-101**

Tower Lights

Tower Lights and Beacons. **XVB, XVC, XVE, and XVP tower lights and beacons** provide long distance indication of the operation status or sequences of a machine with lights or buzzers. **19-107**

Pendant Stations







Our full line of pendant stations for most crane and hoist applications range from the light to medium duty **BW** and **XAC** pendants to the heavy duty **SKYP** pendants. **19-113**

Foot Switches






The **Type A** foot switch is a heavy duty industrial foot switch which can be used in a variety of industrial applications. **19-119**

Rotary Cam Switches

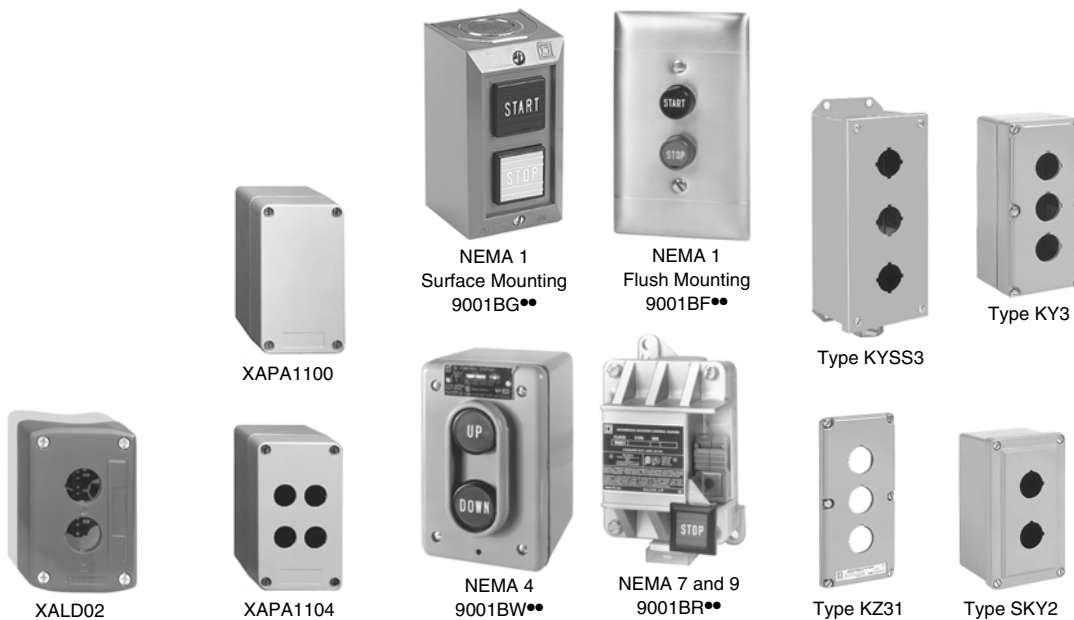
K2 and K30-K150 Rotary Cam Switches. Miniature, Custom, and Power Switching Cam Switches provide an inexpensive and versatile means of switching from 10 A logic control through 150 A power switching. **19-121**

Family	XVL	Type O	Type J	XB6
	 XVLA1**			
	 XVLA2**			
	 XVLA3**			

Type of Product	Mini Pilot Light	Compact Pilot Light	Compact Pilot Light	16 mm Push Button (plastic)
Mounting Hole Diameter	8 mm / 12 mm	17.5 mm (0.68 in)	17.5 mm (0.68 in)	16.2 mm
Approvals	UL Recognized File E164353, CCN NKCR CSA File LR44078, Class 3211-03	UL Recognized File E179183, CCN NKCR CSA File LR25490, Class 3211-03	UL File E78403, CCN NKCR CSA File LR25490, Class 3211-03	UL File E164353, CCN NKCR CSA File LR44087, Class 3211-03
Conforming to Standards	IEC337-2 NF C 63-140 VDE 0660-200			CE marked EN/IEC 60947-1, EN/IEC 60947-5-1, EN/IEC 60947-5-5 EN/IEC 60204-1 and EN/ISO 13850: 2006 (trigger action and mechanical latching Emergency Stop push buttons) JIS C 4520 and 853 UL 508 and CSA C22-2 no. 14
Degree of Protection	IP40 (IP65 with seal)	NEMA 13	NEMA 4, 13	IP65 NEMA 1, 4, 4X, 12
Electric Shock Protection				
Electrical Consumption				
LED	25 mA			6-30 Vac/Vdc: 15 mA 48-120 Vac: 20 mA
Rated Operational Characteristics				AC-15; B300 Ue = 240 Vac and Ie = 1.5A Ue = 120 Vac and Ie = 3 A Continuous 5 A DC-13; R300 Ue = 250 Vdc and Ie = 0.1 A Ue = 125 Vdc and Ie = 0.22 A
Connection Type	XVLA1** and XVLA2** = 2.8mm x 0.5mm Faston XVLA3** = Screw Terminals	Faston	Screw Terminal —	Quick Connect/ Solder Tabs 0.11 x 0.02 in. (2.8 x 0.5 mm)
Cable Size	1 x 1.5 mm ² max.		2 x 14 AWG (copper only)	
Digest Page	19-11	19-11	19-10	19-13

Family	XB4	XB5	9001K	9001SK	9001KX
					
Type of Product	22 mm Push Button (metal)	22 mm 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	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 CSA File LR44087, Class 3211-03	UL Listed File E164353, CCN NKCR UL Recognized File E164353, CCN NKCR2 CSA File LR44087, Class 3211-03	UL File E78403, CCN NKCR CSA File LR25490, Class 3211-03	UL File E78403, CCN NKCR CSA File LR25490, Class 3211-03	UL File E78403, CCN NKCR CSA File LR25490, Class 3211-03
Conforming to Standards	CE Marked EN/IEC 60947-1, EN/IEC 60947-5-1, EN/IEC 60947-5-4, EN/IEC 60947-5-5 EN/IEC 60204-1 and EN/ISO 13850: 2006 (trigger action and mechanical latching emergency stop push buttons) EN/IEC 60364-5-53 (emergency switching of mechanical latching push buttons) — JIS C 4520 UL 508 CSA C22.2 No.14	CE Marked EN/IEC 60947-1, EN/IEC 60947-5-1, EN/IEC 60947-5-4, EN/IEC 60947-5-5 EN/IEC 60204-1 and EN/ISO 13850: 2006 (trigger action and mechanical latching emergency stop push button). EN/IEC 60364-5-53 (emergency switching of mechanical latching push buttons) EN81-1 (emergency stop trigger action and mechanical latching push buttons with mechanical state indicator) JIS C 4520 UL 508 CSA C22.-2 No.14	CE Marked EN/IEC 60947-1 EN/IEC60947-5-1 EN/IEC60947-5-4 JIS C 4520 and 852 UL 508 CSA C22.2 No.14	CE Marked EN/IEC 60947-1 EN/IEC60947-5-1 EN/IEC60947-5-4 JIS C 4520 and 852 UL 508 CSA C22.2 No.14	CE Marked EN/IEC 60947-1 EN/IEC60947-5-1 EN/IEC60947-5-4 JIS C 4520 and 852 UL 508 CSA C22.2 No.14
Degree of Protection	IP65 IP66 for booted NEMA 1, 2, 3, 4, 12, 13	IP65 IP66 for Booted NEMA 1, 2, 3, 4, 4X, 12, 13	IP66 NEMA 1, 2, 3, 3R, 4, 12, 13	IP66 NEMA 1, 2, 3, 3R, 4, 4X, 12, 13	IP66 NEMA 1, 2, 3, 3R, 4, 4X, 12, 13
Electric Shock Protection	Class I	Class I	Class II	Class II	Class II
Electrical Consumption					
LED	24 Vac/Vdc: 18 mA 120 Vac: 14 mA 240 Vac: 14 mA	24 Vac/Vdc: 18 mA 120 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 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	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 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	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	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	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
Connection Type	Screw or Spring Terminal		Screw Terminal		
	Screw Terminal:	Spring 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 Page	19-23	19-42	19-63	19-73	19-90

Family	XAL	XAP	9001B	9001KY/SKY
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Type of Product/Material	XALD—Polycarbonate XALK—Polycarbonate	XAPA—glass filled polyester XAPG—die cast zinc XAPE—anodized aluminum	9001BG—plastic cover 9001BF—stainless steel 9001BW—die cast zinc 9001BR—cast aluminum	KYAF—sheet steel KYSS—stainless steel KY—die cast zinc KZ—die cast zinc SKY—Plastic
Number of holes	1 to 3	0 to 16	1 to 3	1 to 6
Type of Operators	XB5 (22mm)	XB5 (22mm)	Built in	9001K/SK (30mm)
Available without Operators	Yes	Yes	No	Yes
Available with Operators	Yes	No	Yes	Yes
Approvals	UL File E164353 CCN NKCR CSA File LR 44087 Class 3211-03	UL File E164353 CCN NKCR CSA File LR 44087 Class 3211-03	UL File E78403 CCN NKCR CSA File LR 25490 Class 3211-03	UL File E78403 CCN NKCR CSA File LR 25490 Class 3211-03
Conforming to Standards	CE Marked EN/IEC 60947-1, EN/IEC 60947-5-1, EN/IEC 60947-5-4, JIS C 4520 UL 508 CSA C22.2 No.14	CE Marked EN/IEC 60947-1, EN/IEC 60947-5-1, EN/IEC 60947-5-4, JIS C 4520 UL 508 CSA C22.2 No.14	CE Marked EN/IEC 60947-1, EN/IEC 60947-5-1, EN/IEC 60947-5-4, JIS C 4520 UL 508 CSA C22.2 No.14	CE Marked EN/IEC 60947-1, EN/IEC 60947-5-1, EN/IEC 60947-5-4, JIS C 4520 UL 508 CSA C22.2 No.14
Cable Entry	No. 13 knock out	XAPA—undrilled XAPG—Tapped 3/4NPT XAPE—flush mount (n/a)	9001BG—1/2 & 3/4 knockout 9001BF—N/A 9001BW—1/2-14NPT 9001BR—1/2-14NPT	KYAF— KYSS—G conduit hub KY— KZ—1/2 & 3/4 knockout SKY—G conduit hub
Digest Page	19-96	19-96	19-99	19-101

Family	9001BW	XACA2	XACA0	9001SKYP
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Type of Product	2-Button Pendant	2-Button Pistol Grip Pendant	General Purpose Pendant	Heavy Duty Pendant
Number of operators	2	2	2, 3, 4, 6, 8, 12	2, 4, 6, 8, 10
Approvals	UL File E78403 CNN NKCR CSA File LR25490 Class 3211-03	UL File E164353 CNN NKCR CSA File LR 44087 Class 3211-03	UL File E164353 CNN NKCR CSA File LR 44087 Class 3211-03	UL File E78403 CNN NKCR CSA File LR25490 Class 3211-03
Conforming to Standards	CE Marked	EN/IEC 60947-5-1, EN/IEC 60204-32, EN/IEC 60947-5-5, and EN/ISO 13850 (for versions with trigger action emergency stop) UL 508 CSA C22-2 No. 14	EN/IEC 60947-5-1, EN/IEC 60204-32, EN/IEC 60947-5-5, and EN/ISO 13850 (for versions with trigger action emergency stop) UL 508 CSA C22-2 No. 14	CE Marked
Degree of Protection	NEMA 1, 3, 3R, 4, 4X	NEMA 1, 4, 4X, 5 IP65 IK08	NEMA 1, 4, 4X, 5 IP65 IK08	NEMA 1, 2, 3, 4, 4X, 12, 13
Housing Material	Polycarbonate / PET Polyester Blend	Yellow Polypropylene	Yellow Polypropylene	Yellow Polycarbonate
Rated Operational Characteristics ▲	AC - B600	AC-15: A600 or Ue = 600V, Ie = 1.2A or Ue = 240V, Ie = 3A	AC-15: A600 or Ue = 600V, Ie = 1.2A or Ue = 240V, Ie = 3A	SKRU2-SKRU5 AC - B300 DC - P600
	DC - P600	DC-13: Q600 or Ue = 600V, Ie = 0.1A or Ue = 250V, Ie = 0.27A	DC-13: Q600 or Ue = 600V, Ie = 0.1A or Ue = 250V, Ie = 0.27A	SKRU1, 10, 11 AC - A600 DC - P600
Thermal Current	Continuous 5A	Continuous 10A	Continuous 10A	—
Connection Type	1/2 in. NPT screw clamp terminals	8–26 mm cable entry screw clamp terminals	8–26 mm cable entry screw clamp terminals	NPT threaded conduit entry screw clamp terminals
Cable Size	—	1 x 0.5 mm ² (20AWG) min. 2 x 1.5 mm ² (16AWG) max. 1 x 2.5 mm ² (14AWG) max.	1 x 14 AWG (copper only)	—
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▲ OSHA Section 1910.179, *Overhead and Gantry Cranes*, limits voltage at pendant push buttons to 150 Vac or 300 Vdc max.

Family	XVB L	XVB C	XVP	XVE
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Type of Product	Beacon	Tower Light	Tower Light	Tower Light and Beacon
Diameter	70mm	70 mm	50 mm	70 mm
Features	Product for Customer Configuration	Product for Customer Configuration	Product for Customer Configuration	Product for Customer Configuration
Approvals	UL File E164353 CCN NKCR CSA File LR 44087 Class 3211 03	UL File E164353 CCN NKCR CSA File LR 44087 Class 3211 03	UL File E164353 CCN NKCR CSA File LR 44087 Class 3211 03	UR —
Conforming to Standards	CE Marked	CE Marked	CE Marked	CE Marked
	IEC/EN 60947-5-1	IEC/EN 60947-5-1	IEC/EN 60947-5-1	IEC/EN 60947-5-1
	UL 508	UL 508	UL 508	UL 508
Degree of Protection	IP65	IP65	IP65	IP42
Light Source	LED / Incandescent	LED / Incandescent	LED / Incandescent	LED / Incandescent
Electrical Consumption				
LED Steady	24 Vac/dc: < 30 mA 120–230 Vac: < 30 mA		24 Vac/dc: < 80 mA 120–230 Vac: < 30mA	24V ac/dc: < 25mA 120–230 Vac: < 25 mA
	LED Flashing with Buzzer	24 Vac/dc: < 40 mA 120–230 Vac: < 15mA		24 V ac/dc: < 40mA 120–230 Vac: < 15 mA
Strobe (Energized)	24 Vdc: 5 Joules unit: < 430 mA; 10 J unit: < 850 mA		24 Vdc: ≤40mA	24 Vdc: ≤85 mA
	120 Vac: 5 Joules unit: < 130 mA; 10 J unit: < 260 mA		120 Vac: ≤20mA	120 Vac: ≤35 mA
	230 Vac: 5 Joules unit: < 105 mA; 10 J unit: < 210 mA		230 Vac: ≤11mA	230 Vac: ≤25 mA
Audible Sounders	12–48 Vac/dc: < 20 mA		24 Vdc: ≤15 mA	—
	120–230 Vac: < 50 mA		120 Vac: ≤15 mA	—
	—		230 Vac: ≤12mA	—
Connection Type	Screw Clamp	Screw Clamp	Screw Clamp	Screw Clamp
Cable Size	1 x 16 AWG (1.5 mm ²) With Cable End	1 x 16 AWG (1.5 mm ²) With Cable End	2 x 16 AWG (1.5 mm ²) With Cable End	2 x 16 AWG (1.5 mm ²) With Cable End
Digest Page	19-106	19-107	19-110	19-109

Family	XVC 4	XVC 6	XVC 1	XVS	XVR
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Type of Product	Tower Light	Tower Light	Tower Light	Siren and Electronic Alarm	Rotating Mirror Beacon
Diameter	40 mm	60 mm	100 mm	—	84/106/120/130 mm
Features	All devices are pre-assembled and pre-wired			Adjustable Tones XVS14BMW, 0 to 105 decibels, 43 tones XVS72BM●●, 0 to 90 decibels, 16 tones	All devices are pre-assembled and pre-wired. XVR12●●●S includes buzzer: 70 to 90 decibels
Approvals	UL Recognized E164353 CNN NKCR	UL Recognized E164353 CNN NKCR	UL Recognized E164353 CNN NKCR	UL Recognized E164353 CNN UCST	UL Recognized E164353 CNN NKCR
Conforming to Standards	CE Marked	CE Marked	CE Marked	CE Marked	CE Marked
	EN61000-6-2	EN61000-6-2	EN61000-6-2	—	EN61000-6-2
	EN61000-6-3	EN61000-6-3	EN61000-6-3	—	EN61000-6-4
	—	EN61000-6-4	EN61000-6-4	—	—
	UL 508	UL 508	UL 508	UL 508	UL 508
Degree of Protection	IP54	IP54	IP54	IP53 / IP54	IP23 / IP65 / IP66
Light Source	LED	LED	LED	—	LED
Electrical Consumption					
LED Steady	24 V: 1 unit = 40mA; 2 unit = 80mA; 3 unit = 120mA; 4 unit = 160mA; 5 unit = 200mA	—	24 V: 1 unit = 100mA; 2 unit = 200mA; 3 unit = 300mA; 4 unit = 400mA; 5 unit = 500mA	—	XVR08, XVR10, XVR12, and XVR13 (without buzzer) 12 Vac/dc: 360mA 24 Vac/dc: 180mA
LED Flashing ** with Buzzer	**24 V: 1 unit = 90 mA; 2 unit = 130 mA; 3 unit = 170 mA 4 unit = 210 mA; 5 unit = 250 mA	—	24 V: 1 unit = 150mA; 2 unit = 250mA; 3 unit = 350mA 4 unit = 450mA; 5 unit = 550mA	—	XVR12 with buzzer: 12 Vac/dc: 400 mA 24 Vac/dc: 230 mA
Strobe (Energized)	—	—	—	—	—
Audible Sounders	—	—	—	XVS14BMW 12 Vdc: 350mA 24 Vdc: 400 mA	—
	—	—	—	XVS72BM 12 Vdc: 280 mA 24 Vdc: 190 mA	—
Connection Type	Pre-Wired, Color-Coded Wires cable length: 600mm XVC4B* 900mm XVC4B*K 500mm XVC4B*5S	Pre-Wired, Color-Coded Wires cable length: 600mm XVC6B* 850mm XVC6B*K 550mm XVC6B*5S 850mm XVC6B*5SK	Pre-Wired, Color-Coded Wires cable length: 500mm XVC1B*K 500mm XVC1B*SK 550mm XVC6B*5S 850mm XVC6B*5SK	XVS14BMW Pre-Wired, Color-Coded Wires cable length: 500mm XVS14 XVS72BM●● Not Pre-Wired	Pre-Wired cable length: 500mm XVR08* 400mm XVR10* 400mm XVR12* 400mm XVR13*
Cable Size	22 AWG (0.33 mm ²)	22 AWG (0.33 mm ²)	22 AWG (0.33 mm ²)	—	18 AWG (0.75 mm ²)
Digest Page	19-107	19-105	19-105	19-112	19-103

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





Operator Style	Description	Contact Block	Type	\$ Price	Legend Plate	\$ Price
XB4 Die Cast Chrome		 1 N.O.	XB4BA21	38.50	ZBY2303	3.40
XB5 Double Insulated		 1 N.O.	XB5AA21	38.50	ZBY2303	3.40

Table 19.5: RED—Stop Push Buttons (extended head)





Operator Style	Description	Contact Block	Type	\$ Price	Legend Plate	\$ Price
XB4 Die Cast Chrome		 1 N.C.	XB4BL42	38.50	ZBY2304	3.40
XB5 Double Insulated		 1 N.C.	XB5AL42	38.50	ZBY2304	3.40

Table 19.2: BLACK—Off-On Selector Switch





Operator Style	Description	Contact Block	Type	\$ Price	Legend Plate	\$ Price
XB4 Die Cast Chrome		 1 N.O.	XB4BD21	51.00	ZBY2367	3.40
XB5 Double Insulated		 1 N.O.	XB5AD21	51.00	ZBY2367	3.40

Table 19.6: Hand-Off-Auto Selector Switch





Operator Style	Description	Contact Block	Type	\$ Price	Legend Plate	\$ Price
XB4 Die Cast Chrome		 2 N.O.	XB4BD33	68.00	ZBY2387	3.40
XB5 Double Insulated		 2 N.O.	XB5AD33	68.00	ZBY2387	3.40

Table 19.3: RED—120 Vac LED—On Pilot Light



Operator Style	Description	Light Module	Type	\$ Price	Legend Plate	\$ Price
XB4 Die Cast Chrome		120 Vac Red LED	XB4BVG4	72.00	ZBY2311	3.40
XB5 Double Insulated		120 Vac Red LED	XB5AVG4	72.00	ZBY2311	3.40

Table 19.7: GREEN—120 Vac LED—Off Pilot Light



Operator Style	Description	Light Module	Type	\$ Price	Legend Plate	\$ Price
XB4 Die Cast Chrome		120 Vac Green LED	XB4BVG3	72.00	ZBY2312	3.40
XB5 Double Insulated		120 Vac Green LED	XB5AVG3	72.00	ZBY2312	3.40

Table 19.4: RED—40 mm Mushroom Stop (Push-Pull)









Operator Style	Description	Contact Block	Type	\$ Price	Legend Plate	\$ Price
XB4 Die Cast Chrome		 1 N.C.	XB4BT42	68.00	ZBY9330	3.40
XB5 Double Insulated		 1 N.C.	XB5AT42	68.00	ZBY9330	3.40

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

Operator Style	Description	Contact Block	Type	\$ Price	Legend Plate 60 mm Round	\$ Price
XB4 Die Cast Chrome		 1 N.O. / 1 N.C.	XB4BS8445	165.00	ZBY9330	3.40
XB5 Double Insulated		 1 N.O. / 1 N.C.	XB5AS8445	165.00	ZBY9330	3.40

When ordering, please specify:

- Quantity
- Type or Catalog Number

Table 19.9: BLACK—Start Push Buttons





Operator Style	Description	Contact Block	Type	\$ Price	Legend Plate	\$ Price
30 mm Industrial (Metal)			KR1BH13	89.	KN201	4.40
30 mm Corrosion Resistant (Non-Metallic)			SKR1BH13	89.	KN101SP	4.40

Table 19.13: RED—Stop Push Buttons





Operator Style	Description	Contact Block	Type	\$ Price	Legend Plate	\$ Price
30 mm Industrial (Metal)			KR1RH13	89.	KN202	4.40
30 mm Corrosion Resistant (Non-Metallic)			SKR1RH13	89.	KN102RP	4.40

Table 19.10: BLACK—Off-On Selector Switch





Operator Style	Description	Contact Sequence (Contact Block Included)	Type	\$ Price	Legend Plate	\$ Price
30 mm Industrial (Metal)			KS11BH13	106.	KN244	2.90
30 mm Corrosion Resistant (Non-Metallic)			SKS11BH13	106.	KN144SP	2.90

Table 19.14: BLACK—Hand-Off-Auto Selector Switch





Operator Style	Description	Contact Sequence (Contact Block Included)	Type	\$ Price	Legend Plate	\$ Price
30 mm Industrial (Metal)			KS43BH13	106.	KN260	4.40
30 mm Corrosion Resistant (Non-Metallic)			SKS43BH13	106.	KN160SP	4.40

Table 19.11: RED—120 Vac—On Pilot Light



Operator Style	Description	Type	\$ Price	Legend Plate	\$ Price
30 mm Industrial (Metal)		KP1R31	153.	KN203	4.40
30 mm Corrosion Resistant (Non-Metallic)		SKP1R31	153.	KN103SP	4.40

Table 19.15: GREEN—120 Vac—Off Pilot Light

Operator Style	Description	Type	\$ Price	Legend Plate	\$ Price
30 mm Industrial (Metal)		KP1G31	153.	KN204	4.40
30 mm Corrosion Resistant (Non-Metallic)		SKP1G31	153.	KN104SP	4.40

Table 19.12: RED—120 Vac—On Push-To-Test Pilot Light





Operator Style	Description	Type	\$ Price	Legend Plate	\$ Price
30 mm Industrial (Metal)		KT1R31	197.	KN203	4.40
30 mm Corrosion Resistant (Non-Metallic)		SKT1R31	197.	KN103SP	4.40

Table 19.16: GREEN—120 Vac—Off Push-To-Test Pilot Light

Operator Style	Description	Type	\$ Price	Legend Plate	\$ Price
30 mm Industrial (Metal)		KT1G31	197.	KN204	4.40
30 mm Corrosion Resistant (Non-Metallic)		SKT1G31	197.	KN104RP	4.40

When ordering, please specify:

- Quantity
- Class Number (if appropriate)
- Type or Catalog Number

Standard, Push-To-Test, and Remote Test Pilot Lights

Class 9001 Type J compact pilot lights are designed to be mounted in a 0.69 in. (11/16 in. or 17.5 mm) diameter mounting hole. Each terminal accepts up to two 14 AWG wires (CU only). Type J compact pilot lights meet NEMA 4 (watertight) and NEMA 13 (oiltight). Type JT push-to-test pilot lights have contacts built into the encapsulated body. Type JTR remote test pilot lights have dual inputs for one push remote testing—all you need is a push button with a current rating equal to or greater than the total lamp draw. Type JTR remote test pilot lights can also be energized from two separate input signals of the same voltage and polarity. This is done by wiring the Test terminal to the second input signal.



Type JP1R29

Table 19.17: Standard Pilot Light ▲

Style/Voltage	Color Cap ■						Lamp	Replacement Lamp	\$ Price
	None	\$ Price	Red	Green	Yellow	\$ Price			
Transformer, 110–120 V, 50–60 Hz	JP1	143.00	JP1R29	JP1G29	JP1Y29	153.00	6.3 V, 0.15 A	2550101020	12.50
Incandescent, 120 Vac/Vdc	JP38	116.00	JP38R29	JP38G29	JP38Y29	126.00	120 V, 0.015 A	2550101040	12.50
Incandescent, 24–28 Vac/Vdc	JP35	116.00	JP35R29	JP35G29	JP35Y29	126.00	28 V, 0.040 A	2550101024	12.50
LED, 24–28 Vac	—	—	JP35LRR29	JP35LGG29	JP35LYY29	153.00	28 V, 0.03 A	—	—
LED, 24–28 Vdc	—	—	JP35DRR29	JP35DGG29	JP35DYY29	153.00	28 V, 0.03 A	—	—
LED, 120 Vac	—	—	JP38LRR29	JP38LGG29	JP38LYY29	153.00	28 V, 0.03 A	—	—
Replacement LED, 120 Vac	Red	—	—	—	—	—	—	6508805207	43.00
	Yellow	—	—	—	—	—	—	6508805208	43.00
	Green	—	—	—	—	—	—	6508805209	43.00



Table 19.18: Push-To-Test Pilot Light ▲

Style/Voltage	Color Cap ■						Lamp	Replacement Lamp	\$ Price
	None	\$ Price	Red	Green	Yellow	\$ Price			
Transformer, 110–120 V, 50–60 Hz	JT1	185.00	JT1R29	JT1G29	JT1Y29	195.00	6.3 V, 0.15 A	2550101020	12.50
Incandescent, 120 Vac/Vdc	JT38	158.00	JT38R29	JT38G29	JT38Y29	168.00	120 V, 0.015 A	2550101040	12.50
Incandescent, 24–28 Vac/Vdc	JT35	158.00	JT35R29	JT35G29	JT35Y29	168.00	28 V, 0.040 A	2550101024	12.50
LED, 24–28 Vac	—	—	JT35LRR29	JT35LGG29	JT35LYY29	195.00	28 V, 0.03 A	—	—
LED, 24–28 Vdc	—	—	JT35DRR29	JT35DGG29	JT35DYY29	195.00	28 V, 0.03 A	—	—
LED, 120 Vac	—	—	JT38LRR29	JT38LGG29	JT38LYY29	195.00	28 V, 0.03 A	—	—
Replacement LED, 120 Vac	Red	—	—	—	—	—	—	6508805207	43.00
	Yellow	—	—	—	—	—	—	6508805208	43.00
	Green	—	—	—	—	—	—	6508805209	43.00

Table 19.19: Color Caps, Class 9001 Type J

Color	Replacement Color Caps		\$ Price
	Plastic ■		
Red	R29	9.90	
Green	G29		
Amber	A29		
Blue	L29		
White	W29		
Yellow	Y29		

Table 19.20: Legend Plates

Description	Maximum Number of Lines	Maximum Number of Characters	Catalog Number ■	\$ Price
	Blank	Black Field Red Field	JN100 JN100R	4.40
	Special Marking (Specify Marking)	Black Field Red Field	JN199 JN199R	18.50
	Blank	Aluminum Field	JN700	4.40
	Special Marking (Specify Marking)	Aluminum Field	JN799	18.50

- ▲ Other voltages are available. Refer to Catalog 9001CT0001.
- To order, add prefix 9001 to the beginning of the catalog number.

Class 9001 Type O, NEMA 13 Pilot Lights

Table 19.21: Instrument Type Incandescent Pilot Lights—Type O NEMA 13



Type O

Voltage Vac/Vdc	Avg. Current (A)	Red Lens Type	Green Lens Type	Amber Lens Type	Clear Lens Type	Yellow Lens Type	White Lens Type	Fluted Blue Lens Type	\$ Price
12	.170	OR12	OG12	OA12	OC12	OY12	OW12	—	28.70
24	.073	OR24	OG24	OA24	OC24	OY24	OW24	FB24	
120	.025	OR120	OG120	OA120	OC120	OY120	OW120	FB120	

Table 19.22: Replacement Lamps—Class 9001, Type O

Voltage	Sylvania Lamp Number	Square D Part Number	\$ Price
12 V	12PSB	2550105003	16.50
24 V	24PSB	2550105004	
120 V	120PSB	2550105005	

XVL Miniature LED

Table 19.23: Specifications



XVL1**

Conforming to standards	IEC 337-2, NF C 63-140, VDE 0660-200
Degree of protection	IP40 (IP65 with seal) conforming to IEC 529 and NF C 20-010
Current consumption	25 mA
Cabling	XVL1** , XVL2** : tags for 2.8 x 0.5 mm Faston connectors, also for soldered connections. XVL3** : threaded connectors, clamping, capacity: min. 1 x 0.2 mm ² , max. 1 x 1.5 mm ²

Table 19.24: With Black Bezel, Raised LED



XVL2**

Description	Supply Voltage DC	Color	Catalog Number	\$ Price Each
Ø 8 mm ▲ with integral ballast resistor and reverse polarity protection diode Degree of protection IP40 LED pilot lights Ø 8 mm, with black bezel, visible LED XVL1**	12 V	Green Red Amber	XVLA123 XVLA124 XVLA125	32.80
	24 V	Green Red Amber	XVLA133 XVLA134 XVLA135	

Table 19.25: With Integral Lens Cap, Covered LED



XVL3**

Description	Supply Voltage DC	Color	Catalog Number	\$ Price Each
Ø 8 mm ▲ with integral ballast resistor and reverse polarity protection diode Degree of protection IP40 Ø 8 mm, with lens incorporated, LED XVL2	12 V	Green Red Amber	XVLA223 XVLA224 XVLA225	32.80
	24 V	Green Red Amber	XVLA233 XVLA234 XVLA235	
Ø 12 mm ■ with integral ballast resistor and reverse polarity protection diode Degree of protection IP40 Ø 12 mm, with lens incorporated, LED XVL3	12 V	Green Red Amber	XVLA323 XVLA324 XVLA325	52.00
	24 V	Green Red Amber	XVLA333 XVLA334 XVLA335	

- ▲ Quick connects (2.8 x 0.5 mm).
- Screw termination.

Table 19.26: Accessories



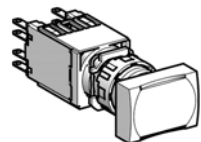
XVLX**



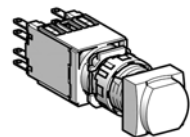
XVLZ91•

Description	Catalog Number	\$ Price Each	
Tightening tools (Sold singly)	For Ø 8 mm pilot lights For Ø 12 mm pilot lights	XVLX08 XVLX12	18.60 24.00
Seals (IP65) (Sold in lots of 10)	For Ø 8 mm pilot lights For Ø 12 mm pilot lights	XVLZ911 XVLZ912	0.65

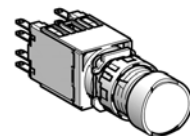
**Table 19.27: Illuminated Push Buttons (12–24 Vac/Vdc LED included)
Complete Units with Quick Connectors/Solder Tabs**



XB6DW...B



XB6CE...B

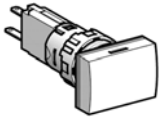


XB6AF...B

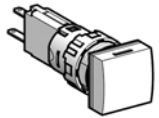
Type of Operator	Type of Contact		Color	Rectangular	Square	Round	\$ Price	
	N.O.	N.C.		Catalog Number				
Flush, spring return	1	—	White	XB6DW1B1B	XB6CW1B1B	XB6AW1B1B	44.40	
			Green	XB6DW3B1B	XB6CW3B1B	XB6AW3B1B		
			Yellow	XB6DW5B1B	XB6CW5B1B	XB6AW5B1B		
			Blue	XB6DW6B1B	XB6CW6B1B	XB6AW6B1B		
	—	1	Red	XB6DW4B2B	XB6CW4B2B	XB6AW4B2B	44.40	
			White	XB6DW1B5B	XB6CW1B5B	XB6AW1B5B		
			Green	XB6DW3B5B	XB6CW3B5B	XB6AW3B5B		
			Red	XB6DW4B5B	XB6CW4B5B	XB6AW4B5B		
	1	1	Yellow	XB6DW5B5B	XB6CW5B5B	XB6AW5B5B	52.00	
			Blue	XB6DW6B5B	XB6CW6B5B	XB6AW6B5B		
			White	XB6DF1B1B	XB6CF1B1B	XB6AF1B1B		44.40
			Green	XB6DF3B1B	XB6CF3B1B	XB6AF3B1B		
Yellow	XB6DF5B1B	XB6CF5B1B	XB6AF5B1B					
Blue	XB6DF6B1B	XB6CF6B1B	XB6AF6B1B					
Flush, maintained	—	1	Red	XB6DF4B2B	XB6CF4B2B	XB6AF4B2B	44.40	
			White	XB6DF1B5B	XB6CF1B5B	XB6AF1B5B		
			Green	XB6DF3B5B	XB6CF3B5B	XB6AF3B5B		
			Red	XB6DF4B5B	XB6CF4B5B	XB6AF4B5B		
1	1	Yellow	XB6DF5B5B	XB6CF5B5B	XB6AF5B5B	52.00		
		Blue	XB6DF6B5B	XB6CF6B5B	XB6AF6B5B			
		White	XB6DE1B1B	XB6CE1B1B	XB6AE1B1B		44.40	
		Green	XB6DE3B1B	XB6CE3B1B	XB6AE3B1B			
Yellow	XB6DE5B1B	XB6CE5B1B	XB6AE5B1B					
Blue	XB6DE6B1B	XB6CE6B1B	XB6AE6B1B					
Extended, spring return	1	—	Red	XB6DE4B2B	XB6CE4B2B	XB6AE4B2B	44.40	
			White	XB6DE1B5B	XB6CE1B5B	XB6AE1B5B		
			Green	XB6DE3B5B	XB6CE3B5B	XB6AE3B5B		
			Red	XB6DE4B5B	XB6CE4B5B	XB6AE4B5B		
	—	1	Yellow	XB6DE5B5B	XB6CE5B5B	XB6AE5B5B	52.00	
			Blue	XB6DE6B5B	XB6CE6B5B	XB6AE6B5B		

Note: **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.

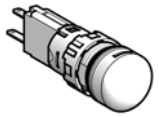
Legends pages 19-20 and 19-22



XB6DV..B



XB6CV..B



XB6AV..B

**Table 19.28: Pilot Lights (12–24 Vac/Vdc LED included)
Complete Units with Quick Connectors/Solder Tabs**

Color	Rectangular	Square	Round	\$ Price
	Catalog Number			
White	XB6DV1BB	XB6CV1BB	XB6AV1BB	27.30
Green	XB6DV3BB	XB6CV3BB	XB6AV3BB	
Red	XB6DV4BB	XB6CV4BB	XB6AV4BB	
Yellow	XB6DV5BB	XB6CV5BB	XB6AV5BB	
Blue	XB6DV6BB	XB6CV6BB	XB6AV6BB	

**Table 19.29: Pilot Lights (120 Vac LED)
Complete Units with Quick Connectors/Solder Tabs**

Color	Rectangular	Square	Round	\$ Price
	Catalog Number			
White	XB6DV1GB	XB6CV1GB	XB6AV1GB	27.30
Green	XB6DV3GB	XB6CV3GB	XB6AV3GB	
Red	XB6DV4GB	XB6CV4GB	XB6AV4GB	
Yellow	XB6DV5GB	XB6CV5GB	XB6AV5GB	
Blue	XB6DV6GB	XB6CV6GB	XB6AV6GB	

**Table 19.30: Push Buttons (Non-Illuminated)
Complete Units with Quick Connectors/Solder Tabs**

Type of Push	Type of Contact		Color	Rectangular	Square	Round	\$ Price
	N.O.	N.C.		Catalog Number			
Flush, spring return	1	—	White	XB6DA11B	XB6CA11B	XB6AA11B	26.20
			Black	XB6DA21B	XB6CA21B	XB6AA21B	
			Green	XB6DA31B	XB6CA31B	XB6AA31B	
			Yellow	XB6DA51B	XB6CA51B	XB6AA51B	
			Blue	XB6DA61B	XB6CA61B	XB6AA61B	
	—	1	Black	XB6DA22B	XB6CA22B	XB6AA22B	26.20
			Red	XB6DA42B	XB6CA42B	XB6AA42B	
			White	XB6DA15B	XB6CA15B	XB6AA15B	
			Black	XB6DA25B	XB6CA25B	XB6AA25B	
			Green	XB6DA35B	XB6CA35B	XB6AA35B	
1	1	Red	XB6DA45B	XB6CA45B	XB6AA45B	34.10	
		Yellow	XB6DA55B	XB6CA55B	XB6AA55B		
		Blue	XB6DA65B	XB6CA65B	XB6AA65B		

Table 19.31: Trigger Action Emergency Stop Mushroom Head Push Buttons (Color Red)▲

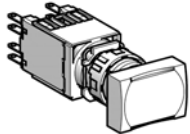
Shape of Head	Type of Push	Type of Contact		Diameter of Head (mm)	Catalog Number	\$ Price
		N.O.	N.C.			
●	Turn-to-release	—	1	30	XB6AS8342B	65.00
		1	1	30	XB6AS8345B	73.00
●	Key release	—	1	30	XB6AS9342B	78.00
		1	1	30	XB6AS9345B	87.00

▲ Trigger action mushroom heads are tamper proof in that a change of contact state is not possible by teasing or floating the operator.

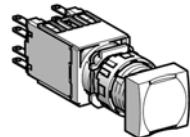
Table 19.32: Circular Legends, 45 mm

Description	Color	Text	Catalog Number	\$ Price
		Blank		
Circular legends, 45 mm	Yellow	Blank	ZB6Y7001	3.40
		Emergency stop	ZB6Y7330	

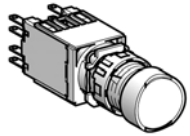
Legends pages 19-20 and 19-22



XB6DA..B



XB6CA..B



XB6AA..B



XB6AS8345B



XB6AS9345B

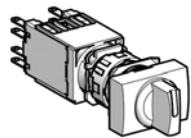


ZB6Y7330

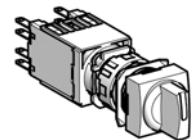
**Table 19.33: Selector Switches (Switching Angle: Handle: 60°, Key: 70°)
Complete Units with Quick Connectors/Solder Tabs**

Type of Operator	Type of Contact		Number and Type of Positions	Diagram	Rectangular	Square	Round	\$ Price
	N.O.	N.C.			Catalog Number			
Handle	1	—	2-maintained		XB6DD221B	XB6CD221B	XB6AD221B	29.70
	1	1	2-maintained		XB6DD225B	XB6CD225B	XB6AD225B	37.60
			3-maintained		XB6DD235B	XB6CD235B	XB6AD235B	37.60
2	—	3-maintained		XB6DD233B	XB6CD233B	XB6AD233B	37.60	
Type of Operator	Type of Contact		Number and Type of Positions	Diagram	Rectangular	Square	Round	\$ Price
	N.O.	N.C.			Catalog Number			
Key	1	1	2-maintained		XB6DGC5B	XB6CGC5B	XB6AGC5B	68.00
			2-maintained		XB6DGB5B	XB6CGB5B	XB6AGB5B	68.00
			3-maintained		XB6DGH5B	XB6CGH5B	XB6AGH5B	68.00
	2	—	3-maintained		XB6DGH3B	XB6CGH3B	XB6AGH3B	68.00

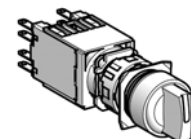
Note: Indicates key withdrawal position.



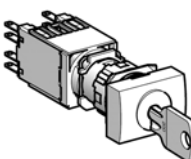
XB6DD**B



XB6CD**B



XB6AD**B



XB6DG**B

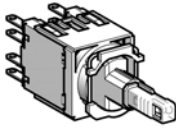
Table 19.34: Selector Switch Sequence

2 Position Selector Switch		
		Contact block guide ▲
O	X	1 N.O. (left or right)
X	O	1 N.C. (left or right)
O	X	1 N.O. and 1 N.C.
X	O	1 N.C.

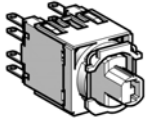
3 Position Selector Switch			
			Contact block guide ▲
O	O	X	1 N.O. (left)
X	O	X	2 N.O. wired in parallel (side by side)
X	O	O	1 N.O. (right)
O	X	X	1 N.C. (right)
X	X	O	1 N.C. (left)
O	X	O	2 N.C. wired in series (side by side)

▲ As viewed from the front of the panel.

Legends pages 19-20 and 19-22



ZB6ZB**B



ZB6ZH**B

Table 19.35: Contact Blocks and Light Modules for Illuminated Push Buttons[▲]

Description	Supply Voltage	Type of Contact		Color of Light Source	Catalog Number	\$ Price
		N.O.	N.C.			
Quick connectors/solder tabs						
Integral LED ■	12–24 Vac/Vdc	1	—	White Green Yellow Blue	ZB6ZB11B ZB6ZB31B ZB6ZB51B ZB6ZB61B	28.00
		—	1	Red Yellow	ZB6ZB42B ZB6ZB52B	28.00
		1	1	White Green Red Yellow Blue	ZB6ZB15B ZB6ZB35B ZB6ZB45B ZB6ZB55B ZB6ZB65B	35.20
	120 Vac	1	—	White Green Yellow Blue	ZB6ZG11B ZB6ZG31B ZB6ZG51B ZB6ZG61B	28.00
		—	1	Red Yellow	ZB6ZG42B ZB6ZG52B	28.00
		1	1	White Green Red Yellow Blue	ZB6ZG15B ZB6ZG35B ZB6ZG45B ZB6ZG55B ZB6ZG65B	35.20
Direct for incandescent bulb (not included)★	≤24 Vac/Vdc	1	—	—	ZB6ZH01B	23.80
		—	1	—	ZB6ZH02B	23.80
		1	1	—	ZB6ZH05B	31.00

Table 19.36: Contact Blocks for Push Buttons and Selector Switches

Description	Type of Contact		Catalog Number	\$ Price
	N.O.	N.C.		
Quick connectors/solder tabs				
Contact blocks with mounting base	1	—	ZB6Z1B	9.40
	—	1	ZB6Z2B	9.40
	2	—	ZB6Z3B	16.60
	—	2	ZB6Z4B	16.60
	1	1	ZB6Z5B	16.60

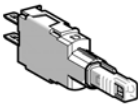
Table 19.37: Light Modules for Pilot Lights

Description	Supply Voltage	Color of Light Source	Catalog Number	\$ Price		
Quick connectors/solder tabs[△]						
Integral LED ♦	12–24 Vac/Vdc	White Green Red Yellow Blue	ZB6EB1B ZB6EB3B ZB6EB4B ZB6EB5B ZB6EB6B	16.60		
		120 Vac	White Green Red Yellow Blue		ZB6EG1B ZB6EG3B ZB6EG4B ZB6EG5B ZB6EG6B	
			110 Vac		—	ZB6EG0B
		230 Vac	—		ZB6EM0B	15.60
	With resistor for 95 V neon bulb (not included) ★▼	≤24 Vac/Vdc	—	ZB6EH0B	14.40	
	Direct supply for 0.6 W max. incandescent bulb (not included)★	—	—	—	—	

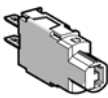
Table 19.38: Separate Contact Blocks (Maximum of 3 contacts per mounting base.)

Contact Material	For use with mounting base	Type of Contact		Catalog Number	\$ Price
		N.O.	N.C.		
Silver alloy	Quick connectors/solder tabs	1	—	ZB6E1B	7.20
		—	1	ZB6E2B	7.20
Gold flashed	Quick connectors/solder tabs	1	—	ZB6E1E	12.40
		—	1	ZB6E2E	12.40

- ▲ Illuminated selector switches can be assembled by using a contact block/light module assembly in conjunction with a selector switch head, supplied without handle, and a transparent handle. See page 19-16.
- The LED must be the same color as the push button cap.
- ♦ The LED must be the same color as the lens.
- ★ Order bulbs separately. See page 19-22.
- ▼ Neon bulb can only be used with a red, yellow, or white cap.
- △ Electrical components with connection by printed circuit board pins are available. Refer to Catalog 9001CT0001 for details.



ZB6E**B



ZB6E*0B



ZB6E*B

Table 19.39: Heads for Illuminated Push Buttons
(To combine with complete bodies and contact blocks, see page 19-15)



ZB6DW•



ZB6CE•



ZB6AF•

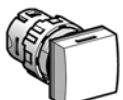
Type of Push	Color	Rectangular	Square	Round	\$ Price
		Catalog Number			
Flush, spring return	White	ZB6DW1	ZB6CW1	ZB6AW1	14.40
	Green	ZB6DW3	ZB6CW3	ZB6AW3	
	Red	ZB6DW4	ZB6CW4	ZB6AW4	
	Yellow	ZB6DW5	ZB6CW5	ZB6AW5	
	Blue	ZB6DW6	ZB6CW6	ZB6AW6	
Flush, maintained	5 colors ▲	ZB6DW9	ZB6CW9	ZB6AW9	16.40
	White	ZB6DF1	ZB6CF1	ZB6AF1	14.40
	Green	ZB6DF3	ZB6CF3	ZB6AF3	
	Red	ZB6DF4	ZB6CF4	ZB6AF4	
	Yellow	ZB6DF5	ZB6CF5	ZB6AF5	
Blue	ZB6DF6	ZB6CF6	ZB6AF6		
Extended, spring return	5 colors ▲	ZB6DF9	ZB6CF9	ZB6AF9	16.40
	White	ZB6DE1	ZB6CE1	ZB6AE1	14.40
	Green	ZB6DE3	ZB6CE3	ZB6AE3	
	Red	ZB6DE4	ZB6CE4	ZB6AE4	
	Yellow	ZB6DE5	ZB6CE5	ZB6AE5	
Blue	ZB6DE6	ZB6CE6	ZB6AE6		
	5 colors▲	ZB6DE9	ZB6CE9	ZB6AE9	16.40

▲ Five different color caps included with head (white, green, red, yellow, and blue).

Table 19.40: Heads for Pilot Lights
(To combine with light modules, see page 19-15.)



ZB6DV•



ZB6CV•



ZB6AV•




Color	Rectangular	Square	Round	\$ Price
	Catalog Number			
White	ZB6DV1	ZB6CV1	ZB6AV1	8.20
Green	ZB6DV3	ZB6CV3	ZB6AV3	
Red	ZB6DV4	ZB6CV4	ZB6AV4	
Yellow	ZB6DV5	ZB6CV5	ZB6AV5	
Blue	ZB6DV6	ZB6CV6	ZB6AV6	
5 colors ■	ZB6DV9	ZB6CV9	ZB6AV9	10.20

■ Five different color caps included with head (white, green, red, yellow, and blue).

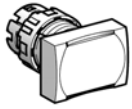
Legends pages 19-20 and 19-22

Non-Illuminated Operators

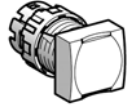
Table 19.41: Heads for Push Buttons
(To combine with complete bodies and contact blocks, see page 19-15.)

Type of Push	Color				\$ Price
		Catalog Number			
Flush, spring return	White	ZB6DA1	ZB6CA1	ZB6AA1	14.40
	Black	ZB6DA2	ZB6CA2	ZB6AA2	
	Green	ZB6DA3	ZB6CA3	ZB6AA3	
	Red	ZB6DA4	ZB6CA4	ZB6AA4	
	Yellow	ZB6DA5	ZB6CA5	ZB6AA5	
	Blue	ZB6DA6	ZB6CA6	ZB6AA6	
	6 colors▲	ZB6DA9	ZB6CA9	ZB6AA9	16.40

▲ Five different color caps included with head (white, green, red, yellow, and blue).



ZB6DA•



ZB6CA•



ZB6AA•



ZB6AS834



ZB6Y7330

Table 19.42: Mushroom Heads for Trigger Action Push Buttons (30 mm)■


Shape of Head	Type of Push	Cap Color	Catalog Number	\$ Price
	Turn-to-release	Red	ZB6AS834	49.60




Table 19.43: Circular Legends, 45 mm

Description	Color	Text	Catalog Number	\$ Price
Circular legends, 45 mm	Yellow	Blank	ZB6Y7001	3.40
		Emergency stop	ZB6Y7330	

■ Trigger action mushroom heads are tamper proof in that a change of contact state is not possible by teasing or floating the operator.

Non-Illuminated Selector Switches

Table 19.44: Heads for Non-Illuminated Selector Switches▲◆
(To combine with complete bodies and contact blocks, see page 19-15.)

Number and Type of Positions	Color of Handle				\$ Price
		Catalog Number			
Switching angle: maintained positions 60°, spring return positions 45°					
2-maintained	Black	ZB6DD22	ZB6CD22	ZB6AD22	17.60
2-maintained	Black	ZB6DD28■	ZB6CD28■	ZB6AD28■	
3-maintained	Black	ZB6DD23	ZB6CD23	ZB6AD23	
2-spring return to center	Black	ZB6DD24	ZB6CD24	ZB6AD24	
3-spring return to center	Black	ZB6DD25	ZB6CD25	ZB6AD25	
3-spring return from right to center	Black	ZB6DD26	ZB6CD26	ZB6AD26	
3-spring return from left to center	Black	ZB6DD27	ZB6CD27	ZB6AD27	

▲ For bodies with 2 contact blocks, maximum.
■ Switching angle: maintained positions 90°.
◆ See selector switch sequence charts on page 19-19.

Legends..... pages 19-20 and 19-22



ZB6DD••



ZB6CD••



ZB6AD••

Table 19.45: Heads for Non-Illuminated Selector Switches▲◆
(To combine with complete bodies and contact blocks, see page 19-15.)



ZB6DD**



ZB6CD**



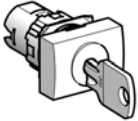




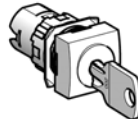






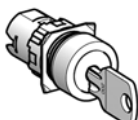






ZB6AD**


Number and Type of Positions	Color of Handle	Rectangular	Square	Round	\$ Price	
		Catalog Number				
Switching angle: maintained positions 60°, spring return positions 45°						
2-maintained	▼	Black	ZB6DD22	ZB6CD22	ZB6AD22	17.60
2-maintained	∨	Black	ZB6DD28■	ZB6CD28■	ZB6AD28■	
3-maintained	∨	Black	ZB6DD23	ZB6CD23	ZB6AD23	
2-spring return to center	▷	Black	ZB6DD24	ZB6CD24	ZB6AD24	
3-spring return to center	∨	Black	ZB6DD25	ZB6CD25	ZB6AD25	
3-spring return from right to center	∨	Black	ZB6DD26	ZB6CD26	ZB6AD26	
3-spring return from left to center	∨	Black	ZB6DD27	ZB6CD27	ZB6AD27	

- ▲ For bodies with 2 contact blocks, maximum.
- Switching angle: maintained positions 90°.
- ◆ See selector switch sequence charts on page 19-14.

Legends pages 19-20 and 19-22



Table 19.46: Heads for Ronis Key Operated Selector Switches ▲
(To combine with complete bodies and contact blocks, see page 19-15.)




Number and Type of Positions	Key Withdrawal	Rectangular	Square	Round	\$ Price
		Catalog Number			
Switching angle: maintained positions 70°, spring return positions 45°					
 ZB6DG•	 Right-hand position	ZB6DGA	ZB6CGA	ZB6AGA	45.60
	 Center position	ZB6DGB	ZB6CGB	ZB6AGB	
	 Both positions	ZB6DGC	ZB6CGC	ZB6AGC	
2-spring return from right to center  Center position	ZB6DGL	ZB6CGL	ZB6AGL		
 ZB6CG•	 Left-hand position	ZB6DGD	ZB6CGD	ZB6AGD	
	 Center position	ZB6DGE	ZB6CGE	ZB6AGE	
	 Left-hand and center positions	ZB6DGF	ZB6CGF	ZB6AGF	
	 Right-hand position	ZB6DGG	ZB6CGG	ZB6AGG	
	 All 3 positions	ZB6DGH	ZB6CGH	ZB6AGH	
	 Left-hand and right-hand positions	ZB6DGJ	ZB6CGJ	ZB6AGJ	
 ZB6AG•	 Right-hand and center positions	ZB6DGK	ZB6CGK	ZB6AGK	
	3-spring return from right to center  Left-hand position	ZB6DQG	ZB6CGQ	ZB6AGQ	
	 Center position	ZB6DGR	ZB6CGR	ZB6AGR	
3-spring return to center  Left-hand and center positions	 Left-hand and center positions	ZB6DGS	ZB6CGS	ZB6AGS	
	 Center position	ZB6DGT	ZB6CGT	ZB6AGT	

Note:  Indicates key withdrawal position.

▲ Ronis 200 key standard. Other keys available, refer to Catalog 9001CT0001.

Table 19.47: Selector Switch Sequence (using contact block assemblies, page 19-15)

2 Position Selector Switch			
		Contact block guide ■	
O	X	1 N.O. (left or right)	
X	O	1 N.C. (left or right)	
O	X	1 N.O. and 1 N.C.	
X	O	1 N.C.	

3 Position Selector Switch			
			Contact block guide ■
O	O	X	1 N.O. (left)
X	O	X	2 N.O. wired in parallel (side by side)
X	O	O	1 N.O. (right)
O	X	X	1 N.C. (right)
X	X	O	1 N.C. (left)
O	X	O	2 N.C. wired in series (side by side)

■ As viewed from the front of the panel.

Legends..... pages 19-20 and 19-22



ZB6YD20

Table 19.48: Standard Legend Plate (24 X 28 mm) for 8 X 21 mm Legend ▲

Description	Background Color of Legend	Catalog Number	\$ Price
Without legend insert	—	ZB6YD20	2.00
With blank legend insert	White or yellow	ZB6YD21	3.40
	Black or red	ZB6YD22	3.40

Table 19.49: 8 x 21 mm Marked Legends (for 24 x 28 mm legend holder ZB6YD20) ▲

Color	Marking	Catalog Number	\$ Price
White Text Red Background (Stop and Fault) Black Background (all others)	International	O-I	ZB6Y2178
		I-II	ZB6Y2179
		I-O-II	ZB6Y2186
		←O→	ZB6Y2190
	English	HAND-O-AUTO	ZB6Y2387
		CLOSE	ZB6Y2314
		DOWN	ZB6Y2308
		FORWARD	ZB6Y2305
		FAULT	ZB6Y2334
		LEFT	ZB6Y2310
		OFF	ZB6Y2312
		ON	ZB6Y2303
		OPEN	ZB6Y2313
		RESET	ZB6Y2323
		REVERSE	ZB6Y2306
		RIGHT	ZB6Y2309
		RUN	ZB6Y2311
		STOP	ZB6Y2304
		UP	ZB6Y2307

▲ Additional legend plate sizes and markings are available in Catalog 9001CT0001.


















ZB6Y2178



ZB6Y2304

Table 19.50: Push Button Caps—Marked

Ink Marking Color: White on colored cap Black on white cap	Color				\$ Price
		Catalog Number			
For non-illuminated push buttons					
 ZB6YD•10	0	White	ZB6YD100	ZB6YC100	ZB6YA100
		Black	ZB6YD200	ZB6YC200	ZB6YA200
 ZB6YC•10	1	White	ZB6YD101	ZB6YC101	ZB6YA101
		Black	ZB6YD201	ZB6YC201	ZB6YA201
 ZB6YA•10	2	White	ZB6YD102	ZB6YC102	ZB6YA102
		Black	ZB6YD202	ZB6YC202	ZB6YA202
 ZB6YD•17	3	White	ZB6YD103	ZB6YC103	ZB6YA103
		Black	ZB6YD203	ZB6YC203	ZB6YA203
 ZB6YC•19	4	White	ZB6YD104	ZB6YC104	ZB6YA104
		Black	ZB6YD204	ZB6YC204	ZB6YA204
 ZB6YA•19	5	White	ZB6YD105	ZB6YC105	ZB6YA105
		Black	ZB6YD205	ZB6YC205	ZB6YA205
 ZB6YD•19	6	White	ZB6YD106	ZB6YC106	ZB6YA106
		Black	ZB6YD206	ZB6YC206	ZB6YA206
 ZB6YC•19	7	White	ZB6YD107	ZB6YC107	ZB6YA107
		Black	ZB6YD207	ZB6YC207	ZB6YA207
 ZB6YA•19	8	White	ZB6YD108	ZB6YC108	ZB6YA108
		Black	ZB6YD208	ZB6YC208	ZB6YA208
 ZB6YD•19	9	White	ZB6YD109	ZB6YC109	ZB6YA109
		Black	ZB6YD209	ZB6YC209	ZB6YA209
 ZB6YC•19	ON	White	ZB6YD117	ZB6YC117	ZB6YA117
		Green	ZB6YD317	ZB6YC317	ZB6YA317
 ZB6YA•19	OFF	Black	ZB6YD224	ZB6YC224	ZB6YA224
		Red	ZB6YD424	ZB6YC424	ZB6YA424
 ZB6YD•19	I	White	ZB6YD111	ZB6YC111	ZB6YA111
		Green	ZB6YD311	ZB6YC311	ZB6YA311
 ZB6YC•19	O	Black	ZB6YD210	ZB6YC210	ZB6YA210
		Red	ZB6YD410	ZB6YC410	ZB6YA410
 ZB6YA•19	R	Black	ZB6YD226	ZB6YC226	ZB6YA226
		Blue	ZB6YD626	ZB6YC626	ZB6YA626
 ZB6YD•19	START	White	ZB6YD140	ZB6YC140	ZB6YA140
		Green	ZB6YD340	ZB6YC340	ZB6YA340
 ZB6YC•19	STOP	Black	ZB6YD241	ZB6YC241	ZB6YA241
		Red	ZB6YD441	ZB6YC441	ZB6YA441
 ZB6YA•19	II	White	ZB6YD112	ZB6YC112	ZB6YA112
		Black	ZB6YD212	ZB6YC212	ZB6YA212
 ZB6YD•19	III	White	ZB6YD113	ZB6YC113	ZB6YA113
		Black	ZB6YD213	ZB6YC213	ZB6YA213
 ZB6YC•19	+	White	ZB6YD114	ZB6YC114	ZB6YA114
		Black	ZB6YD214	ZB6YC214	ZB6YA214
 ZB6YA•19	-	White	ZB6YD115	ZB6YC115	ZB6YA115
		Black	ZB6YD215	ZB6YC215	ZB6YA215
 ZB6YD•19	UP	White	ZB6YD127	ZB6YC127	ZB6YA127
		Black	ZB6YD227	ZB6YC227	ZB6YA227
 ZB6YC•19	DOWN	White	ZB6YD128	ZB6YC128	ZB6YA128
		Black	ZB6YD228	ZB6YC228	ZB6YA228
 ZB6YA•19	CLOSE	White	ZB6YD132	ZB6YC132	ZB6YA132
		Black	ZB6YD232	ZB6YC232	ZB6YA232
 ZB6YD•19	↑	White	ZB6YD119	ZB6YC119	ZB6YA119
		Black	ZB6YD219	ZB6YC219	ZB6YA219
 ZB6YC•19	↓	White	ZB6YD120	ZB6YC120	ZB6YA120
		Black	ZB6YD220	ZB6YC220	ZB6YA220
 ZB6YA•19	→	White	ZB6YD121	ZB6YC121	ZB6YA121
		Black	ZB6YD221	ZB6YC221	ZB6YA221
 ZB6YD•19	←	White	ZB6YD122	ZB6YC122	ZB6YA122
		Black	ZB6YD222	ZB6YC222	ZB6YA222

4.20

Table 19.51: Accessories

Description	Application	Catalog Number	\$ Price
Body	Fitting contact blocks	ZB6Y009	2.00
Bezel tightening tool + bulb extractor	Fixing the switch and changing bulbs	ZB6Y905	4.20
Three piece tool kit	—	ZB6Y019	12.40
Nut	Fixing head to panel	ZB6Y002	2.00
Adaptor	Flush mounting a circular head push button or pilot light in Ø 22 mm cut-out	ZB6YA002	6.20
Shroud	Protecting contacts against touching	ZB6Y001	3.40
Protective cover	Circular and square head push buttons and switches	ZB6YA001	16.60
	Rectangular head push buttons and switches	ZB6YD001	16.60
Female Quick connector/Solder tab	Sold in lots of 100 pieces	ZB6Y004	0.42
Blanking plug	Plugging an unused knockout	ZB6Y005	4.20
Ronis key, 2 pieces	Key operated selector switches and emergency stop mushroom	ZB6Y007	6.20
	6 V	ZB6YA006	2.00
	12 V	ZB6YJ012	2.00
Incandescent bulbs, bayonet T1 1/4	28 V ▲	ZB6YB028	2.00
	110/230 V ■	ZB6YG095	4.20
Neon bulbs	110/230 V ■	ZB6YG095	4.20

▲ 28 V bulb supplied, for use on 24 V.
■ 95 V bulb supplied, for use on 110/230 V.

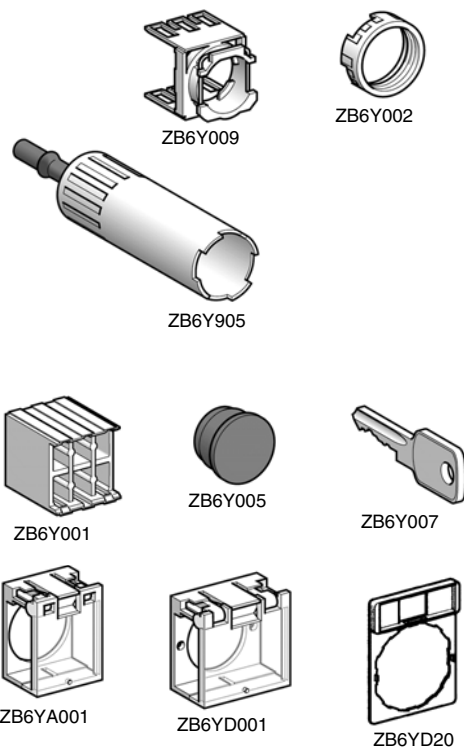


Table 19.52: Standard Legend Plate (24 X 28 mm) for 8 X 21 mm Legend ▲

Description	Background Color of Legend	Catalog Number	\$ Price
Without legend insert	—	ZB6YD20	2.00
With blank legend insert	White or yellow	ZB6YD21	3.40
	Black or red	ZB6YD22	3.40

Table 19.53: 8 x 21 mm Marked Legends (for 24 x 28 mm legend holder ZB6YD20) ▲

Color	Marking	Catalog Number	\$ Price
White Text Red Background (Stop and Fault) Black Background (all others)	International	O-I	ZB6Y2178
		I-II	ZB6Y2179
		I-O-II	ZB6Y2186
		←O→	ZB6Y2190
		HAND-O-AUTO	ZB6Y2387
	CLOSE	ZB6Y2314	1.60
	DOWN	ZB6Y2308	
	FORWARD	ZB6Y2305	
	FAULT	ZB6Y2334	
	LEFT	ZB6Y2310	
	OFF	ZB6Y2312	
	ON	ZB6Y2303	
	OPEN	ZB6Y2313	
	RESET	ZB6Y2323	
	REVERSE	ZB6Y2306	
RIGHT	ZB6Y2309		
RUN	ZB6Y2311		
STOP	ZB6Y2304		
UP	ZB6Y2307		

▲ Additional legend plate sizes and markings are available in Catalog 9001CT0001.

Table 19.54: Circular Legends, 45 mm

Description	Color	Text	Catalog Number	\$ Price
Circular legends, 45 mm	Yellow	Blank	ZB6Y7001	3.40
		Emergency stop	ZB6Y7330	



ZB6Y2178



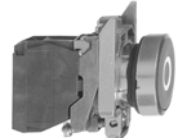
ZB6Y2304



ZB6Y7330



XB4BA31



XB4BA4322



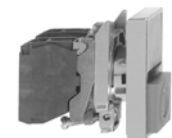
XB4BP51



XB4BL42



XB4BC21



XB4BL845

Table 19.55: Non-Illuminated Push Buttons, Momentary (screw clamp terminal connections)

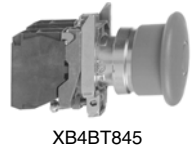
Shape of Head	Type of Push	Type of Contact		Marking	Cap Color	Catalog Number (Components)	\$ Price		
		N.O.	N.C.						
	Flush	1	—	—	Black	XB4BA21 (ZB4BZ101 + ZB4BA2)	38.50		
					Green	XB4BA31 (ZB4BZ101 + ZB4BA3)			
					Yellow	XB4BA51 (ZB4BZ101 + ZB4BA5)			
					Blue	XB4BA61 (ZB4BZ101 + ZB4BA6)			
		—	1	—	—	—	Red	XB4BA42 (ZB4BZ102 + ZB4BA4)	38.50
							Black	XB4BA25 (ZB4BZ105 + ZB4BA2)	
							Green	XB4BA35 (ZB4BZ105 + ZB4BA3)	
							Red	XB4BA45 (ZB4BZ105 + ZB4BA4)	
							Yellow	XB4BA55 (ZB4BZ105 + ZB4BA5)	
							Blue	XB4BA65 (ZB4BZ105 + ZB4BA6)	
	Flush	1	—	"I" (white)	Green	XB4BA3311 (ZB4BZ101 + ZB4BA331)	44.70		
	Flush	—	1	"O" (white)	Red	XB4BA4322 (ZB4BZ102 + ZB4BA432)	44.70		
	Flush with clear silicone boot (color of pusher unobscured)	1	—	—	Black	XB4BP21 (ZB4BZ101 + ZB4BP2)	53.00		
					Green	XB4BP31 (ZB4BZ101 + ZB4BP3)			
					Yellow	XB4BP51 (ZB4BZ101 + ZB4BP5)			
					Blue	XB4BP61 (ZB4BZ101 + ZB4BP6)			
		—	1	—	—	Red	XB4BP42 (ZB4BZ102 + ZB4BP4)	53.00	
	Extended	—	1	—	Red	XB4BL42 (ZB4BZ102 + ZB4BL4)	38.50		
		1	1	—	Red	XB4BL45 (ZB4BZ105 + ZB4BL4)	56.00		
	Mushroom head Ø 40 mm	1	—	—	Black	XB4BC21 (ZB4BZ101 + ZB4BC2)	56.00		

Table 19.56: Two Button Push Buttons, Momentary (screw clamp terminal connections)

Shape of Head	Type of Push	Type of Contact		Degree of Protection	Catalog Number (Components)	\$ Price
		N.O.	N.C.			
	One flush green push (marked "I") One extended red push (marked "O")	1	1	IP40	XB4BL845 (ZB4BZ105 + ZB4BL8434)	69.00

Legends..... pages 19-37 to 19-39

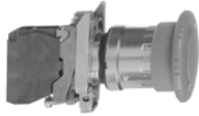
Table 19.57: Non-Illuminated Emergency Stop and Emergency Off Mushroom Head Push Buttons, Ø 40 mm, Red (screw clamp terminal connections)



XB4BT845



XB4BS9445



XB4BS542

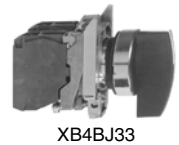
Shape of Head	Type of Push	Type of Contact		Catalog Number (Components)	\$ Price
		N.O.	N.C.		
	Trigger action push-pull▲	1	1	XB4BT845 (ZB4BZ105 + ZB4BT84)	101.00
	Trigger action turn-to-release▲	1	1	XB4BS8445 (ZB4BZ105 + ZB4BS844)	165.00
		1	2	XB4BS8441 (ZB4BZ141 + ZB4BS844)	
	Trigger action Key release ▲ (No. 455)	1	1	XB4BS9445 (ZB4BZ105 + ZB4BS944)	165.00
	Push-pull	—	1	XB4BT42 (ZB4BZ102 + ZB4BT4)	68.00
	Turn-to-release	—	1	XB4BS542 (ZB4BZ102 + ZB4BS54)	110.00
	Key release (No. 455)	—	1	XB4BS142 (ZB4BZ102 + ZB4BS14)	147.00

▲ Trigger action mushroom heads are tamper proof in that a change of contact state is not possible by teasing or floating the operator. For emergency stop applications, always use a trigger action push button (per EN/IEC 13850).

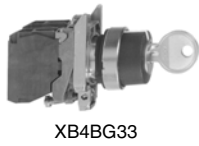
Table 19.58: Non-Illuminated Selector Switches and Key Switches (screw clamp terminal connections)■



XB4BD33



XB4BJ33



XB4BG33

Shape of Head	Type of Operator	Type of Contact		Number and Type of Positions	Catalog Number (Components)	\$ Price
		N.O.	N.C.			
	Standard lever, black	1	—	2-maintained	XB4BD21 (ZB4BZ101 + ZB4BD2)	51.00
		1	1	2-maintained	XB4BD25 (ZB4BZ105 + ZB4BD2)	68.00
		2	—	3-maintained	XB4BD33 (ZB4BZ103 + ZB4BD3)	68.00
				3-momentary to center	XB4BD53 (ZB4BZ103 + ZB4BD5)	75.00
	Extended lever, black	1	—	2-maintained	XB4BJ21 (ZB4BZ101 + ZB4BJ2)	51.00
		2	—	3-maintained	XB4BJ33 (ZB4BZ103 + ZB4BJ3)	68.00
				3-momentary to center	XB4BJ53 (ZB4BZ103 + ZB4BJ5)	75.00
			Key (No. 455)	1	—	2-maintained
	XB4BG41 (ZB4BZ101 + ZB4BG4)					123.00
2-momentary to left	XB4BG61 (ZB4BZ101 + ZB4BG6)					123.00
2	—				XB4BG03 (ZB4BZ103 + ZB4BG0)	141.00
					XB4BG33 (ZB4BZ103 + ZB4BG3)	141.00

Note: The symbol indicates key withdrawal position(s).

■ See page 19-29 for contact configurations.

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Table 19.59: Pilot Lights with Protected LED® (screw clamp terminal connections) ▲



XB4BV5

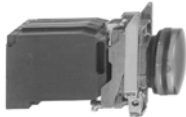
Shape of Head	Supply Voltage	Color	Catalog Number (Components)	\$ Price
	24 Vac/Vdc	White	XB4BV1 (ZB4BV1 + ZB4BV013)	72.00
		Green	XB4VB3 (ZB4VB3 + ZB4BV033)	
		Red	XB4VB4 (ZB4VB4 + ZB4BV043)	
		Yellow	XB4VB5 (ZB4VB5 + ZB4BV053)	
		Blue	XB4VB6 (ZB4VB6 + ZB4BV063)	
	110–120 Vac	White	XB4VG1 (ZB4VG1 + ZB4BV013)	72.00
		Green	XB4VG3 (ZB4VG3 + ZB4BV033)	
		Red	XB4VG4 (ZB4VG4 + ZB4BV043)	
		Yellow	XB4VG5 (ZB4VG5 + ZB4BV053)	
		Blue	XB4VG6 (ZB4VG6 + ZB4BV063)	

Table 19.60: Pilot Lights for BA9s Bulb (screw clamp terminal connections)



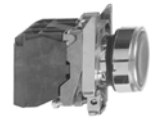
XB4BV64

Shape of Head	Supply Voltage	Color	Catalog Number (Components)	\$ Price
Direct supply, for BA9s (incandescent, LED, neon) V ≤ 250 V, 2.4 W bulb (bulb not included)				
	≤ 250 Vac/Vdc	White	XB4V61 (ZB4V6 + ZB4BV01)	51.00
		Green	XB4V63 (ZB4V6 + ZB4BV03)	
		Red	XB4V64 (ZB4V6 + ZB4BV04)	
		Yellow	XB4V65 (ZB4V6 + ZB4BV05)	
Transformer type with 1.2 VA, 6 V secondary. BA9s incandescent bulb included				
	110–120 Vac 50/60 Hz	White	XB4V31 (ZB4V3 + ZB4BV01)	117.00
		Green	XB4V33 (ZB4V3 + ZB4BV03)	
		Red	XB4V34 (ZB4V3 + ZB4BV04)	
		Yellow	XB4V35 (ZB4V3 + ZB4BV05)	



XB4BV33

Table 19.61: Illuminated Push Buttons, Momentary (screw clamp terminal connections) ▲



XB4BW33B5



XB4BW3465



XB4BW3545












































Shape of Head	Description	Type of Contact		Supply Voltage	Color of Push	Catalog Number (Components)	\$ Price
		N.O.	N.C.				
Flush							
		1	1	24 Vac/Vdc	White	XB4BW31B5 (ZB4BW0B15 + ZB4BW313)	119.00
					Green	XB4BW33B5 (ZB4BW0B35 + ZB4BW333)	
					Red	XB4BW34B5 (ZB4BW0B45 + ZB4BW343)	
					Yellow	XB4BW35B5 (ZB4BW0B55 + ZB4BW353)	
					Blue	XB4BW36B5 (ZB4BW0B65 + ZB4BW363)	
				110–120 Vac	White	XB4BW31G5 (ZB4BW0G15 + ZB4BW313)	119.00
					Green	XB4BW33G5 (ZB4BW0G35 + ZB4BW333)	
					Red	XB4BW34G5 (ZB4BW0G45 + ZB4BW343)	
					Yellow	XB4BW35G5 (ZB4BW0G55 + ZB4BW353)	
					Blue	XB4BW36G5 (ZB4BW0G65 + ZB4BW363)	
	Direct supply for BA9s 2.4 W max. bulb not included	1	1	≤ 250 Vac/Vdc	White	XB4BW3165 (ZB4BW065 + ZB4BW31)	99.00
					Green	XB4BW3365 (ZB4BW065 + ZB4BW33)	
					Red	XB4BW3465 (ZB4BW065 + ZB4BW34)	
					Yellow	XB4BW3565 (ZB4BW065 + ZB4BW35)	
					White	XB4BW3135 (ZB4BW035 + ZB4BW31)	
Green	XB4BW3335 (ZB4BW035 + ZB4BW33)						
Red	XB4BW3435 (ZB4BW035 + ZB4BW34)						
Yellow	XB4BW3535 (ZB4BW035 + ZB4BW35)						
White	XB4BW3145 (ZB4BW045 + ZB4BW31)	163.00					
Green	XB4BW3345 (ZB4BW045 + ZB4BW33)						
Red	XB4BW3445 (ZB4BW045 + ZB4BW34)						
Yellow	XB4BW3545 (ZB4BW045 + ZB4BW35)						
Extended							
		1	1	24 Vac/Vdc	White	XB4BW11B5 (ZB4BW0B15 + ZB4BW113)	113.00
					Green	XB4BW13B5 (ZB4BW0B35 + ZB4BW133)	
					Red	XB4BW14B5 (ZB4BW0B45 + ZB4BW143)	
					Yellow	XB4BW15B5 (ZB4BW0B55 + ZB4BW153)	
					Blue	XB4BW16B5 (ZB4BW0B65 + ZB4BW163)	
				110–120 Vac	White	XB4BW11G5 (ZB4BW0G15 + ZB4BW113)	113.00
					Green	XB4BW13G5 (ZB4BW0G35 + ZB4BW133)	
					Red	XB4BW14G5 (ZB4BW0G45 + ZB4BW143)	
					Yellow	XB4BW15G5 (ZB4BW0G55 + ZB4BW153)	
					Blue	XB4BW16G5 (ZB4BW0G65 + ZB4BW163)	

▲ For 240 V LED, replace the last "B" or "G" in the catalog number with an "M". For example, XB4BV1 (24 V) becomes XB4VM1 (240 V—AC only).

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19 PUSH BUTTONS AND OPERATOR INTERFACE

Table 19.62: Non-Illuminated Operators, Momentary—Unmarked

Shape of Head	Type of Push	Cap Color	Catalog Number	\$ Price
	Flush, without color cap ▲	—	ZB4BA0	11.00
	Flush, with set of 6 color caps	White	ZB4BA9	13.00
		Black		
		Green		
		Red		
		Yellow		
		Blue		
	Flush	White	ZB4BA1	13.00
		Black	ZB4BA2	
		Green	ZB4BA3	
		Red	ZB4BA4	
		Yellow	ZB4BA5	
		Blue	ZB4BA6	
	Flush with transparent cap, for insertion of legend ■	White	ZB4BA18	16.00
		Green	ZB4BA38	
		Red	ZB4BA48	
		Yellow	ZB4BA58	
		Blue	ZB4BA68	
		Gray	ZB4BA8	
	Booted (clear silicone) Cap color unobscured	White	ZB4BP1	25.80
		Black	ZB4BP2	
		Green	ZB4BP3	
		Red	ZB4BP4	
		Yellow	ZB4BP5	
		Blue	ZB4BP6	
	Booted (clear silicone) for insertion of legend ■ Cap color unobscured	White	ZB4BP18	29.00
		Green	ZB4BP38	
		Red	ZB4BP48	
		Yellow	ZB4BP58	
		Blue	ZB4BP68	
		Gray	ZB4BP8	
	Extended	White	ZB4BL1	13.00
		Black	ZB4BL2	
		Green	ZB4BL3	
		Red	ZB4BL4	
		Yellow	ZB4BL5	
		Blue	ZB4BL6	
	Guarded Head	White	ZB4BA16	35.00
		Black	ZB4BA26	
		Green	ZB4BA36	
		Red	ZB4BA46	
		Yellow	ZB4BA56	
		Blue	ZB4BA66	

▲ Color cap to be ordered separately, see page 19-39.
■ For legend ordering information, see page 19-39.

Table 19.63: Non-Illuminated Operators, Momentary—Premarked

Shape of Head	Type of Push	Marking Text	Marking Color	Cap Color	Catalog Number	\$ Price
	Flush	I	White	Green	ZB4BA331	18.60
			Black	White	ZB4BA131	
		START	White	Green	ZB4BA333	
			Black	White	ZB4BA133	
		ON	White	Green	ZB4BA341	
			Black	White	ZB4BA141	
		RESET	White	Black	ZB4BA222	
		JOG	White	Black	ZB4BA245	
		O	White	Red	ZB4BA432	
				Black	ZB4BA232	
		STOP	White	Red	ZB4BA434	
				Black	ZB4BA234	
		OFF	White	Red	ZB4BA435	
				Black	ZB4BA235	
↑ ◆	White	Black	ZB4BA334			
		White	ZB4BA335			
	Extended	O	White	Red	ZB4BL432	18.60
			Black	ZB4BL232		
		STOP	White	Red	ZB4BL434	
				Black	ZB4BL234	
		OFF	White	Red	ZB4BL435	
				Black	ZB4BL235	

◆ Cap supplied not clipped-in, allowing orientation of arrow in any one of 4 directions: ↑, ↓, ← or →

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ZB4BC24



ZB4BC2



ZB4BR2



ZB4BH02



ZB4BA8134



ZB4BL8312



ZB4BL9312

Table 19.64: Mushroom Heads, Momentary

Shape of Head	Diameter of Head	Color of Head	Catalog Number	\$ Price
	30 mm	Black	ZB4BC24	29.40
		Green	ZB4BC34	
		Red	ZB4BC44	
		Yellow	ZB4BC54	
	40 mm	Blue	ZB4BC64	29.40
		Black	ZB4BC2	
		Green	ZB4BC3	
		Red	ZB4BC4	
		Yellow	ZB4BC5	
		Blue	ZB4BC6	
	60 mm	Black	ZB4BR2	35.00
		Green	ZB4BR3	
Red		ZB4BR4		
Yellow		ZB4BR5		
		Blue	ZB4BR6	

Table 19.65: Non-Illuminated Push-on/Push-off Operators

Shape of Head	Type of Push	Color of Push	Catalog Number	\$ Price
	Flush	White	ZB4BH01	17.60
		Black	ZB4BH02	
		Green	ZB4BH03	
		Red	ZB4BH04	
		Yellow	ZB4BH05	
		Blue	ZB4BH06	
	Extended	White	ZB4BH1	17.60
		Black	ZB4BH2	
		Green	ZB4BH3	
		Red	ZB4BH4	
		Yellow	ZB4BH5	
		Blue	ZB4BH6	

Table 19.66: Two Head Operators, Momentary

Shape of Head	Description	Color of Pushers	Degree of Protection▲	Catalog Number	\$ Price
No Marking					
	Two flush	Green	IP40	ZB4BA8134	20.80
		Red	IP66	ZB4BA9134	37.20
		White	IP40	ZB4BA8112	20.80
		Black	IP66	ZB4BA9112	37.20
	One flush One extended	Green	IP40	ZB4BL8334	20.80
		Red	IP66	ZB4BL9334	37.20
		White	IP40	ZB4BL8312	20.80
		Black	IP66	ZB4BL9312	37.20
Premarked					
	Two flush (marked "I") (marked "O")	Green	IP40	ZB4BA8234	24.80
		Red	IP66	ZB4BA9234	41.40
		White	IP40	ZB4BA8212	24.80
		Black	IP66	ZB4BA9212	41.40
	One flush (marked "I") One extended (marked "O")	Green	IP40	ZB4BL8434	24.80
		Red	IP66	ZB4BL9434	41.40
		White	IP40	ZB4BL8412	24.80
		Black	IP66	ZB4BL9412	41.40

▲ IP66 version utilizes boot (included).

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ZB4BS834



ZB4BT4



ZB4BS64



ZB4BS74

Table 19.67: Mushroom Heads for Maintained Push Buttons

Shape of Head	Type of Push	Diameter of Head	Color	Catalog Number	\$ Price
	Trigger action Push-pull ▲	40 mm	Red	ZB4BT84	54.00
	Trigger action Turn-to-release ▲	30 mm	Red	ZB4BS834	112.00
		40 mm	Red	ZB4BS844	112.00
		40 mm	Red marked "EMO"	ZB4BS84430	118.00
	Trigger action Key release (No. 455) ▲	60 mm	Red	ZB4BS864	112.00
		30 mm	Red	ZB4BS934	112.00
		40 mm	Red	ZB4BS944 ■	112.00
	Push-pull	40 mm	Red	ZB4BS964	112.00
			Black	ZB4BT2	40.40
		60 mm	Red	ZB4BT4	40.40
			Black	ZB4BX2	46.00
	Turn-to-release	30 mm	Red	ZB4BX4	46.00
			Black	ZB4BS42	78.00
			Red	ZB4BS44	78.00
		40 mm	Black	ZB4BS52	78.00
			Red	ZB4BS54	78.00
			Red marked "EMO"	ZB4BS5430	85.00
			Yellow	ZB4BS55	78.00
		60 mm	Yellow marked "Robot Stop"	ZB4BS5550	85.00
			Black	ZB4BS62	90.00
			Red	ZB4BS64	90.00
	Key release (No. 455)	30 mm	Black	ZB4BS72	112.00
			Red	ZB4BS74	112.00
		40 mm	Black	ZB4BS12	112.00
			Red	ZB4BS14 ■	112.00
60 mm	Black	ZB4BS22	112.00		
	Red	ZB4BS24	112.00		

▲ Trigger action mushroom heads are tamper proof in that a change of contact state is not possible by teasing or floating the operator. For emergency stop applications, always use a trigger action push button (per EN/IEC 13850).

■ Other key numbers:

- key no. 421E: add the suffix 12 to the catalog number.
- key no. 458A: add the suffix 10 to the catalog number.
- key no. 520E: add the suffix 14 to the catalog number.
- key no. 3131A: add the suffix 20 to the catalog number.

Example: The catalog number for a head with key No. 421E for a 2 position maintained, lockable selector switch, with key withdrawal from the left-hand position, becomes: ZB4BG212.

Table 19.68: Circular Legends for Emergency Stop Mushroom Heads (yellow background)

Diameter	Text	Catalog Number	\$ Price
60 mm	Blank	ZBY9101	3.40
	EMERGENCY STOP	ZBY9330	
90 mm	Blank	ZBY8101	
	EMERGENCY STOP	ZBY8330	

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ZBY9330

Table 19.69: Non-Illuminated Selector Switches ■



ZB4BD4
Standard Lever



ZB4BJ3
Extended Lever

Color	Number and Type of Positions		Standard Lever ▲	Extended Lever	\$ Price
			Catalog Number		
Black	2-maintained		ZB4BD2	ZB4BJ2	24.00
Black	2-momentary from right to left		ZB4BD4	ZB4BJ4	29.40
Black	3-maintained		ZB4BD3	ZB4BJ3	24.00
Black	3-momentary to center		ZB4BD5	ZB4BJ5	29.40
Black	3-momentary from left to center		ZB4BD7	ZB4BJ7	29.40
Black	3-momentary from right to center		ZB4BD8	ZB4BJ8	29.40

▲ For colored lever, add the following code to the end of part number: 01–white, 03–green, 04–red, 05–yellow, 06–blue (Example: ZB4BD204).

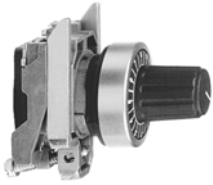
Table 19.70: Non-Illuminated Key Switches ■

Type of Operator	Number and Type of Positions		Catalog Number	\$ Price	
 Key (No. 455) ♦ Note: The symbol indicates the key withdrawal position(s). ■ See Table 19.71 for contact configurations. ♦ Other key numbers: —key no. 421E: add the suffix 12 to the catalog number. —key no. 458A: add the suffix 10 to the catalog number. —key no. 520E: add the suffix 14 to the catalog number. —key no. 3131A: add the suffix 20 to the catalog number. Example: For a head with key no. 421E for a 2 position maintained, lockable selector switch, with key withdrawal from the left-hand position, order ZB4BG212.	2-maintained		ZB4BG2	90.00	
			ZB4BG02		
			ZB4BG4		
	2-momentary from right to left		ZB4BG6		
		3-maintained			ZB4BG0
					ZB4BG3
					ZB4BG03
					ZB4BG04
					ZB4BG5
					ZB4BG9
			ZB4BG09		
	3-momentary from left to center		ZB4BG1		
			ZB4BG01		
	3-momentary to center		ZB4BG7		
			ZB4BG8		
3-momentary from right to center		ZB4BG05			
		ZB4BG08			

Table 19.71: Sequence of Contacts on Selector Switch Bodies

Unit Type	Selector Switches															
	2-position						3-position									
Operator Plunger Position	315°			45°			315°			0°			45°			
	L	C	R	L	C	R	L	C	R	L	C	R	L	C	R	
Up																
Down																
Contact Block Location																
Contacts	N/O	O	O	O	X	X	X	X	X	O	O	O	O	O	X	X
	N/C	X	X	X	O	O	O	O	O	X	X	X	X	X	O	O

Legends..... pages 19-37 to 19-39



ZB4BD922

Table 19.72: Potentiometer Operator (with Mounting Collar)

Shape of Head	Description	Application	Catalog Number	\$ Price
	For potentiometer with shaft length 1.73 to 1.97 in. (44 to 50 mm) (potentiometer not included)	For shaft Ø 1/4 in. (6.35 mm)	ZB4BD922	142.00
		For shaft Ø 0.24 in. (6 mm)	ZB4BD912	

Table 19.73: Joysticks (54 mm, Extended Operating Shaft) ▲

Description	Contact Operation	Action	Catalog Number	\$ Price
2 direction	1 step 1 N.O. contact per direction	Maintained	XD4PA12	250.00
		Momentary	XD4PA22	
4 direction	1 step 1 N.O. contact per direction	Maintained	XD4PA14	316.00
		Momentary	XD4PA24	

▲ Do not use standard contact blocks ZBE10* (single) or ZBE20* (double).



XD4PA12

Table 19.74: Legends for Joysticks

Description	For use with	Color	Catalog Number	\$ Price
Legends 30 x 48 mm for customer engraving	2 direction	Black one side Red reverse	ZBG2201	3.40
		White one side Yellow reverse	ZBG2401	
Legends 48 x 48 mm for customer engraving	4 direction	Black one side Red reverse	ZBG4201	
		White one side Yellow reverse	ZBG4401	

Table 19.75: Two Position Toggle Switch

Shape of Head	Color	Type of Positions	Catalog Number	\$ Price
	Black	Maintained	ZB4BD28	46.60
	Black	Momentary	ZB4BD48	

Table 19.76: Reset Operators, Flush, Adjustable Shaft


Shape of Head	Travel		Actuation Distance		Color	Catalog Number	\$ Price	
	in.	mm	in.	mm				
	0.39	10	0.24–0.63	6–16	Black	XB4BA821	30.10	
					Red	XB4BA841		
					Blue	XB4BA861		
			0.63–1.02	16–26	Black	XB4BA822		30.10
					Red	XB4BA842		
					Blue	XB4BA862		
	0.55	14	1.18–5.12	30–130	Black	XB4BA921	36.10	
					Red	XB4BA941		
					Blue	XB4BA961		
			5.12–10.12	130–257	Black	XB4BA922		45.10
					Red	XB4BA942		
					Blue	XB4BA962		

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XB4BA8*1

Table 19.77: Pilot Light Heads

Shape of Head	For Use with Body Comprising Light Module Type	Color of Lens	Catalog Number	\$ Price
 ZB4BV063	Protected LED® only	White Green Red Yellow Blue	ZB4BV013 ZB4BV033 ZB4BV043 ZB4BV053 ZB4BV063	7.60
	Protected LED only Fresnel (jeweled) lens ▲	White Green Red Amber Blue	ZB4BV013S ZB4BV033S ZB4BV043S ZB4BV053S ZB4BV063S	7.60
	For BA9s incandescent bulb, neon or LED only ■	White Green Red Yellow Blue Clear	ZB4BV01 ZB4BV03 ZB4BV04 ZB4BV05 ZB4BV06 ZB4BV07	7.60
	For BA9s incandescent bulb, neon or LED Fresnel (jeweled) lens ■	White Green Red Amber Blue Clear	ZB4BV01S ZB4BV03S ZB4BV04S ZB4BV05S ZB4BV06S ZB4BV07S	7.60

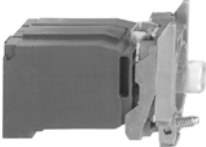
▲ For use in bright ambient conditions, for example, in sunlight.

Table 19.78: Complete Bodies (Mounting Collar + Light Module for BA9s Incandescent Bulb, Neon or LED)

Description	Light Source	Supply Voltage (V)	Catalog Number	\$ Price
Screw clamp terminal connections				
Direct supply	BA9s bulb 2.4 W max. Not included ■	≤250	ZB4BV6	38.80
Direct supply	BA9s incandescent bulb included	24 v 2 Watt	ZB4BV624	49.20
Direct supply	BA9s incandescent bulb included	120 v 2.4 Watt	ZB4BV6120	49.20
Transformer type 1.2 VA, 6 V secondary	BA9s incandescent bulb included	110–120 Vac 50/60 Hz	ZB4BV3	98.00
		230–240 Vac 50/60 Hz	ZB4BV4	
		400–50 Hz	ZB4BV5	
		440–480 Vac 60 Hz	ZB4BV8	
		550–600 Vac 60 Hz	ZB4BV9	

■ Order bulb separately; see page 19-40. For BA9 LED, see page 19-116.






Table 19.79: Complete Bodies (Mounting Collar + Light Module with Protected LED®) ♦

Light Source	Supply Voltage	Color of Light Source	Catalog Number	\$ Price				
Screw clamp terminal connections ★								
 ZB4BV•	12 Vac/Vdc	White Green Red Yellow Blue	ZB4BVJ1 ZB4BVJ3 ZB4BVJ4 ZB4BVJ5 ZB4BVJ6	57.00				
		24 Vac/Vdc	White Green Red Yellow Blue		ZB4VB1 ZB4VB3 ZB4VB4 ZB4VB5 ZB4VB6	57.00		
			24–120 Vac/Vdc		White Green Red Yellow Blue		ZB4VBG1 ZB4VBG3 ZB4VBG4 ZB4VBG5 ZB4VBG6	57.00
					110–120 Vac		White Green Red Yellow Blue	
Flashing	24 Vac/Vdc			White Green Red Yellow Blue			ZB4BV18B1 ZB4BV18B3 ZB4BV18B4 ZB4BV18B5 ZB4BV18B6	
		110–120 Vac		White Green Red Yellow Blue		ZB4BV18G1 ZB4BV18G3 ZB4BV18G4 ZB4BV18G5 ZB4BV18G6	66.00	

♦ For 240 V LED, replace the last "B" or "G" in the catalog number with an "M". For example, ZB4VB1 (24 V) becomes ZB4VM1 (240 V).
★ For Quick-Connect version, add "3" to the end of the catalog number Example: ZB4BVJ13 (Quick-Connect size 1 x 1/40" or 2 x 0.110").

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Table 19.80: Heads for Momentary Illuminated Push Buttons

Shape of Head	Type of Push	Color	Catalog Number	\$ Price
Only use with Protected LED® light modules				
	Flush	White	ZB4BW313	18.60
		Green	ZB4BW333	
		Red	ZB4BW343	
		Yellow	ZB4BW353	
		Blue	ZB4BW363	
	Flush with clear silicone boot	White	ZB4BW513	31.00
		Green	ZB4BW533	
		Red	ZB4BW543	
		Yellow	ZB4BW553	
		Blue	ZB4BW563	
	Flush for insertion of legend	White	ZB4BA18	16.00
		Green	ZB4BA38	
		Red	ZB4BA48	
		Yellow	ZB4BA58	
		Blue	ZB4BA68	
	Extended	White	ZB4BW113	13.00
		Green	ZB4BW133	
		Red	ZB4BW143	
		Yellow	ZB4BW153	
		Blue	ZB4BW163	
	Mushroom (40 mm)	Clear	ZB4BW413	29.40
		Green	ZB4BW433	
		Red	ZB4BW443	
		Yellow	ZB4BW453	
		Blue	ZB4BW463	

Only use with light modules for a BA9s incandescent bulb, neon or LED



	Flush	White	ZB4BW31	18.60
		Green	ZB4BW33	
		Red	ZB4BW34	
		Yellow	ZB4BW35	
		Blue	ZB4BW36	
		Clear	ZB4BW37	
	Extended	White	ZB4BW11	13.00
		Green	ZB4BW13	
		Red	ZB4BW14	
		Yellow	ZB4BW15	
		Blue	ZB4BW16	
		Clear	ZB4BW17	

Table 19.81: Heads for Maintained Illuminated Push Buttons




Shape of Head	Type of Push	Color of Lens	Catalog Number	\$ Price
Only use with Protected LED light modules				
	Push/Pull Mushroom (40 mm)	Clear	ZB4BW613	46.00
		Green	ZB4BW633	
		Red	ZB4BW643	
		Yellow	ZB4BW653	
		Blue	ZB4BW663	

Table 19.82: Illuminated Push-On/Push-Off Operators

Shape of Head	Type of Push	Color of Lens	Catalog Number	\$ Price
Only use with Protected LED light modules				
	Flush	White	ZB4BH013	24.80
		Green	ZB4BH033	
		Red	ZB4BH043	
		Yellow	ZB4BH053	
		Blue	ZB4BH063	
	Extended	White	ZB4BH13	19.60
		Green	ZB4BH33	
		Red	ZB4BH43	
		Yellow	ZB4BH53	
		Blue	ZB4BH63	

ZB4BW333

ZB4BW563

ZB4BW113

ZB4BW33

ZB4BW14

ZB4BW643

ZB4BH033

ZB4BH63

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Table 19.83: Two Button with Clear Pilot Light, Momentary (IP40) ▲

Shape of Head	Description	Color of Pushers	Catalog Number	\$ Price
Only use with Protected LED® light modules (Protected LED determines pilot light color)				
	1 flush 1 central pilot light 1 flush	Black Red	ZB4BW812743	29.00
		Green Red	ZB4BW813743	
		White Black	ZB4BW811723	
	1 flush 1 central pilot light 1 extended	Black Red	ZB4BW832743	29.00
		Green Red	ZB4BW833743	
		White Black	ZB4BW831723	
Only use with Protected LED light modules (Protected LED determines pilot light color)—premarked				
	1 flush (marked "I") 1 central pilot light 1 flush (marked "O")	Black Red	ZB4BW822743	33.20
		Green Red	ZB4BW823743	
		White Black	ZB4BW821723	
	1 flush (marked "I") 1 central pilot light 1 extended (marked "O")	Black Red	ZB4BW842743	33.20
		Green Red	ZB4BW843743	
		White Black	ZB4BW841723	

▲ For IP66 degree of protection, install clear sealing boot ZBW008, see page 19-41.

Table 19.84: Illuminated Selector Switches, Standard Lever

Shape of Head	Number and Type of Positions	Catalog Number ■	\$ Price
Only use with Protected LED light modules			
	2-maintained		ZB4BK12*3 35.00
	2-momentary from right to left		ZB4BK14*3 51.00
	3-maintained		ZB4BK13*3 35.00
	3-momentary to center		ZB4BK15*3 51.00
	3-momentary from right to center		ZB4BK18*3 51.00
	3-momentary from left to center		ZB4BK17*3 51.00

■ Designate color as follows: 1—white, 3—green, 4—red, 5—yellow, 6—blue.

Table 19.85: Sequence of Contacts on Illuminated Selector Switch Bodies

Unit Type	Selector Switches										
	2-position				3-position						
	315°		45°		315°		0°		45°		
Operator Plunger Position	Up										
	Down										
Contact Block Location	L	R	L	R	L	R	L	R	L	R	
Contacts	N/O	O	O	X	X	X	O	O	O	O	X
	N/C	X	X	O	O	O	X	X	X	X	O

Note: L=Left, R=Right, O=Open, X=Closed

3 Position Selector Switch

			Contact block guide
X	O	O	1 N.O. (left)
O	X	O	2 N.C. wired in series (left and right)
O	O	X	1 N.O. (right)
X	X	O	1 N.C. (right)
O	X	X	1 N.C. (left)
X	O	X	2 N.O. wired in parallel (left and right)

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ZB4BZ101

Table 19.86: Contact Blocks (Mounting Collar with Contact Blocks)

Description	Type of Contact		Catalog Number	\$ Price
	N.O.	N.C.		
Screw clamp terminal connections	1	—	ZB4BZ101	22.00
	—	1	ZB4BZ102	22.00
	2	—	ZB4BZ103	38.20
	—	2	ZB4BZ104	38.20
	1	1	ZB4BZ105	38.20
	1	2	ZB4BZ141	55.00

For Quick-Connect version add "3" to the end of the catalog number Example: ZB4BZ1013 (Quick-Connect size 1 x 0.250" or 2 x 0.110").
For Ring Tongue compatible blocks add "9" to the end of the catalog number (Example: ZB4BZ1029).
Electrical components with connection by printed circuit board pins are available. Refer to Catalog 9001CT0001.
Electrical components with connection by plug-in connector are available. Refer to Catalog 9001CT0001.

Table 19.87: Complete Bodies (Mounting Collar + Single Contact Block + Light Module with Protected LED®)

Light Source	Type of Contact ♦		Color	Supply Voltage ★		\$ Price	
	N.O.	N.C.		24 Vac/Vdc	110–120 Vac		
Screw clamp terminal connections							
Protected LED	1	—	White	ZB4BW0B11	ZB4BW0G11	73.00	
			Green	ZB4BW0B31	ZB4BW0G31		
			Red	ZB4BW0B41	ZB4BW0G41		
	—	1	Yellow	ZB4BW0B51	ZB4BW0G51		73.00
			Blue	ZB4BW0B61	ZB4BW0G61		
			White	ZB4BW0B12	ZB4BW0G12		
2	—	Green	ZB4BW0B32	ZB4BW0G32	90.00		
		Red	ZB4BW0B42	ZB4BW0G42			
		Yellow	ZB4BW0B52	ZB4BW0G52			
		Blue	ZB4BW0B62	ZB4BW0G62			
		White	ZB4BW0B13	ZB4BW0G13		90.00	
		Green	ZB4BW0B33	ZB4BW0G33			
Red	ZB4BW0B43	ZB4BW0G43					
Yellow	ZB4BW0B53	ZB4BW0G53					
Blue	ZB4BW0B63	ZB4BW0G63	90.00				
1	1	White		ZB4BW0B15	ZB4BW0G15		
		Green		ZB4BW0B35	ZB4BW0G35		
		Red		ZB4BW0B45	ZB4BW0G45		
		Yellow		ZB4BW0B55	ZB4BW0G55		
		Blue		ZB4BW0B65	ZB4BW0G65		

♦ Can be fitted with additional contact blocks, see page 19-35.
★ For 240V LED, replace the "B" or "G" with "M". (Example: change "ZB4BW0B11 (24V) to ZB4BW0M11 (240V)")



ZB4BW0••3



ZB4BW0•6

Table 19.88: Mounting Collar, Contact Block and Light Module (with screw clamp terminal connections) ▼

Supply	Light Source	Supply Voltage	Type of Contact ▼		Color of Light Source	Catalog Number	\$ Price
			N.O.	N.C.			
Screw clamp terminal connections							
Direct supply	BA9s 2.4 W max. bulb Not included ▼	≤250 Vac/Vdc	1	—	—	ZB4BW061	55.00
			—	1	—	ZB4BW062	55.00
			2	—	—	ZB4BW063	71.00
			1	1	—	ZB4BW065	71.00
			1	—	—	ZB4BW031	114.00
Transformer type 1.2 VA, 6 V secondary	BA9s incandescent bulb included	110–120 Vac 50/60 Hz	1	1	—	ZB4BW035	130.00
			1	—	—	ZB4BW041	114.00
		230–240 Vac 50/60 Hz	1	1	—	ZB4BW045	130.00
			1	—	—	ZB4BW081	114.00
		440–480 Vac 60 Hz	1	—	—	ZB4BW085	130.00
			1	1	—	ZB4BW085	130.00

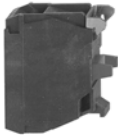
▼ Order bulb separately, see page 19-40.
△ Can be fitted with additional contact blocks, see page 19-35.



ZB4BW0•5



ZB4BZ009



ZBE101



ZBE203



ZBVB

Table 19.89: Body/Mounting Collar

For use with	Catalog Number	\$ Price
Electrical block (contact or light module)	ZB4BZ009	5.40

Table 19.90: Add-On Contact Block (with screw clamp terminal connections) ★▼

Description	Type of Contact		Catalog Number	\$ Price
	N.O.	N.C.		
Standard single contact blocks▲■	1	—	ZBE101	16.40
	—	1	ZBE102	16.40
	2	—	ZBE203	33.20
Standard double contact blocks▲■	—	2	ZBE204	33.20
	1	1	ZBE205	33.20
	1	—	ZBE1016	32.80
Special contact blocks for low power switching ◆	—	1	ZBE1026	32.80
	1	—	ZBE1016P	32.80
Low-power switching	Dusty environment ◆ (IP5X, 50 µm dust)	—	ZBE1026P	32.80
		1	—	ZBE201
Staggered contacts	Early make N/O	—	ZBE202	16.40
		1	—	ZBE201
	Late break N/C	—	ZBE202	16.40
		1	1	ZB4BZ106
Overlapping N/O+N/C	—	2	ZB4BZ107	32.80
	1	—	—	—

- ▲ For Quick-Connect version add "3" to the end of the catalog number Example: ZBE1013 (Quick-Connect size 1 x 0.250" or 2 x 0.110").
- For Ring Tongue compatible blocks add "9" to the end of the catalog number (Example: ZBE1029).
- ◆ Cannot stack additional contact blocks onto these blocks.

Table 19.91: Light Modules (with screw clamp terminal connections) ★▼

Description	Supply Voltage	Color of Light Source	Catalog Number	\$ Price
	12 Vac/Vdc	White	ZBVJ1	52.00
		Green	ZBVJ3	
		Red	ZBVJ4	
		Yellow	ZBVJ5	
		Blue	ZBVJ6	
		White	ZBVB1	
Green	ZBVB3			
Red	ZBVB4			
Yellow	ZBVB5			
Blue	ZBVB6			
White	ZBVG1	52.00		
Green	ZBVG3			
Red	ZBVG4			
Yellow	ZBVG5			
Blue	ZBVG6			
White	ZBVBG1		52.00	
Green	ZBVBG3			
Red	ZBVBG4			
Yellow	ZBVBG5			
Blue	ZBVBG6			
White	ZBVM1	52.00		
Green	ZBVM3			
Red	ZBVM4			
Yellow	ZBVM5			
Blue	ZBVM6			
Direct supply for BA9s 2.4 W max. bulb Not included △	≤ 250 Vac/Vdc		—	ZBV6

Protected LED

- ★ Electrical components with connection by printed circuit board pins are available. Refer to Catalog 9001CT0001 for more details.
- ▼ Electrical components with connection by plug-in connector are available. Refer to Catalog 9001CT0001 for more details.
- △ See page 19-40 for bulb information.

Table 19.92: Spring Terminal Products for XB4 22 mm Push Buttons



ZB4BZ009

Body/Mounting Collar

For use with	Catalog Number	\$ Price
Contact block or light module	ZB4BZ009	5.40

Contact Blocks ▲

Spring Terminal Connections, Contacts for Standard Applications

Description	Type of contact	Spring Terminal Connections		Catalog Number	\$ Price
		N/O	N/C		
Contact blocks	Single	1	–	ZBE1015	18.00
		–	1	ZBE1025	18.00
	Single with body/mounting collar	1	–	ZB4BZ1015	24.00
		–	1	ZB4BZ1025	24.00
		2	–	ZB4BZ1035	42.00
		–	2	ZB4BZ1045	42.00
		1	1	ZB4BZ1055	42.00
		–	1		



ZBE1015

Light Modules ▲

Spring Terminal Connections

Description	Supply voltage	Color of light source	Catalog Number	\$ Price
Integral LED (to combine with heads for integral LED)	12 Vac/Vdc	White	ZBVJ15	57.00
		Green	ZBVJ35	57.00
		Red	ZBVJ45	57.00
		Orange	ZBVJ55	57.00
		Blue	ZBVJ65	57.00
	24 Vac/Vdc	White	ZBVB15	57.00
		Green	ZBVB35	57.00
		Red	ZBVB45	57.00
		Orange	ZBVB55	57.00
		Blue	ZBVB65	57.00
	110–120 Vac	White	ZBVG15	57.00
		Green	ZBVG35	57.00
		Red	ZBVG45	57.00
		Orange	ZBVG55	57.00
		Blue	ZBVG65	57.00
	230–240 Vac	White	ZBVM15	57.00
		Green	ZBVM35	57.00
		Red	ZBVM45	57.00
		Orange	ZBVM55	57.00
		Blue	ZBVM65	57.00

Protected LED™

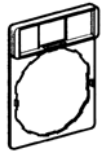
▲ Additional blocks **cannot** be attached to the back of these contact blocks or light modules. However, spring terminal contact blocks can be mounted behind screw terminal contact blocks.



ZB4BZ1015

Table 19.93: Standard (30 x 40 mm) Legend Holders for 8 x 27 mm Legends

Description	Legend		Catalog Number	\$ Price
	Color	Text		
Without legend ▲	—	—	ZBZ32	2.00
With blank legend (for engraving)	Black or red background	—	ZBY2101	3.40
	White or yellow background	—	ZBY4101	
Custom Legend (Specify Engraving) 2 lines of 11 characters (including spaces) maximum per line	Black background	White	ZBY2002	14.20
	Red background	White	ZBY2004	
	White background	Black	ZBY4001	
	Yellow background	Black	ZBY4005	
With legend marked with international language	Black or red background ■	O (black background)	ZBY2146	3.40
		O (red background)	ZBY2931	
		I	ZBY2147	
		II	ZBY2148	
		O-I	ZBY2178	
		I-II	ZBY2179	
With legend marked with English language	Black or red background ■	AUTO	ZBY2115	3.40
		AUTO-HAND	ZBY2364	
		AUTO-O-HAND	ZBY2385	
		CLOSE	ZBY2314	
		DOWN	ZBY2308	
		EMERGENCY STOP	ZBY2330	
		FAST	ZBY2328	
		FORWARD	ZBY2305	
		FOR-REV	ZBY2371	
		HAND	ZBY2316	
		HAND-OFF-AUTO	ZBY2387	
		INCH	ZBY2321	
		JOG	ZBY2382	
		LEFT	ZBY2310	
		OFF	ZBY2312	
		OFF-ON	ZBY2367	
		ON	ZBY2311	
		OPEN	ZBY2313	
		POWER ON	ZBY2326	
		RESET (red background)	ZBY2323	
		RESET (black background)	ZBY2322	
		REVERSE	ZBY2306	
		RIGHT	ZBY2309	
		RUN	ZBY2334	
		SLOW	ZBY2327	
		START	ZBY2303	
		STOP	ZBY2304	
STOP-START	ZBY2366			
UP	ZBY2307			



ZBZ32



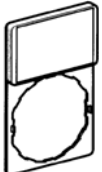
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ZBY2303



ZBZ33



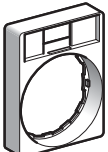
ZBY610*

▲ For marked legends, see page 19-38.

■ Start functions: white letters on black background. Stop functions: white letters on red background (unless otherwise specified above).

Table 19.94: Large (30 x 50 mm) Legend Holders for 18 x 27 mm Legends

Description ♦	Color	Catalog Number	\$ Price
Without legend insert	—	ZBZ33	2.00
With blank legend insert	Black or red background	ZBY6101	3.40
	White or yellow background	ZBY6102	



ZBZ34



ZBY*H101

Table 19.95: 30 x 40 mm legend holder (flush mounting with bezel) for 8 x 27 mm legends

Description ♦	Color	Catalog Number	\$ Price
Without legend	—	ZBZ34	2.00
With blank legend	Black or red background	ZBY2H101	3.40
	White or yellow background	ZBY4H101	3.40



ZBZ35



ZBY6H10*

Table 19.96: 30 x 50 mm legend holder (flush mounting with bezel) for 18 x 27 mm legends

Description ♦	Color	Catalog Number	\$ Price
Without legend	—	ZBZ35	4.20
With blank legend	Black or red background	ZBY6H101	5.40
	White or yellow background	ZBY6H102	5.40

♦ For custom Legends, see page 19-38.

Table 19.97: Marked Legends for 8 x 27 mm (for 30 x 40 mm legend holders ZBZ32)



Color	Marking	Text	Catalog Number	\$ Price
Black or red background ▲	International	O (black background) O (red background) I II O-I I-II I-O-II	ZBY02146 ZBY02931 ZBY02147 ZBY02148 ZBY02178 ZBY02179 ZBY02186	1.70
	English	AUTO AUTO-HAND AUTO-O-HAND CLOSE DOWN EMERGENCY STOP FAST FORWARD FOR-REV HAND HAND-OFF-AUTO INCH JOG LEFT OFF OFF-ON ON OPEN POWER ON RESET (red background) RESET (black background) REVERSE RIGHT RUN SLOW START STOP STOP-START UP	ZBY02115 ZBY02364 ZBY02385 ZBY02314 ZBY02308 ZBY02330 ZBY02328 ZBY02305 ZBY02371 ZBY02316 ZBY02387 ZBY02321 ZBY02382 ZBY02310 ZBY02312 ZBY02367 ZBY02311 ZBY02313 ZBY02326 ZBY02323 ZBY02322 ZBY02306 ZBY02309 ZBY02334 ZBY02327 ZBY02303 ZBY02304 ZBY02366 ZBY02307	1.70

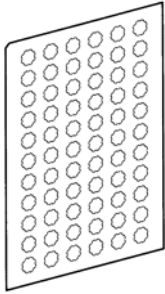
▲ Start functions: white letters on black background. Stop functions: white letters on red background (unless otherwise specified above).

Table 19.98: Legends for Customer Engraving (inserts only)

Description	For use with	Color	Text Color	Catalog Number	\$ Price
8 x 27 mm	30 x 40 mm legend holders	Black or red background	White	ZBY0101	1.70
		White or yellow background	Black	ZBY0102	
18 x 27 mm	30 x 50 mm legend holders	Black or red background	White	ZBY5101	
		White or yellow background	Black	ZBY5102	

Table 19.99: Legends for Factory Engraving (inserts only)

Description	For use with	Color	Text Color	Catalog Number	\$ Price
8 x 27 mm Custom Legend/Insert Only (Specify Engraving) 2 lines of 11 characters (including spaces) maximum per line (Example: ZBY01002 marked "Robot")	30 x 40 mm legend holders	Black background	White	ZBY01002	12.20
		Red background	White	ZBY01004	
		White background	Black	ZBY01001	
		Yellow background	Black	ZBY01005	
18 x 27 mm Custom Legend/Insert Only (Specify Engraving) 3 lines of 11 characters (including spaces) maximum per line (Example: ZBY05002 marked "Robot")	30 x 50 mm legend holders	Black background	White	ZBY05002	12.20
		Red background	White	ZBY05004	
		White background	Black	ZBY05001	
		Yellow background	Black	ZBY05005	



ZBY1101



ZBA•



ZBL•

Table 19.100: Sheets of Legends for Push Buttons, Switches, and Pilot Lights

Description	Marking	Text	Catalog Number	\$ Price
Sheets of 66 circular peel-off transparent self-adhesive legends	Blank		ZBY1101	6.20
	International	O	ZBY1146	10.40
		I	ZBY1147	
		II	ZBY1148	
		III	ZBY1149	
		STOP	ZBY1304	
		→	ZBY1912	
	English	HAND	ZBY1316	10.40
		OFF	ZBY1312	
		ON	ZBY1311	
START		ZBY1303		
SiS Label Software	Legend Design Software: English, French, German, Spanish, Italian		XBZ2U	104.00

Table 19.101: Push Button Caps—Unmarked

For use with	Type of Push	Color	Catalog Number	\$ Price
ZB4BA0 push button heads	Flush	White	ZBA1	2.00
		Black	ZBA2	
		Green	ZBA3	
		Red	ZBA4	
		Yellow	ZBA5	
		Blue	ZBA6	
		6 colors ▲	ZBA9	4.20
	Extended	White	ZBL1	2.00
		Black	ZBL2	
		Green	ZBL3	
		Red	ZBL4	
		Yellow	ZBL5	
		Blue	ZBL6	
		6 colors ▲	ZBL9	4.20

▲ Set of 6 different colored caps: white, black, green, red, yellow, blue.

Table 19.102: Push Button Caps—Marked

For use with	Type of Push	Marking		Cap Color	Catalog Number	\$ Price
		Text ■	Color			
ZB4BA0 push button heads	Flush	I ♦	White	Green	ZBA331	4.20
			Black	White	ZBA131	
		START ♦	White	Green	ZBA333	
			Black	White	ZBA133	
		ON	White	Green	ZBA341	
			Black	White	ZBA141	
		UP ♦	Black	White	ZBA343	
		DOWN ♦	White	Black	ZBA344	
		⬇	White	Green	ZBA345	
		⊕	White	Black	ZBA245	
		⬆	White	Green	ZBA346	
		↑	Black	White	ZBA334 ★	
			White	Black	ZBA335 ★	
		O ♦	White	Red	ZBA432	
				Black	ZBA232	
		STOP ♦	White	Red	ZBA434	
				Black	ZBA234	
		OFF	White	Red	ZBA435	
				Black	ZBA235	
		R ♦	White	Blue	ZBA639	

■ Start functions: white letters on black background. Stop functions: white letters on red background (unless otherwise specified).

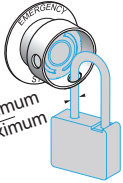
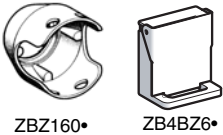
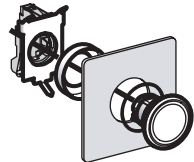
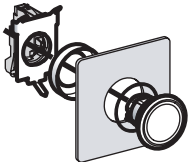
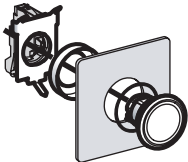


♦ Double injection molded marking.

★ Cap supplied not clipped-in, allowing orientation of arrow in any one of 4 directions: ↑, ↓, ← or →



ZBA•33

Table 19.103: Accessories

Description	Application	Color	Catalog Number	\$ Price
 Padlocking kit Conforming to EN/ISO 13850 ♦ (See legends below) ZBZ3605	For Emergency Stop function only, with the following Ø 40 mm trigger-action push buttons: XB4BT8* XB4BS8* XB4BS9* ZB4BT8* ZB4BS8* ZB4BS9*	Yellow	ZBZ3605	108.00
 Metal guards Padlockable ZBZ160* ZB4BZ6*	For Emergency Stop function only with the following Ø 40 mm trigger-action push buttons: XB4BT8* XB4BS8* XB4BS9* ZB4BT8* ZB4BS8* ZB4BS9*	Chromium Plated Black Red Yellow Blue	ZBZ1600 ZBZ1602 ZBZ1604 ZBZ1605 ZBZ1606	108.00
 Plastic guards ■ Round Guard for ZB4BS5430 EMO Mushroom Operators Narrow Flange Guard for ZB4BS5430 or ZB4BS84430 EMO Mushroom Operators* Trigger Action Guard for ZB4BS84430 EMO Mushroom Operators		Yellow	ZB4BZ1905 ZB4BZ2005 ZB4BZ2105	25.80
 Padlockable flaps For push buttons		Black Red	ZB4BZ262 ZB4BZ64	32.80
 Mounting kit For push buttons ZB4B* with flush mounting bezel head For 30 mm mounting hole. Minimum quantity 10 ZB4BZ011			ZB4BZ011	16.60
 Metal blanking plug, round chromium plated ▲ For Ø 22 mm control and signalling units ZB4SZ3			ZB4SZ3	11.00
 Plastic blanking plug, round black with mounting nut For Ø 22 mm control and signalling units ZB5SZ3			ZB5SZ3	11.00
Description Ø 60 mm Legend for padlocking device ZBZ3605	Marking Without EMERGENCY STOP	Color Yellow Yellow	Catalog Number ZBY9101T ZBY9330T	\$ Price 3.40

- ▲ Requires a ZB4BZ009 body/mounting collar for mounting, see page 19-35.
- For additional information, refer to publication 9001DB0601R6/06.
- ♦ Standard circular legends are not compatible with this product. Use special legends ZBY*•T listed above.
- ★ Maximum panel thickness is 2.5 mm.

Table 19.104: BA9s Bulbs and Associated Accessories

Description	Characteristics	Catalog Number	\$ Price
Replacement bulbs (Type BA9s) Incandescent	6 V, 1.2 W	DL1CB006	11.00
	12 V, 2 W	DL1CE012	
	24 V, 2 W	DL1CE024	
	120–130 V, 2.4 W	DL1CE130	
Neon bulbs	120–130 V	DL1CF110	15.20
	230–240 V	DL1CF220	
Bulb extractor	—	XBFX13	11.00
Lens cap tightening tool	Illuminated push buttons with flush push	ZBZ8	6.20
Power driver bits for mounting and wiring (package of 5)	Cross headed screw (POZIDRIV type 1)	ZB4BZ905	52.00
Mounting Adapter	For mounting 22 mm push button in 30 mm KO	ZBZ41	10.40

Table 19.105: Bellows Seals for Harsh Environments (IP 69K) ▼

Description	For use with	Color & Material	Sold in Lots of	Catalog Number	\$ Price
Bellows seals for harsh environments (Humidity, dust, high-pressure cleaning)	Any Harmony XB4 metal, mushroom head push button ★, Ø 40 mm or Ø 60 mm (except ZB4BR*16)	Red Silicone	2	ZBZ48	12.40
		Black EPDM	2	ZBZ28	
		Yellow EPDM	2	ZBZ58	

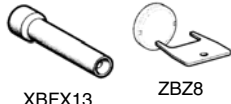
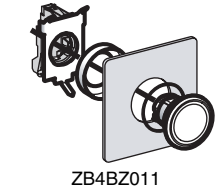
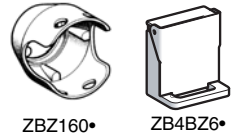
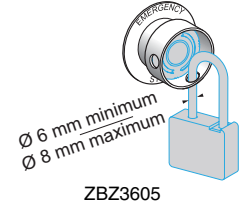
▼ Only when mounted on control stations. Use special legends ZBY*•T.

Table 19.106: Boot for Standard Selector Switch Handle

Description	For use with	Catalog Number	\$ Price
Boot for standard handle	ZB4BD**	ZBD D2	12.40

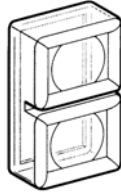
Table 19.107: Replacement Keys

Description	Key Number	Catalog Number	\$ Price
Set of 2 keys	455	ZBG455	11.00
	421E	ZBG421E	
	458A	ZBG458A	
	520E	ZBG520E	
	3131A	ZBG3131A	
Set of 2 keys, One of which is supplied booted (rubber boot)	455	ZBG455P	23.40
	421E	ZBG421EP	
	458A	ZBG458AP	
	520E	ZBG520EP	
	3131A	ZBG3131AP	





ZBP0



ZBW008



ZBV01•3



ZBV01•

Table 19.108: Clear Boots

Description	For use with	Material	Catalog Number	\$ Price
Single boots	Booted push buttons with circular head	Neoprene	ZBP0	12.40
	Booted push buttons with circular head used in food industry applications	Silicone	ZBP0A	12.40
Double boots	Double-headed push buttons, with or without pilot light	Neoprene	ZBW008	32.80
	Double-headed push buttons used in food industry applications	Silicone	ZBW008A	32.80

Table 19.109: Colored boots

Description	Color	Catalog Number	\$ Price
Single boot (can be replaced without dismantling the head)	Black	ZB2 BP012	13.00
	Green	ZB2 BP013	
	Red	ZB2 BP014	
	Yellow	ZB2 BP015	
	Blue	ZB2 BP016	

Table 19.110: Lens Caps

	For use with	Color	Catalog Number	\$ Price
Lens caps for Protected LED® light modules				
Pilot lights		White	ZBV0113	5.40
		Green	ZBV0133	
		Red	ZBV0143	
		Yellow	ZBV0153	
		Blue	ZBV0163	
Illuminated push buttons with flush push		White	ZBW9113	5.40
		Green	ZBW9133	
		Red	ZBW9143	
		Yellow	ZBW9153	
		Blue	ZBW9163	
Illuminated push buttons with extended push		White	ZBW9313	5.40
		Green	ZBW9333	
		Red	ZBW9343	
		Yellow	ZBW9353	
		Blue	ZBW9363	
Lens caps for BA9 light modules				
Pilot lights		White	ZBV011	5.40
		Green	ZBV013	
		Red	ZBV014	
		Yellow	ZBV015	
		Blue	ZBV016	
		Clear	ZBV017	
Illuminated push buttons with flush push		White	ZBW911	5.40
		Green	ZBW913	
		Red	ZBW914	
		Yellow	ZBW915	
		Blue	ZBW916	
		Clear	ZBW917	
Illuminated push buttons with extended push		White	ZBW931	5.40
		Green	ZBW933	
		Red	ZBW934	
		Yellow	ZBW935	
		Blue	ZBW936	
		Clear	ZBW937	

Table 19.111: Non-Illuminated Push Buttons, Momentary (screw clamp terminal connections)









Shape of Head	Type of Push	Type of Contact		Marking	Cap Color	Catalog Number (Components)	\$ Price
		N.O.	N.C.				
	Flush	1	—	—	Black	XB5AA21 (ZB5AZ101 + ZB5AA2)	38.50
					Green	XB5AA31 (ZB5AZ101 + ZB5AA3)	
					Yellow	XB5AA51 (ZB5AZ101 + ZB5AA5)	
					Blue	XB5AA61 (ZB5AZ101 + ZB5AA6)	
					Red	XB5AA42 (ZB5AZ102 + ZB5AA4)	
	Flush	1	1	—	Black	XB5AA25 (ZB5AZ105 + ZB5AA2)	56.00
					Green	XB5AA35 (ZB5AZ105 + ZB5AA3)	
					Red	XB5AA45 (ZB5AZ105 + ZB5AA4)	
					Yellow	XB5AA55 (ZB5AZ105 + ZB5AA5)	
					Blue	XB5AA65 (ZB5AZ105 + ZB5AA6)	
	Flush	1	—	"I" (white)	Green	XB5AA3311 (ZB5AZ101 + ZB5AA331)	44.70
	Flush	—	1	"O" (white)	Red	XB5AA4322 (ZB5AZ102 + ZB5AA432)	44.70
	Flush with clear silicone boot (color of pusher unobscured)	1	—	—	Black	XB5AP21 (ZB5AZ101 + ZB5AP2)	53.00
					Green	XB5AP31 (ZB5AZ101 + ZB5AP3)	
					Yellow	XB5AP51 (ZB5AZ101 + ZB5AP5)	
					Blue	XB5AP61 (ZB5AZ101 + ZB5AP6)	
					Red	XB5AP42 (ZB5AZ102 + ZB5AP4)	
	Extended	1	1	—	Red	XB5AL42 (ZB5AZ102 + ZB5AL4)	38.50
					Red	XB5AL45 (ZB5AZ105 + ZB5AL4)	38.50
	Mushroom head Ø 40 mm	1	—	—	Black	XB5AC21 (ZB5AZ101 + ZB5AC2)	56.00

Table 19.112: Two Button Push Buttons, Momentary (screw clamp terminal connections)

Shape of Head	Type of Push	Type of Contact		Degree of Protection	Catalog Number (Components)	\$ Price
		N.O.	N.C.			
	One flush green push (marked "I") One extended red push (marked "O")	1	1	IP40	XB5AL845 (ZB5AZ105 + ZB5AL8434)	69.00

Legends pages 19-58 to 19-60

XB5AA31

XB5AA4322

XB5AP51

XB5AL42

XB5AC21

XB5AL845



XB5AS9445



XB5AT42



XB5AS542

Table 19.113: Non-Illuminated Emergency Stop and Emergency Off Mushroom Head Push Buttons, Ø 40 mm (Red) (screw clamp terminal connections)

Shape of Head	Type of Push	Type of Contact		Catalog Number (Components)	\$ Price
		N.O.	N.C.		
	Trigger action push-pull▲	1	1	XB5AT845 (ZB5AZ105 + ZB5AT84)	101.00
	Trigger action turn-to-release▲	1	1	XB5AS8445 (ZB5AZ105 + ZB5AS844)	165.00
		—	2	XB5AS8444 (ZB5AZ104 + ZB5AS844)	
	Trigger action Key release (No. 455)▲	1	1	XB5AS9445 (ZB5AZ105+ ZB5AS944)	165.00
	Push-pull	—	1	XB5AT42 (ZB5AZ102 + ZB5AT4)	68.00
	Turn-to-release	—	1	XB5AS542 (ZB5AZ102 + ZB5AS54)	110.00
	Key release (No. 455)	—	1	XB5AS142 (ZB5AZ102 + ZB5AS14)	147.00

▲ Trigger action mushroom heads are tamper proof in that a change of contact state is not possible by teasing or floating the operator. For emergency stop applications, always use a trigger action push button (per EN/IEC 13850).

Table 19.114: Non-Illuminated Selector Switches and Key Switches (screw clamp terminal connections) ■



XB5AD33



XB5AJ33



XB5AG33

Shape of Head	Type of Operator	Type of Contact		Number and Type of Positions	Catalog Number (Components)	\$ Price
		N.O.	N.C.			
	Standard lever, black	1	—	2-maintained	XB5AD21 (ZB5AZ101 + ZB5AD2)	51.00
		1	1	2-maintained	XB5AD25 (ZB5AZ105 + ZB5AD2)	68.00
		2	—	3-maintained	XB5AD33 (ZB5AZ103 + ZB5AD3)	68.00
				3-momentary to center	XB5AD53 (ZB5AZ103 + ZB5AD5)	75.00
	Extended lever, black	1	—	2-maintained	XB5AJ21 (ZB5AZ101 + ZB5AJ2)	51.00
		2	—	3-maintained	XB5AJ33 (ZB5AZ103 + ZB5AJ3)	68.00
				3-momentary to center	XB5AJ53 (ZB5AZ103 + ZB5AJ5)	75.00
				2-momentary to left	XB5AG61 (ZB5AZ101 + ZB5AG6)	123.00
	Key (No. 455)	1	—	2-maintained	XB5AG21 (ZB5AZ101 + ZB5AG2)	123.00
				2-momentary to left	XB5AG61 (ZB5AZ101 + ZB5AG6)	123.00
				3-maintained	XB5AG03 (ZB5AZ103 + ZB5AG0)	141.00
		2	—	3-maintained	XB5AG33 (ZB5AZ103 + ZB5AG3)	141.00

■ See 19-49 for contact configurations.

Note: The symbol indicates key withdrawal position(s)

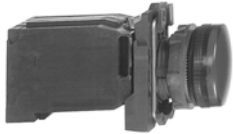
Legends..... pages 19-58 to 19-60



XB5AVB1



XB5AV63



XB5AV34



XB5AW31B5



XB5AW3465



XB5AW3335

Table 19.115: Pilot Lights with Protected LED® (screw clamp terminal connections) ▲

Shape of Head	Supply Voltage	Color	Catalog Number	(Components)	\$ Price
	24 Vac/Vdc	White	XB5AVB1	(ZB5AVB1 + ZB5AV013)	72.00
		Green	XB5AVB3	(ZB5AVB3 + ZB5AV033)	
		Red	XB5AVB4	(ZB5AVB4 + ZB5AV043)	
		Yellow	XB5AVB5	(ZB5AVB5 + ZB5AV053)	
		Blue	XB5AVB6	(ZB5AVB6 + ZB5AV063)	
		110–120 Vac	White	XB5AVG1	
	Green		XB5AVG3	(ZB5AVG3 + ZB5AV033)	
	Red		XB5AVG4	(ZB5AVG4 + ZB5AV043)	
	Yellow		XB5AVG5	(ZB5AVG5 + ZB5AV053)	
			Blue	XB5AVG6	(ZB5AVG6 + ZB5AV063)

Table 19.116: Pilot Lights for BA9s Bulb (screw clamp terminal connections)

Shape of Head	Supply Voltage	Color	Catalog Number	(Components)	\$ Price
Direct supply, for BA9s (incandescent, LED, neon) V ≤ 250 V, 2.4 W bulb (bulb not included) ■					
	≤ 250 Vac/Vdc	White	XB5AV61	(ZB5AV6 + ZB5AV01)	51.00
		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)	117.00
		Green	XB5AV33	(ZB5AV3 + ZB5AV03)	
		Red	XB5AV34	(ZB5AV3 + ZB5AV04)	
		Yellow	XB5AV35	(ZB5AV3 + ZB5AV05)	

Table 19.117: Illuminated Push Buttons, Momentary (screw clamp terminal connections) ▲

Shape of Head	Description	Type of Contact		Supply Voltage	Color of Push	Catalog Number (Components)	\$ Price				
		N.O.	N.C.								
Flush											
		1	1	24 Vac/Vdc	White	XB5AW31B5 (ZB5AW0B15 + ZB5AW313)	119.00				
					Green	XB5AW33B5 (ZB5AW0B35 + ZB5AW333)					
					Red	XB5AW34B5 (ZB5AW0B45 + ZB5AW343)					
					Yellow	XB5AW35B5 (ZB5AW0B55 + ZB5AW353)					
					Blue	XB5AW36B5 (ZB5AW0B65 + ZB5AW363)					
					110–120 Vac	White		XB5AW31G5 (ZB5AW0G15 + ZB5AW313)	119.00		
				Green		XB5AW33G5 (ZB5AW0G35 + ZB5AW333)					
				Red		XB5AW34G5 (ZB5AW0G45 + ZB5AW343)					
				Yellow		XB5AW35G5 (ZB5AW0G55 + ZB5AW353)					
					Direct supply for BA9s 2.4 W max. bulb not included	1	1	≤ 250 Vac/Vdc	Blue	XB5AW36G5 (ZB5AW0G65 + ZB5AW363)	99.00
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)	163.00				
					Green	XB5AW3335 (ZB5AW035 + ZB5AW33)					
					Red	XB5AW3435 (ZB5AW035 + ZB5AW34)					
					Yellow	XB5AW3535 (ZB5AW035 + ZB5AW35)					
					230–240 Vac 50/60 Hz	White		XB5AW3145 (ZB5AW045 + ZB5AW31)	163.00		
						Green		XB5AW3345 (ZB5AW045 + ZB5AW33)			
				Red		XB5AW3445 (ZB5AW045 + ZB5AW34)					
				Yellow		XB5AW3545 (ZB5AW045 + ZB5AW35)					
				Extended							
						1	1	24 Vac/Vdc	White	XB5AW11B5 (ZB5AW0B15 + ZB5AW113)	113.00
Green	XB5AW13B5 (ZB5AW0B35 + ZB5AW133)										
Red	XB5AW14B5 (ZB5AW0B45 + ZB5AW143)										
Yellow	XB5AW15B5 (ZB5AW0B55 + ZB5AW153)										
Blue	XB5AW16B5 (ZB5AW0B65 + ZB5AW163)										
110–120 Vac	White	XB5AW11G5 (ZB5AW0G15 + ZB5AW113)	113.00								
	Green	XB5AW13G5 (ZB5AW0G35 + ZB5AW133)									
	Red	XB5AW14G5 (ZB5AW0G45 + ZB5AW143)									
	Yellow	XB5AW15G5 (ZB5AW0G55 + ZB5AW153)									
									Blue	XB5AW16G5 (ZB5AW0G65 + ZB5AW163)	

▲ For 240V LED, replace the "B" or "G" with "M". (Example: XB5APVB1 (24 V) to XB5APVM1 (240 Vac only))
 ■ For bulb information, refer to page 19-61

Legends pages 19-58 to 19-60

Table 19.118: Non-Illuminated Operators, Momentary—Unmarked



ZB5AA0



ZB5AA5



ZB5AL3



ZB5AP1






ZB5CA2

Shape of Head	Type of Push	Cap Color	Catalog Number	\$ Price
	Flush, without color cap ▲	—	ZB5AA0	11.00
	Flush, with set of 6 color caps	6 colors ■	ZB5AA9	13.00
	Flush	White	ZB5AA1	13.00
		Black	ZB5AA2	
		Green	ZB5AA3	
		Red	ZB5AA4	
		Yellow	ZB5AA5	
		Blue	ZB5AA6	
	Flush with transparent cap, for insertion of legend ♦	Gray	ZB5AA8	16.00
		White	ZB5AA18	
		Green	ZB5AA38	
		Red	ZB5AA48	
	Extended	Yellow	ZB5AA58	13.00
		Blue	ZB5AA68	
		White	ZB5AL1	
		Black	ZB5AL2	
		Green	ZB5AL3	
		Red	ZB5AL4	
	Booted (clear) Cap color unobscured	Yellow	ZB5AL5	25.80
		Blue	ZB5AL6	
		White	ZB5AP1	
		Black	ZB5AP2	
		Green	ZB5AP3	
		Red	ZB5AP4	
	Booted (clear) for insertion of legend ♦ Cap color unobscured	Yellow	ZB5AP5	29.00
		Blue	ZB5AP6	
		White	ZB5AP18	
		Green	ZB5AP38	
		Red	ZB5AP48	
		Yellow	ZB5AP58	
	Flush Plunger (with high guard)	Blue	ZB5AP68	32.20
		White	ZB5AA14	
		Black	ZB5AA24	
		Green	ZB5AA34	
		Red	ZB5AA44	
		Yellow	ZB5AA54	
	Flush	Blue	ZB5AA64	27.00
		White	ZB5CA1	
		Black	ZB5CA2	
		Green	ZB5CA3	
		Red	ZB5CA4	
		Yellow	ZB5CA5	
	Extended	Blue	ZB5CA6	27.00
		White	ZB5CL1	
		Black	ZB5CL2	
		Green	ZB5CL3	
		Red	ZB5CL4	
		Yellow	ZB5CL5	
	Heads only Recessed (high guard)	Blue	ZB5CL6	32.20
		White	ZB5 AA16	
		Black	ZB5 AA26	
		Green	ZB5 AA36	
		Red	ZB5 AA46	
		Yellow	ZB5 AA56	
	Heads only Recessed (high guard)	Blue	ZB5 AA66	32.20
		White	ZB5 CA16	
		Black	ZB5 CA26	
		Green	ZB5 CA36	
		Red	ZB5 CA46	
		Yellow	ZB5 CA56	
		Blue	ZB5 CA66	

- ▲ Order color cap separately, see page 19-60.
- Six colored caps included with head (white, black, green, red, yellow, blue).
- ♦ For legend ordering information see page 19-60.


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Table 19.119: Non-Illuminated Operators, Momentary—Premarked

Shape of Head	Type of Push	Marking		Cap Color	Catalog Number	\$ Price
		Text	Color			
	Flush	I	White	Green	ZB5AA331	18.60
			Black	White	ZB5AA131	
		START	White	Green	ZB5AA333	
			Black	White	ZB5AA133	
		ON	White	Green	ZB5AA341	
			Black	White	ZB5AA141	
		T	White	Green	ZB5AA345	
		O	White	Red	ZB5AA432	
		STOP	White	Red	ZB5AA232	
				Black	ZB5AA234	
		OFF	White	Red	ZB5AA435	
				Black	ZB5AA235	
		UP	Black	White	ZB5AA343	
				Black	ZB5AA344	
↑ ▲	Black	White	ZB5AA334			
		White	Black	ZB5AA335		
	Extended	O	White	Red	ZB5AL432	18.60
			Black	Black	ZB5AL232	
		STOP	White	Red	ZB5AL434	
				Black	ZB5AL234	
		OFF	White	Red	ZB5AL435	
				Black	ZB5AL235	
	Flush	I	White	Green	ZB5CA331	32.00
		O	White	Red	ZB5CA432	32.00

▲ Cap supplied not clipped-in, allowing orientation of arrow in any one of 4 directions: ↑, ↓, ← or →

Table 19.120: Mushroom Heads, Momentary

Shape of Head	Diameter of Head	Color of Head	Catalog Number	\$ Price
	30 mm	Black	ZB5AC24	29.40
		Green	ZB5AC34	
		Red	ZB5AC44	
		Yellow	ZB5AC54	
		Blue	ZB5AC64	
	40 mm	Black	ZB5AC2	29.40
		Green	ZB5AC3	
		Red	ZB5AC4	
		Yellow	ZB5AC5	
		Blue	ZB5AC6	
		60 mm	Black	
	Green		ZB5AR3	
	Red		ZB5AR4	
	Yellow		ZB5AR5	
	Blue		ZB5AR6	

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ZB5AH04



ZB5AL8334



ZB5AL8434



ZB5AL9334

Table 19.121: Non-Illuminated Push-on/Push-off Operators

Shape of Head	Type of Push	Color of Push	Catalog Number	\$ Price
	Flush	White	ZB5AH01	17.60
		Black	ZB5AH02	
		Green	ZB5AH03	
		Red	ZB5AH04	
		Yellow	ZB5AH05	
		Blue	ZB5AH06	
	Extended	White	ZB5AH11	17.60
		Black	ZB5AH2	
		Green	ZB5AH3	
		Red	ZB5AH4	
		Yellow	ZB5AH5	
		Blue	ZB5AH6	
	Flush	White	ZB5CH01	35.20
		Black	ZB5CH02	
		Green	ZB5CH03	
		Red	ZB5CH04	
		Yellow	ZB5CH05	
		Blue	ZB5CH06	

Table 19.122: Two Head Operators, Momentary

Shape of Head	Description	Color of Pushers	Degree of Protection	Catalog Number	\$ Price
No Marking					
	Two flush	Green Red	IP40	ZB5AA8134	20.80
			IP66	ZB5AA9134	37.20
		White Black	IP40	ZB5AA8112	20.80
			IP66	ZB5AA9112	37.20
	One flush One extended	Green Red	IP40	ZB5AL8334	20.80
			IP66	ZB5AL9334	37.20
		White Black	IP40	ZB5AL8312	20.80
			IP66	ZB5AL9312	37.20
Premarked					
	Two flush (marked "I") (marked "O")	Green Red	IP40	ZB5AA8234	24.80
			IP66	ZB5AA9234	41.40
		White Black	IP40	ZB5AA8212	24.80
			IP66	ZB5AA9212	41.40
	One flush (marked "I") One extended (marked "O")	Green Red	IP40	ZB5AL8434	24.80
			IP66	ZB5AL9434	41.40
		White Black	IP40	ZB5AL8412	24.80
			IP66	ZB5AL9412	41.40

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Table 19.123: Mushroom Heads for Maintained Push Buttons

Shape of Head	Type of Push	Diameter of Head	Color	Catalog Number	\$ Price	
	Trigger action Push-pull ■	40 mm	Red	ZB5AT84	54.00	
	Trigger action Turn-to-release ■	30 mm	Red	ZB5AS834	112.00	
		40 mm	Red	ZB5AS844	112.00	
	Trigger action Key release (No. 455) ■	30 mm	Red	ZB5AS934	112.00	
		40 mm	Red	ZB5AS944 ▲	112.00	
		60 mm	Red	ZB5AS964	112.00	
	Push-pull	30 mm	Black	ZB5AT24	40.40	
			Red	ZB5AT44		
		40 mm	Black	ZB5AT2	40.40	
			Red	ZB5AT4		
		60 mm	Black	ZB5AX2	46.00	
			Red	ZB5AX4		
	Turn-to-release	30 mm	Black	ZB5AS42	78.00	
			Red	ZB5AS44		
		40 mm	Black	ZB5AS52	78.00	
			Red	ZB5AS54		
			Yellow	ZB5AS55		
		60 mm	Black	ZB5AS62	90.00	
			Red	ZB5AS64		
			Black	ZB5AS72		112.00
			Red	ZB5AS74		
30 mm	Key release (No. 455)	Black	ZB5AS12	112.00		
		Red	ZB5AS14 ▲			
		40 mm	Black	ZB5AS22	112.00	
			Red	ZB5AS24		

▲ Other key numbers:

- key no. 421E: add the suffix 12 to the catalog number.
- key no. 458A: add the suffix 10 to the catalog number.
- key no. 520E: add the suffix 14 to the catalog number.
- key no. 3131A: add the suffix 20 to the catalog number.

Example: The catalog number for a Ø 40 mm red mushroom head for a trigger action, maintained push button, with release by key no. 421E becomes: ZB5AS94412.

- Trigger action mushroom heads are tamper proof in that a change of contact state is not possible by teasing or floating the operator. For emergency stop applications, always use a trigger action push button (per EN/IEC 13850).

Table 19.124: Circular Legends for Emergency Stop Mushroom Heads (yellow background)

Diameter	Text	Catalog Number	\$ Price
60 mm	Blank	ZBY9101	3.40
	EMERGENCY STOP	ZBY9330	
90 mm	Blank	ZBY8101	
	EMERGENCY STOP	ZBY8330	

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ZB5AS844



ZB5AS934



ZB5AT4



ZB5AS54



ZB5AS64



ZBY9330

Table 19.125: Non-Illuminated Selector Switches



ZB5AD•
Standard Lever



ZB5AJX•
Extended Lever

Color	Number and Type of Positions		Standard Lever ▲	Extended Lever	\$ Price
			Catalog Number		
Black	2-maintained		ZB5AD2	ZB5AJ2	24.00
Black	2-momentary from right to left		ZB5AD4	ZB5AJ4	29.40
Black	3-maintained		ZB5AD3	ZB5AJ3	24.00
Black	3-momentary to center		ZB5AD5	ZB5AJ5	29.40
Black	3-momentary from left to center		ZB5AD7	ZB5AJ7	29.40
Black	3-momentary from right to center		ZB5AD8	ZB5AJ8	29.40

▲ For colored lever, add the following code to the end of catalog number: 01—white, 03—green, 04—red, 05—yellow, 06—blue (Example: ZB5AD204).

Table 19.126: Non-Illuminated Key Switches



ZB5AG•

Type of Operator	Number and Type of Positions	Catalog Number ■	\$ Price		
Key (No. 455) Note: The symbol indicates key withdrawal position(s). ■ Other key numbers: —key no. 421E: add the suffix 12 to the catalog number. —key no. 458A: add the suffix 10 to the catalog number. —key no. 520E: add the suffix 14 to the catalog number. —key no. 3131A: add the suffix 20 to the catalog number. —key no. 8D1: add the suffix D to the catalog number. Example: The catalog number for a head with key no. 421E for a 2 position maintained, lockable selector switch, with key withdrawal from the left-hand position, becomes: ZB5AG212	2-maintained		ZB5AG2	90.00	
			ZB5AG4		
			ZB5AG02		
	2-momentary from right to left		ZB5AG6		
		3-maintained			ZB5AG0
					ZB5AG3
			ZB5AG5		
	3-momentary from left to center		ZB5AG9		
			ZB5AG09		
			ZB5AG1		116.00
	3-momentary to center		ZB5AG7		
		3-momentary from right to center			
			ZB5AG08		
	ZB5AG05				

Table 19.127: Sequence of Contacts on Selector Switch Bodies



Unit Type	Selector Switches															
	2-position						3-position									
	315°			45°			315°			0°			45°			
Operator Plunger Position																
Contact Block Location	L	C	R	L	C	R	L	C	R	L	C	R	L	C	R	
Contacts	N/O	O	O	O	X	X	X	X	X	O	O	O	O	O	X	X
	N/C	X	X	X	O	O	O	O	O	X	X	X	X	X	O	O

Note: L=Left, C=Center, R=Right, O=Open, X=Closed

Table 19.128: 3 Position Selector Switch

			Contact block guide				Contact block guide
X	O	O	1 N.O. (left)	X	X	O	1 N.C. (right)
O	X	O	2 N.C. wired in series (left and right)	O	X	X	1 N.C. (left)
O	O	X	1 N.O. (right)	X	O	X	2 N.O. wired in parallel (left and right)

Table 19.129: Reset Operators

Shape of Head	Actuation Distance		Text	Color	Catalog Number	\$ Price
	IN	mm				
Flush	Adjustable Shaft▲					
	0.67-4.72	17-120	Without	Green	XB5AA831	37.60
				Red	XB5AA841	
				Blue	XB5AA861	
			O	XB5AA84101	45.40	
			R	XB5AA86102	45.40	
			Without	Green	XB5AA832	
	Red	XB5AA842				
	Blue	XB5AA862				
	O	XB5AA84201	50.00			
	4.72-10.12	120-257	R	Blue	XB5AA86202	50.00
Extended						
	0.67-4.72	17-120	O	Red	XB5AL84101	45.40
	4.72-10.12	120-257	O	Red	XB5AL84201	50.00

▲ Shaft only (short) is W40437632 (Price = \$20.00)

Table 19.130: Potentiometer Operator (with Mounting Collar)




Shape of Head	Description	Application	Catalog Number	\$ Price
	For potentiometer with shaft length 1.73 to 1.97 in. (44 to 50 mm) (potentiometer not included)	For shaft Ø 0.25 in. (6.35 mm)	ZB5AD922	142.00
		For shaft Ø 0.24 in. (6 mm)	ZB5AD912	

Table 19.131: Joystick (54 mm, Extended Operating Shaft) ■

Description	Contact Operation	Action	Catalog Number	\$ Price
2 direction 	1 step 1 N.O. contact per direction	Maintained	XD5PA12	250.00
		Momentary	XD5PA22	
4 direction 	1 step 1 N.O. contact per direction	Maintained	XD5PA14	316.00
		Momentary	XD5PA24	

■ Do not use standard contact blocks ZBE10* (single) or ZBE20* (double)

Table 19.132: Legends for Joystick

Description	For use with		Catalog Number	\$ Price
Legends 30 x 48 mm for engraving	2 direction	Black one side Red reverse	ZBG2201	3.40
		White one side Yellow reverse	ZBG2401	
Legends 48 x 48 mm for engraving	4 direction	Black one side Red reverse	ZBG4201	
		White one side Yellow reverse	ZBG4401	

Table 19.133: Hour Counters ♦


Characteristics	Supply Voltage	Catalog Number	\$ Price
Indication 0-9999.9	12-24 Vdc or Vac, 50/60 Hz	XB5DSB	383.00
	120 Vac, 60 Hz	XB5DSG	
	230-240 Vac, 50 Hz	XB5DSM	

Table 19.134: Buzzer ♦

Characteristics	Supply Voltage	Catalog Number	\$ Price
85 db buzzer:4kHz, continuous or intermittent (IP40 NEMA 1)	24 Vdc or Vac, 50/60 Hz	XB5KSB	183.00
	120 Vac, 60 Hz	XB5KSG	
	230-240 Vac, 50 Hz	XB5KSM	

♦ UR E191025, XHNR2 and XHNR8.

Table 19.135: Two Position Toggle Switch

Shape of Head	Color	Type of Positions	Catalog Number	\$ Price
	Black	Maintained	ZB5AD28	46.60
	Black	Momentary	ZB5AD48	

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XB5AA



XD5PA12



XB5DS*



XB5KS*



ZB5AD28



ZB5AV053





ZB5AV01



ZB5CV063

Table 19.136: Pilot Light Heads

Shape of Head	For use with Body Comprising Light Module Type	Color of Lens	Catalog Number	\$ Price
	Protected LED [®] only	White	ZB5AV013	7.60
		Green	ZB5AV033	
		Red	ZB5AV043	
		Blue	ZB5AV063	
	Protected LED only Fresnel (jeweled) lens ▲	White	ZB5AV013S	7.60
		Green	ZB5AV033S	
		Red	ZB5AV043S	
		Amber	ZB5AV053S	
	For BA9s incandescent bulb, neon or LED only ■	Blue	ZB5AV063S	7.60
		White	ZB5AV01	
		Green	ZB5AV03	
		Red	ZB5AV04	
For BA9s incandescent bulb, neon or LED Fresnel (jeweled) lens ■	Yellow	ZB5AV05	7.60	
	Blue	ZB5AV06		
	Clear	ZB5AV07		
	White	ZB5AV01S		
	Protected LED only	Green	ZB5AV03S	27.00
		Red	ZB5AV04S	
		Amber	ZB5AV05S	
		Blue	ZB5AV06S	
	Protected LED only	Clear	ZB5AV07S	27.00
		White	ZB5CV013	
		Green	ZB5CV033	
		Red	ZB5CV043	
	Protected LED only	Yellow	ZB5CV053	27.00
		Blue	ZB5CV063	

▲ For use in bright ambient conditions (i.e., sunlight).
■ Order bulb separately; see page 19-40. For BA9 LED, see page 19-116.

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Table 19.137: Complete Bodies (Mounting Collar + Light Module for BA9s Incandescent Bulb, Neon or LED)

Description	Light Source	Supply Voltage (V)	Catalog Number	\$ Price
Screw clamp terminal connections				
Direct supply	BA9s bulb 2.4 W max. Not included ▲	≤250	ZB5AV6	38.60
Direct supply	BA9s incandescent bulb included	24 V 2 W	ZB5AV624	49.20
Direct supply	BA9s incandescent bulb included	120 V 2.4 W	ZB5AV6120	49.20
Transformer type 1.2 VA, 6 V secondary	BA9s incandescent bulb included	110–120 Vac 50/60 Hz	ZB5AV3	98.00
		230–240 Vac 50/60 Hz	ZB5AV4	
		400–50 Hz	ZB5AV5	
		440–480 Vac 60 Hz	ZB5AV8	
		550–600 Vac 60 Hz	ZB5AV9	

▲ Order bulb separately, see page 19-61.

Table 19.138: Complete Bodies (Mounting Collar + Light Module with Protected LED®) ■◆

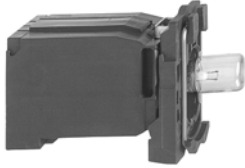
Light Source	Supply Voltage	Color of Light Source	Catalog Number	\$ Price
Screw clamp terminal connections				
Protected LED	12 Vac/Vdc	White	ZB5AVJ1	57.00
		Green	ZB5AVJ3	
		Red	ZB5AVJ4	
		Yellow	ZB5AVJ5	
		Blue	ZB5AVJ6	
		White	ZB5AVB1	
	Green	ZB5AVB3		
	Red	ZB5AVB4		
	Yellow	ZB5AVB5		
	Blue	ZB5AVB6		
	White	ZB5AVBG1	57.00	
	Green	ZB5AVBG3		
	Red	ZB5AVBG4		
	Yellow	ZB5AVBG5		
	Blue	ZB5AVBG6		
	White	ZB5AVG1		57.00
	Green	ZB5AVG3		
	Red	ZB5AVG4		
Yellow	ZB5AVG5			
Blue	ZB5AVG6			
Flashing Protected LED	24 Vac/Vdc	White	ZB5AV18B1	
		Green	ZB5AV18B3	
		Red	ZB5AV18B4	
		Yellow	ZB5AV18B5	
		Blue	ZB5AV18B6	
		White	ZB5AV18G1	66.00
	Green	ZB5AV18G3		
	Red	ZB5AV18G4		
	Yellow	ZB5AV18G5		
	Blue	ZB5AV18G6		

■ For Quick-Connect version, add "3" to the end of the catalog number Example: ZB5AVJ13 (Quick-Connect size 1 x 0.250" or 2 x 0.110").

◆ For 240 V LED, replace the "B" or "G" with "M". (Example: ZB5AVB1 (24V) to ZB5AVM1 (240V))



ZB5AV6



ZB5AV3



ZB5AV13



ZB5AW313



ZB5AW363



ZB5AW143



ZB5CW313



ZB5AW33

Table 19.139: Heads for Momentary Illuminated Push Buttons

Shape of Head	Type of Push	Color	Catalog Number	\$ Price
Only use with Protected LED® light modules				
	Flush	White	ZB5AW313	18.60
		Green	ZB5AW333	
		Red	ZB5AW343	
		Yellow	ZB5AW353	
		Blue	ZB5AW363	
	Flush with clear boot	White	ZB5AW513	31.00
		Green	ZB5AW533	
		Red	ZB5AW543	
		Yellow	ZB5AW553	
		Blue	ZB5AW563	
	Flush for insertion of legend	White	ZB5AA18	16.00
		Green	ZB5AA38	
		Red	ZB5AA48	
		Yellow	ZB5AA58	
		Blue	ZB5AA68	
	Extended	White	ZB5AW113	13.00
		Green	ZB5AW133	
		Red	ZB5AW143	
		Yellow	ZB5AW153	
		Blue	ZB5AW163	
	Flush for insertion of legend	White	ZB5CW313	27.00
		Green	ZB5CW333	
		Red	ZB5CW343	
		Yellow	ZB5CW353	
		Blue	ZB5CW363	
	Extended	White	ZB5CW113	27.00
		Green	ZB5CW133	
		Red	ZB5CW143	
		Yellow	ZB5CW153	
		Blue	ZB5CW163	
Only use with light modules for a BA9s incandescent bulb, neon or LED				
	Flush	White	ZB5AW31	18.60
		Green	ZB5AW33	
		Red	ZB5AW34	
		Yellow	ZB5AW35	
		Blue	ZB5AW36	
	Extended	Clear	ZB5AW37	13.00
		White	ZB5AW11	
		Green	ZB5AW13	
		Red	ZB5AW14	
		Yellow	ZB5AW15	
		Blue	ZB5AW16	
		Clear	ZB5AW17	

Table 19.140: Illuminated Push-on/Push-off Operators

Shape of Head	Type of Push	Color of Lens	Catalog Number	\$ Price
Only use with Protected LED light modules				
	Flush	White	ZB5AH013	24.80
		Green	ZB5AH033	
		Red	ZB5AH043	
		Yellow	ZB5AH053	
		Blue	ZB5AH063	
	Extended	White	ZB5AH13	19.60
		Green	ZB5AH33	
		Red	ZB5AH43	
		Yellow	ZB5AH53	
		Blue	ZB5AH63	

Legends..... pages 19-58 to 19-60

Table 19.141: Two Button with Clear Pilot Light, Momentary (IP40) ▲

Shape of Head	Description	Color of Pushers	Catalog Number	\$ Price
Only use with Protected LED® light modules (Protected LED determines pilot light color)				
	1 flush 1 central pilot light 1 flush	Black Red	ZB5AW812743	29.00
		Green Red	ZB5AW813743	
		White Black	ZB5AW811723	
	1 flush 1 central pilot light 1 extended	Black Red	ZB5AW832743	29.00
		Green Red	ZB5AW833743	
		White Black	ZB5AW831723	
Only use with Protected LED light modules (Protected LED determines pilot light color)—premarked				
	1 flush (marked "I") 1 central pilot light 1 flush (marked "O")	Black Red	ZB5AW822743	33.20
		Green Red	ZB5AW823743	
		White Black	ZB5AW821723	
	1 flush (marked "I") 1 central pilot light 1 extended (marked "O")	Black Red	ZB5AW842743	33.20
		Green Red	ZB5AW843743	
		White Black	ZB5AW841723	

▲ For IP66 degree of protection, install clear sealing boot ZBW008, see page 19-62.

Table 19.142: Heads for Maintained Illuminated Push Buttons

Shape of Head	Type of Push	Color	Catalog Number	\$ Price
Only use with Protected LED light modules				
	Turn-to-Release Mushroom (40 mm)	White Green Red Yellow Blue	ZB5AW713 ZB5AW733 ZB5AW743 ZB5AW753 ZB5AW763	63.00

Table 19.143: Emergency Stop, Trigger Action and Mechanical Latching Push Button with Mechanical State Indicator for Elevator Inspection Box Applications—Heads Only

Shape of Head	Type of Reset	Color	Catalog Number	\$ Price
	Push-pull (40 mm)	Red	ZB5AT8643M	124.00

Table 19.144: Illuminated Selector Switches, Standard Lever

Shape of Head	Number and Type of Positions	Catalog Number ■	\$ Price	
Only use with Protected LED light modules				
	2-maintained		ZB5AK12■3	35.00
	2-momentary from right to left		ZB5AK14■3	51.00
	3-maintained		ZB5AK13■3	35.00
	3-momentary to center		ZB5AK15■3	51.00
	3-momentary from right to center		ZB5AK18■3	51.00
	3-momentary from left to center		ZB5AK17■3	51.00

■ Designate color as follows: 1—white, 3—green, 4—red, 5—yellow, 6—blue

Table 19.145: Sequence of Contacts on Selector Switch Bodies

Unit Type	Selector Switches															
	2-position						3-position									
	315°			45°			315°			0°			45°			
Operator Plunger Position	Up															
	Down															
Contact Block Location	L	C	R	L	C	R	L	C	R	L	C	R	L	C	R	
Contacts	N/O	O	O	O	X	X	X	X	X	O	O	O	O	O	X	X
	N/C	X	X	X	O	O	O	O	O	X	X	X	X	X	O	O

Note: L=Left, C=Center, R=Right, O=Open, X=Closed

Legends pages 19-58 to 19-60



ZB5AW833743



ZB5AW823743



ZB5AW843743



ZB5AW7



ZB5AT8643M



ZB5AK1213



ZB5AK1463

NOTE: For the Quick-Connect version, add the numeral **3** to the end of the catalog number.
Example: ZB5AZ1013 (Quick-Connect size 1 x 0.250" or 2 x 0.110").

Table 19.146: Contact Blocks (Mounting Collar with Contact Blocks) ▲◆◆



Description	Type of Contact		Catalog Number	\$ Price
	N.O.	N.C.		
Screw clamp terminal connections	1	—	ZB5AZ101	22.00
	—	1	ZB5AZ102	22.00
	2	—	ZB5AZ103	38.20
	—	2	ZB5AZ104	38.20
	1	1	ZB5AZ105	38.20
	1	2	ZB5AZ141	55.00

- ▲ For Ring Tongue compatible blocks add "9" to the end of the catalog number (Example: ZB5AZ1029).
- ◆ Electrical components with connection by printed circuit board pins are available. Refer to Catalog 9001CT0001 for more information.
- ◆ Electrical components with connection by plug-in connector are available. Refer to Catalog 9001CT0001 for more information.

Table 19.147: Complete Bodies (Mounting Collar + Single Contact Block + Light Module with Protected LED®)



Light Source	Type of Contact		Color	Supply Voltage ★		\$ Price
	N.O.	N.C.		24 Vac/Vdc	110–120 Vac	
				Catalog Number		
Screw clamp terminal connections						
Protected LED	1	—	White	ZB5AW0B11	ZB5AW0G11	73.00
			Green	ZB5AW0B31	ZB5AW0G31	
			Red	ZB5AW0B41	ZB5AW0G41	
			Yellow	ZB5AW0B51	ZB5AW0G51	
	—	1	Blue	ZB5AW0B61	ZB5AW0G61	73.00
			White	ZB5AW0B12	ZB5AW0G12	
			Green	ZB5AW0B32	ZB5AW0G32	
			Red	ZB5AW0B42	ZB5AW0G42	
	2	—	Yellow	ZB5AW0B52	ZB5AW0G52	90.00
			Blue	ZB5AW0B62	ZB5AW0G62	
			White	ZB5AW0B13	ZB5AW0G13	
			Green	ZB5AW0B33	ZB5AW0G33	
1	1	Red	ZB5AW0B43	ZB5AW0G43	90.00	
		Yellow	ZB5AW0B53	ZB5AW0G53		
		Blue	ZB5AW0B63	ZB5AW0G63		
		White	ZB5AW0B15	ZB5AW0G15		
		Green	ZB5AW0B35	ZB5AW0G35	90.00	
		Red	ZB5AW0B45	ZB5AW0G45		
		Yellow	ZB5AW0B55	ZB5AW0G55		
		Blue	ZB5AW0B65	ZB5AW0G65		

★ For 240V LED, replace the "B" or "G" with "M". (Example: change "ZB5AW0B11 (24 V) to ZB5AW0M11 (240 V)

Table 19.148: Mounting Collar, Contact Block and Light Module (with screw clamp terminal connections) ▼

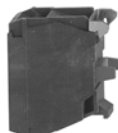


Supply	Light Source	Supply Voltage	Type of Contact ▼		Color of Light Source	Catalog Number	\$ Price
			N.O.	N.C.			
Screw clamp terminal connections							
Direct supply	BA9s 2.4 W max. bulb Not included Δ	≤250 Vac/Vdc	1	—	—	ZB5AW061	55.00
			—	1	—	ZB5AW062	55.00
			2	—	—	ZB5AW063	71.00
			1	1	—	ZB5AW065	71.00
Transformer type 1.2 VA, 6 V secondary	BA9s incandescent bulb included	110–120 Vac 50/60 Hz	1	—	—	ZB5AW031	114.00
			1	1	—	ZB5AW035	130.00
		230–240 Vac 50/60 Hz	1	—	—	ZB5AW041	114.00
			1	1	—	ZB5AW045	130.00
		440–480 Vac 60 Hz	1	—	—	ZB5AW081	114.00
			1	1	—	ZB5AW085	130.00

- ▼ Can be fitted with additional contact blocks, see page 19-56.
- Δ Order bulb separately, see page 19-61.



ZB5AZ009



ZBE101



ZBE203



ZBVB•

Protected LED

Table 19.149: Body/Mounting Collar

For use with	Catalog Number	\$ Price
Electrical block (contact or light module)	ZB5AZ009	5.40

Table 19.150: Add-On Contact Block (with screw clamp terminal connections) ★▼

Description	Type of Contact		Catalog Number	\$ Price
	N.O.	N.C.		
Standard single contact blocks▲■	1	—	ZBE101	16.40
	—	1	ZBE102	16.40
	2	—	ZBE203	33.20
Standard double contact blocks▲■	—	2	ZBE204	33.20
	1	1	ZBE205	33.20
	1	—	ZBE1016	32.80
Special contact blocks for low-power switching ◆	—	1	ZBE1026	32.80
	1	—	ZBE1016P	32.80
Low-power switching	Dusty environment ◆ (IP5X, 50 µm dust)	—	ZBE1026P	32.80
	—	1	ZBE1026P	32.80
Staggered contacts	Early make N/O	1	ZBE201	16.40
	Late break N/C	—	ZBE202	16.40
	Overlapping N/O+N/C	1	ZB4BZ106	32.80
	Staggered N/O+N/O	—	ZB4BZ107	32.80
	—	2	ZB4BZ107	32.80

▲ For Quick-Connect version add "3" to the end of the catalog number (Example: ZBE1013) (Quick-Connect size 1 x 0.250" or 2 x 0.110").

■ For Ring Tongue compatible blocks add "9" to the end of the catalog number (Example: ZBE1029).

◆ Cannot stack additional contact blocks onto these blocks.

Table 19.151: Light Modules (with screw clamp terminal connections)★▼

Description	Supply Voltage	Color of Light Source	Catalog Number	\$ Price
	12 Vac/Vdc	White	ZBVJ1	52.00
		Green	ZBVJ3	
		Red	ZBVJ4	
		Yellow	ZBVJ5	
		Blue	ZBVJ6	
		White	ZBVB1	
Green	ZBVB3			
Red	ZBVB4			
Yellow	ZBVB5			
Blue	ZBVB6			
White	ZBVG1	52.00		
Green	ZBVG3			
Red	ZBVG4			
Yellow	ZBVG5			
Blue	ZBVG6			
White	ZBVBG1		52.00	
Green	ZBVBG3			
Red	ZBVBG4			
Yellow	ZBVBG5			
Blue	ZBVBG6			
White	ZBVM1	52.00		
Green	ZBVM3			
Red	ZBVM4			
Yellow	ZBVM5			
Blue	ZBVM6			
Direct supply for BA9s (2.4 W max. bulb not included—see page 19-61)	≤250 Vac/Vdc		—	ZBV6

★ Electrical components with connection by printed circuit board pins are available. Refer to Catalog 9001CT0001 for more details.

▼ Electrical components with connection by plug-in connector are available. Refer to Catalog 9001CT0001 for more details.

Table 19.152: Spring Terminal Products for XB5 22 mm Push Buttons

Body/Mounting Collar



For Use With	Catalog Number	\$ Price
Contact block or light module	ZB5AZ009	5.40



ZB5AZ009

Contact Blocks ▲

Spring Terminal Connections, Contacts for Standard Applications


Description	Type of Contact	 		Catalog Number	\$ Price
		N/O	N/C		
Contact blocks	Single	1	–	ZBE1015	18.00
		–	1	ZBE1025	18.00
	Single with body/mounting collar	1	–	ZB5AZ1015	24.00
		–	1	ZB5AZ1025	24.00
		2	–	ZB5AZ1035	42.00
		–	2	ZB5AZ1045	42.00
		1	1	ZB5AZ1055	42.00



ZBE1015

Light Modules ▲

Spring Terminal Connections

Description	Supply Voltage	Color of Light Source	Catalog Number	\$ Price
Integral LED (to combine with heads for integral LED) 	12 Vac/Vdc	White	ZBVJ15	57.00
		Green	ZBVJ35	57.00
		Red	ZBVJ45	57.00
		Orange	ZBVJ55	57.00
		Blue	ZBVJ65	57.00
	24 Vac/Vdc	White	ZBVB15	57.00
		Green	ZBVB35	57.00
		Red	ZBVB45	57.00
		Orange	ZBVB55	57.00
		Blue	ZBVB65	57.00
	110–120 Vac	White	ZBVG15	57.00
		Green	ZBVG35	57.00
		Red	ZBVG45	57.00
		Orange	ZBVG55	57.00
		Blue	ZBVG65	57.00
	230–240 Vac	White	ZBVM15	57.00
		Green	ZBVM35	57.00
		Red	ZBVM45	57.00
		Orange	ZBVM55	57.00
		Blue	ZBVM65	57.00



ZB5AZ1015

▲ Additional blocks **cannot** be attached to the back of these contact blocks or light modules.

Table 19.153: Standard (30 x 40 mm) Legend Holders for 8 x 27 mm Legends

Description	Legend		Catalog Number	\$ Price
	Color	Text		
Without legend insert ▲	—	—	ZBZ32	2.00
With blank legend insert (for engraving)	Black or red background	—	ZBY2101	3.40
	White or yellow background	—	ZBY4101	
Custom legend plate and insert (specify engraving) 2 lines of 11 characters (including spaces) maximum per line	Black background	White	ZBY2002	14.20
	Red background	White	ZBY2004	
	White background	Black	ZBY4001	
	Yellow background	Black	ZBY4005	
With international language marked legend	Black or red background ■	O (black background)	ZBY2146	3.40
		O (red background)	ZBY2931	
		I	ZBY2147	
		II	ZBY2148	
		O-I	ZBY2178	
With English language marked legend	Black or red background ■	I-II	ZBY2179	3.40
		I-O-II	ZBY2186	
		AUTO	ZBY2115	
		AUTO-HAND	ZBY2364	
		AUTO-O-HAND	ZBY2385	
		CLOSE	ZBY2314	
		DOWN	ZBY2308	
		EMERGENCY STOP	ZBY2330	
		FAST	ZBY2328	
		FORWARD	ZBY2305	
		FOR-REV	ZBY2371	
		HAND	ZBY2316	
		HAND-OFF-AUTO	ZBY2387	
		INCH	ZBY2321	
		JOG	ZBY2382	
		LEFT	ZBY2310	
		OFF	ZBY2312	
		OFF-ON	ZBY2367	
		ON	ZBY2311	
		OPEN	ZBY2313	
		POWER ON	ZBY2326	
		RESET (red background)	ZBY2323	
		RESET (black background)	ZBY2322	
		REVERSE	ZBY2306	
		RIGHT	ZBY2309	
		RUN	ZBY2334	
		SLOW	ZBY2327	
		START	ZBY2303	
		STOP	ZBY2304	
		STOP-START	ZBY2366	
		UP	ZBY2307	

▲ For legends, see page 19-59.

■ Start functions: white letters on black background. Stop functions: white letters on red background (unless otherwise specified above).

Table 19.154: Large (30 x 50 mm) Legend Holders for 18 x 27 mm Legends

Description ♦	For use with	Color	Catalog Number	\$ Price
Without legend insert	Circular and square heads	—	ZBZ33	2.00
With blank legend insert	Circular and square heads	Black or red background	ZBY6101	3.40
		White or yellow background	ZBY6102	

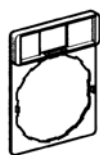
Table 19.155: 30 x 40 mm legend holder (flush mounting with bezel) for 8 x 27 mm legends

Description ♦	Color	Catalog Number	\$ Price
Without legend	—	ZBZ34	2.00
With blank legend	Black or red background	ZBY2H101	3.40
	White or yellow background	ZBY4H101	

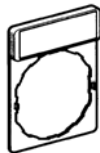
Table 19.156: 30 x 50 mm legend holder (flush mounting with bezel) for 18 x 27 mm legends

Description ♦	Color	Catalog Number	\$ Price
Without legend	—	ZBZ35	4.20
With blank legend	Black or red background	ZBY6H101	5.40
	White or yellow background	ZBY6H102	

♦ For custom legends, please see page 19-59



ZBZ32



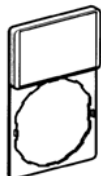
ZBY*101



ZBY2303



ZBZ33



ZBY610*



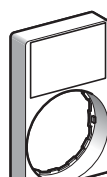
ZBZ34



ZBY*H101



ZBZ35



ZBY6H10*

Table 19.157: Marked Legends for 8 x 27 mm (for 30 x 40 mm legend holders ZBZ32)



ZBY02178



ZBY02303

Color	Marking	Text	Catalog Number	\$ Price
Black or red background▲	International	O (black background) O (red background) I II O-I I-II I-O-II	ZBY02146 ZBY02931 ZBY02147 ZBY02148 ZBY02178 ZBY02179 ZBY02186	1.70
	English	AUTO AUTO-HAND AUTO-O-HAND CLOSE DOWN EMERGENCY STOP FAST FORWARD FOR-REV HAND HAND-OFF-AUTO INCH JOG LEFT OFF OFF-ON ON OPEN POWER ON RESET (red background) RESET (black background) REVERSE RIGHT RUN SLOW START STOP STOP-START UP	ZBY02115 ZBY02364 ZBY02385 ZBY02314 ZBY02308 ZBY02330 ZBY02328 ZBY02305 ZBY02371 ZBY02316 ZBY02387 ZBY02321 ZBY02382 ZBY02310 ZBY02312 ZBY02367 ZBY02311 ZBY02313 ZBY02326 ZBY02323 ZBY02322 ZBY02306 ZBY02309 ZBY02334 ZBY02327 ZBY02303 ZBY02304 ZBY02366 ZBY02307	1.70

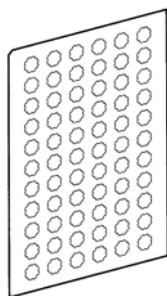
▲ Start functions: white letters on black background. Stop functions: white letters on red background (unless otherwise specified above).

Table 19.158: Legends for Customer Engraving (inserts only)

Description	For use with	Color	Text Color	Catalog Number	\$ Price
8 x 27 mm	30 x 40 mm legend holders	Black or red background	White	ZBY0101	1.70
		White or yellow background	Black	ZBY0102	
18 x 27 mm	30 x 50 mm legend holders	Black or red background	White	ZBY5101	
		White or yellow background	Black	ZBY5102	

Table 19.159: Legends for Factory Engraving (inserts only)

Description	For use with	Color	Text Color	Catalog Number	\$ Price
8 x 27 mm Custom legend/insert only (specify engraving) 2 lines of 11 characters (including spaces) maximum per line Example: ZBY01002 marked "Robot"	30 x 40 mm legend holders	Black background	White	ZBY01002	12.20
		Red background	White	ZBY01004	
		White background	Black	ZBY01001	
		Yellow background	Black	ZBY01005	
18 x 27 mm Custom legend/insert only (specify engraving) 3 lines of 11 characters (including spaces) maximum per line Example: ZBY05002 marked "Robot"	30 x 50 mm legend holders	Black background	White	ZBY05002	12.20
		Red background	White	ZBY05004	
		White background	Black	ZBY05001	
		Yellow background	Black	ZBY05005	



ZBY1101

Table 19.160: Sheets of Legends for Push Buttons, Switches, and Pilot Lights

Description	Marking	Text	Catalog Number	\$ Price	
Sheets of 66 circular peel-off transparent self-adhesive legends	Blank-Round		ZBY1101	6.20	
	Blank-Square legends		ZBCY1101	6.20	
	International		O	ZBY1146	10.40
			I	ZBY1147	
			II	ZBY1148	
			III	ZBY1149	
			STOP	ZBY1304	
			→	ZBY1912	
	English		HAND	ZBY1316	10.40
			OFF	ZBY1312	
			ON	ZBY1311	
			START	ZBY1303	
	SiS Label Software	Legend Design Software: English, French, German, Spanish, Italian		XBZY2U	104.00

Table 19.161: Push Button Caps—Unmarked

For use with	Type of Push	Color	Catalog Number	\$ Price
ZB5AA0 push button heads	Flush	White	ZBA1	2.00
		Black	ZBA2	
		Green	ZBA3	
		Red	ZBA4	
		Yellow	ZBA5	
		Blue	ZBA6	
		6 colors ▲	ZBA9	
	Extended	White	ZBL1	2.00
		Black	ZBL2	
		Green	ZBL3	
		Red	ZBL4	
		Yellow	ZBL5	
		Blue	ZBL6	
		6 colors ▲	ZBL9	
				4.20



ZBA•



ZBL•

Table 19.162: Push Button Caps—Marked

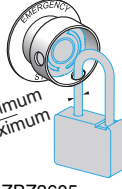
For use with	Type of Push	Marking		Cap Color	Catalog Number	\$ Price
		Text	Color			
ZB5AA0 push button heads	Flush	I ■	White	Green	ZBA331	4.20
			Black	White	ZBA131	
		START ■	White	Green	ZBA333	
			Black	White	ZBA133	
		ON	White	Green	ZBA341	
			Black	White	ZBA141	
		UP ■	Black	White	ZBA343	
		DOWN ■	White	Black	ZBA344	
		⊕	White	Green	ZBA345	
		⊕	White	Black	ZBA245	
		◇	White	Green	ZBA346	
		↑	Black	White	ZBA334 ♦	
			White	Black	ZBA335 ♦	
		O ■	White	Red	ZBA432	
				Black	ZBA232	
		STOP ■	White	Red	ZBA434	
				Black	ZBA234	
		OFF	White	Red	ZBA435	
				Black	ZBA235	
		R ■	White	Blue	ZBA639	

- ▲ Set of 6 different colored caps: white, black, green, red, yellow, blue.
- Double injection molded marking.
- ♦ Cap supplied not clipped-in, allowing orientation of arrow in any one of 4 directions: ↑, ↓, ← or →



ZBA•33

Table 19.163: Accessories

Description	Application	Color	Catalog Number	\$ Price
 Padlocking kit Conforming to EN / ISO 13850 ♦ (See legends below)	For Emergency Stop function only, with the following Ø40 mm trigger-action push buttons: XB5AT8♦ XB5AS8♦ XB5AS9♦ ZB5AT8♦ ZB5AS8♦ ZB5AS9♦	Yellow	ZBZ3605	108.00
		Chromium Plated	ZBZ1600	108.00
Metal guards Padlockable	For Emergency stop function only with the following Ø40 mm trigger-action push buttons: XB5AT8♦ XB5AS8♦ XB5AS9♦ ZB5AT8♦ ZB5AS8♦ ZB5AS9♦	Black	ZBZ1602	
		Red	ZBZ1604	
		Yellow	ZBZ1605	
		Blue	ZBZ1606	
Plastic guards ■	Round Guard for ZB5AS5430 EMO Mushroom Operators	Yellow	ZB4BZ1905	25.80
	Narrow Flange Guard for ZB5AS5430 or ZB5AS84430 EMO Mushroom Operators★	Yellow	ZB4BZ2005	
	Trigger Action Guard for ZB5AS84430 EMO Mushroom Operators	Yellow	ZB4BZ2105	
Padlockable flaps	For push buttons	Black	ZB4BZ62	32.80
		Red	ZB4BZ64	
Plastic blanking plug, round▲	For Ø22 mm units with round heads	Black	ZB5SZ3	11.00
Plastic blanking plug, square▲	For Ø22 mm units with square heads	Black	ZB5SZ5	11.00
Square insert	To give square appearance to ZB5A round heads	Black	ZB5AZ31	2.00
Mounting nut	Operator	—	ZB5AZ901	4.40
Tool	For tightening mounting nut ZB5AZ901	—	ZB5AZ905	12.40
Plate	Anti-rotation of head	—	ZB5AZ902	2.00
Description Ø60 mm Legend for padlocking device ZBZ3605	Marking Without EMERGENCY STOP	Yellow	ZBY9101T	3.40
		Yellow	ZBY9330T	

- ▲ Mounting nut included with blanking plug.
- For additional information, refer to publication 9001DB0601R6/06.
- ♦ Standard circular legends are not compatible with this product. Use special legends ZBY♦•T listed above.
- ★ Maximum panel thickness is 2.5 mm.

Table 19.164: BA9s Bulbs and Associated Accessories

Description	Characteristics	Catalog Number	\$ Price
Replacement bulbs (Type BA9s) Incandescent	6 V, 1.2 W	DL1CB006	11.00
	12 V, 2 W	DL1CE012	
	24 V, 2 W	DL1CE024	
	120–130 V, 2.4 W	DL1CE130	
Neon bulbs	120–130 V	DL1CF110	15.20
	230–240 V	DL1CF220	
Bulb extractor	—	XBFX13	11.00
Lens cap tightening tool	Illuminated push buttons with flush push	ZBZ8	6.20
Power driver bits for mounting and wiring (package of 5)	Cross headed screw (POZIDRIV type 1)	ZB4BZ905	52.00
Mounting Adapter	For mounting 22 mm push button in 30 mm knockout	ZBZ41	10.40

Table 19.165: Bellows Seals for Harsh Environments (IP 69K) ▼

Description	For use with	Color & Material	Sold in Lots of	Catalog Number	\$ Price
Bellows Seals for harsh environments (Humidity, dust, high-pressure cleaning)	XB5 plastic mushroom head push button ▼, Ø40 mm or Ø60 mm	Red Silicone	2	ZBZ48	12.40
		Black EPDM	2	ZBZ28	
		Yellow EPDM	2	ZBZ58	

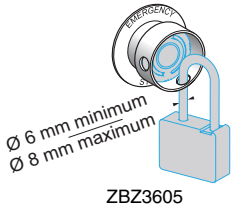
▼ Only when mounted on control stations. Use special legends ZBY♦•T.

Table 19.166: Boot for standard selector switch handle

Description	For use with	Catalog Number	\$ Price
Boot for standard handle	ZB5A♦♦	ZBDD2	12.40

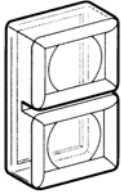
Table 19.167: Replacement Keys

Description	Key Number	Catalog Number	\$ Price
Set of 2 keys	455	ZBG455	11.00
	421E	ZBG421E	
	458A	ZBG458A	
	520E	ZBG520E	
	3131A	ZBG3131A	
Set of 2 keys, One of which is supplied booted (rubber boot)	455	ZBG455P	23.40
	421E	ZBG421EP	
	458A	ZBG458AP	
	520E	ZBG520EP	
	3131A	ZBG3131AP	





ZBP0



ZBW008



ZBV01•3



ZBV01•

Table 19.168: Clear Boots

Description	For use with	Material	Catalog Number	\$ Price
Single boots	Booted push buttons with circular head	Neoprene	ZBP0	12.40
	Booted push buttons with circular head used in food industry applications	Silicone	ZBP0A	12.40
Double boots	Double-headed push buttons, with or without pilot light	Neoprene	ZBW008	32.80
	Double-headed push buttons used in food industry applications	Silicone	ZBW008A	32.80

Table 19.169: Colored boots






Description	Color	Catalog Number	\$ Price
Single boot (can be replaced without dismantling the head)	Black	ZB2 BP012	13.00
	Green	ZB2 BP013	13.00
	Red	ZB2 BP014	13.00
	Yellow	ZB2 BP015	13.00
	Blue	ZB2 BP016	13.00

Table 19.170: Lens Caps

For use with	Color	Catalog Number	\$ Price
Lens caps for Protected LED® light modules			
Pilot lights	White	ZBV0113	5.40
	Green	ZBV0133	
	Red	ZBV0143	
	Yellow	ZBV0153	
	Blue	ZBV0163	
Illuminated push buttons with flush push	White	ZBW9113	5.40
	Green	ZBW9133	
	Red	ZBW9143	
	Yellow	ZBW9153	
	Blue	ZBW9163	
Illuminated push buttons with extended push	White	ZBW9313	5.40
	Green	ZBW9333	
	Red	ZBW9343	
	Yellow	ZBW9353	
	Blue	ZBW9363	
Circular lens caps for BA9s light modules			
Pilot lights	White	ZBV011	5.40
	Green	ZBV013	
	Red	ZBV014	
	Yellow	ZBV015	
	Blue	ZBV016	
	Clear	ZBV017	
Illuminated push buttons with flush push	White	ZBW911	5.40
	Green	ZBW913	
	Red	ZBW914	
	Yellow	ZBW915	
	Blue	ZBW916	
	Clear	ZBW917	
Illuminated push buttons with extended push	White	ZBW931	5.40
	Green	ZBW933	
	Red	ZBW934	
	Yellow	ZBW935	
	Blue	ZBW936	
	Clear	ZBW937	
Square lens caps for Protected LED light modules (ZB5C operators only)			
Pilot lights	White	ZBCV0113	9.40
	Green	ZBCV0133	
	Red	ZBCV0143	
	Yellow	ZBCV0153	
	Blue	ZBCV0163	
Illuminated push buttons with flush push	White	ZBCW9113	9.40
	Green	ZBCW9133	
	Red	ZBCW9143	
	Yellow	ZBCW9153	
	Blue	ZBCW9163	
Illuminated push buttons with extended push	White	ZBCW9313	9.40
	Green	ZBCW9333	
	Red	ZBCW9343	
	Yellow	ZBCW9353	
	Blue	ZBCW9363	

Table 19.171: Non-Illuminated Momentary Push Button Operators—UL Types 4, 13/NEMA 4, 13

For use in hazardous locations—See page 19-83.
Contact blocks and legend plate not included unless otherwise noted.

Description	Color	Operator with 1 N.O. and 1 N.C. Contact (KA1)	\$ Price	Operator with 1 N.O. Contact (KA2)	Operator with 1 N.C. Contact (KA3)	\$ Price	Operator Only with No Contacts	\$ Price
 9001KR1B Full Guard	Black	KR1BH13	89.00	KR1BH5	KR1BH6	66.00	KR1B	38.60
	Red	KR1RH13		KR1RH5	KR1RH6		KR1R	
	Green	KR1GH13		KR1GH5	KR1GH6		KR1G	
	Universal ▲	KR1UH13		KR1UH5	KR1UH6		KR1U	
	Other ■	KR1■H13		KR1■H5	KR1■H6		KR1■	
 9001KR3B No Guard	Black	KR3BH13	89.00	KR3BH5	KR3BH6	66.00	KR3B	38.60
	Red	KR3RH13		KR3RH5	KR3RH6		KR3R	
	Green	KR3GH13		KR3GH5	KR3GH6		KR3G	
	Universal ▲	KR3UH13		KR3UH5	KR3UH6		KR3U	
	Other ■	KR3■H13		KR3■H5	KR3■H6		KR3■	
 9001KR2B Extended Guard	Black	KR2BH13	89.00	KR2BH5	KR2BH6	66.00	KR2B	38.60
	Red	KR2RH13		KR2RH5	KR2RH6		KR2R	
	Green	KR2GH13		KR2GH5	KR2GH6		KR2G	
	Universal ▲	KR2UH13		KR2UH5	KR2UH6		KR2U	
	Other ■	KR2■H13		KR2■H5	KR2■H6		KR2■	
 9001KR4B 1-3/8 in. (35 mm) Diameter Mushroom Button	Snap-In Plastic Mushroom Button							
	Black	KR4BH13	138.00	KR4BH5	KR4BH6	112.00	KR4B	81.00
	Red	KR4RH13		KR4RH5	KR4RH6	112.00	KR4R	81.00
	Red ◆	KR4R05H13		KR4R05H5	KR4R05H6	119.00	KR4R05	86.00
	Green	KR4GH13		KR4GH5	KR4GH6	112.00	KR4G	81.00
	Other ★	KR4★H13		KR4★H5	KR4★H6	112.00	KR4★	81.00
	Screw-On Plastic Mushroom Button with Set Screw Security ▼							
	Black	KR24BH13	138.00	KR24BH5	KR24BH6	112.00	KR24B	81.00
	Red	KR24RH13		KR24RH5	KR24RH6		KR24R	
	Green	KR24GH13		KR24GH5	KR24GH6		KR24G	
Other★	KR24★H13	KR24★H5		KR24★H6	KR24★			
Screw-in Metal Mushroom Button with Set Screw Security								
Black	—	—	—	—	—	9001KR24BM	90.00	
Red	—	—	—	—	—	9001KR24RM		
Green	—	—	—	—	—	9001KR24GM		
 9001KR5B 2-1/4 in. (57 mm) Diameter Mushroom Button	Snap-In Plastic Mushroom Button							
	Black	KR5BH13	138.00	KR5BH5	KR5BH6	112.00	KR5B	81.00
	Red	KR5RH13		KR5RH5	KR5RH6	119.00	KR5R	81.00
	Red ◆	KR5R05H13 ◆		KR5R05H5 ◆	KR5R05H6 ◆	112.00	KR5R05 ◆	86.00
	Green	KR5GH13		KR5GH5	KR5GH6	112.00	KR5G	81.00
	Other★	KR5★H13		KR5★H5	KR5★H6	112.00	KR5★	81.00
	Screw-On Plastic Mushroom Button with Set Screw Security ▼							
	Black	KR25BH13	138.00	KR25BH5	KR25BH6	112.00	KR25B	81.00
	Red	KR25RH13		KR25RH5	KR25RH6		KR25R	
	Green	KR25GH13		KR25GH5	KR25GH6		KR25G	
Other★	KR25★H13	KR25★H5		KR25★H6	KR25★			
Screw-in Metal Mushroom Button with Set Screw Security								
Black	—	—	—	—	—	9001KR25BM	101.00	
Red	—	—	—	—	—	9001KR25RM		
Green	—	—	—	—	—	9001KR25GM		

- ▲ The universal push button operators contain one each of the following color inserts: black, red, green, yellow, orange, blue and white.
- See Table 19.172 for color code.
- ◆ Knob has the words "Emergency Stop" in raised letters highlighted in white for readability.
- ★ See Table 19.172 for color code.
- ▼ See Table 19.172 for Metal button price adder.

Table 19.172: Color Codes




Color	KR1, 2, 3 Place Color Code in Type Number ■	KR4, 5, 24, 25 Place Color Code in Type Number ★
Blue	L	L
Yellow	Y	Y
White	W	—
Orange	S	S
Gray	E	—

Table 19.173: Contact Sequences (for page 19-64)


9001 KR8RH1 or H13				
		Pull	Ctr	Push
(KA1)	KA3	X	O	O
	KA2	O	O	X
9001 KR8RH25				
KA3	X	O	O	O
KA5	X	X	O	O
KA2	O	O	O	X

NOTE: To select and order contact blocks, light modules, and accessories, see pages 19-81 through 19-88.


Table 19.174: 30 mm Multifunction Operators

		Non-Illuminated Push-Pull Mushroom Operators						
		Description ↕	Color	With 2 N.C. Contacts (1 KA3, 1 KA5)	With 1 N.O. & 1 N.C. Contact (1 KA1)	\$ Price	Without Contacts ▽	\$ Price
 <p>KR9R94H13 Set Screw Style</p>	3 Position 1-5/8 in. (40 mm), Screw-On Momentary Pull Maintained Neutral Momentary Push ◊	Red Green Other △	KR8RH25 KR8GH25 KR8ΔH25	— — —	142.	KR8R KR8G KR8Δ	86.	
	2 Position 1-5/8 in. (40 mm), Screw-On Maintained Pull Maintained Push ◊	Red * Green Other △	— — —	KR9RH13 KR9GH13 KR9ΔH13	188.	KR9R KR9G KR9Δ	129.	
	2 Position 1-5/8 in. (40 mm), Screw-On Head with Set Screw Maintained Pull Maintained Push ◊	Red	—	KR9R94H13	194.	KR9R94	134.	
 <p>9001KR9RM94</p>	2 Position 1-1/2 in. (40 mm) Diameter	Black	—	—	—	9001KR9BM94	138.	
		Red	—			9001KR9RM94		
		Green	—			9001KR9GM94		
 <p>9001KR9RM95</p>	2 Position 2-3/8 in. (60 mm) Diameter	Black	—	—	—	9001KR9BM95	149.	
		Red	—			9001KR9RM95		
		Green	—			9001KR9GM95		

Non-Illuminated Turn-to-Release Mushroom Operators

	Description	Color	With 1 N.O. & 1 N.C. Contact (KA1)	\$ Price	With 2 N.O. & 2 N.C. Contacts (KA2)	\$ Price	Without Contacts	\$ Price
 <p>9001KR16H2 Trigger Action</p>	2 Position Turn-to-Release Trigger Action	Red	KR16H13	172.	KR16H2	218.	KR16	113.

Illuminated Push-Pull Mushroom Operators

 <p>9001KR9P1 1.625 in. Diameter Knob For 1-3/8 in. or 2-1/4 in. Diameter Knob ◊ Includes Type KN379 Legend Plate Marked Pull To Start Push To Stop</p>	Description ↕	Voltage	With Red Knob and 2 N.C. Contacts (1 KA3, 1 KA5)	With Other Color Knob and 2 N.C. Contacts (1 KA3, 1 KA5)	\$ Price	With Other Color Knob Without Contacts ▽	\$ Price
	3 Position Illuminated Momentary Pull Maintained Neutral Momentary Push ◊	110-120 V, 50-60 Hz Other—Transformer, LED, Flashing ◊ Other—Full Voltage, Resistor, Neon ☆	KR8P1RH25 KR8PΔRH25 KR8PΔRH25	KR8P1ΔH25 KR8PΔΔH25 KR8PΔΔH25	267. 267. 215.	KR8P1Δ KR8PΔΔ KR8PΔΔ	201. 201. 171.
Description ↕	Voltage	With Red* Knob and 1 N.O. & 1 N.C. Contact (KA1)	With Other Color Knob and 1 N.O. & 1 N.C. Contact (KA1)	\$ Price	With Other Color Knob Without Contacts	\$ Price	
2 Position Illuminated Maintained Pull Maintained Push	110-120 V, 50-60 Hz Other—Transformer, LED, Flashing ◊ Other—Full Voltage, Resistor, Neon ☆	KR9P1RH13 KR9PΔRH13 KR9PΔRH13	KR9P1ΔH13 KR9PΔΔH13 KR9PΔΔH13	316. 316. 257.	KR9P1Δ KR9PΔΔ KR9PΔΔ	243. 243. 215.	

- △ Choose one color from the Color Codes table below, and insert the color code in Type number. **Example:** KR9 with a yellow knob = KR9Y
- Add the voltage assembly code as chosen from page 19-82. **Example:** KR8P with a 277 V 50-60 Hz voltage = KR8P8
- ◊ The knob must be the same color as the LED light module chosen, for example, for a green LED, use a green knob.
- ☆ On neon light modules, use clear knobs only.
- ▽ These operators can be ordered complete with contact blocks. For maximum block usage, see page 19-84. Add the "H" number chosen from page 19-84 to the end of the operator Type number and add the cost of the "H" number to the operator cost.
- ◉ KR11UH1 has 1 KA1 (1 N.O., 1 N.C.) and KR12UH1H1 has 2 KA1 (2 N.O., 2 N.C.).
- * To obtain a red knob with "Push Emergency Stop" printed on the red knob—substitute "R05" in place of "R" and add \$2.10 to the price.
- ◊ For 1-3/8 in. or 2-1/4 in. Dia. Knob:
 - a) Order Type -20 or -21 knob from page 19-88.
 - b) Order 9001K54 adapter (no charge)—allows Type -20 or -21 knob to fit on push pull operators. Voids UL and NEMA 6 rating.
 - c) Can order assembled operator by adding color code to Type -20 or -21. **Example:** 9001KR9R would be 9001KR9R20 or 9001KR9R21. No price adder.
- ◉ See page 19-63 for contact sequences.
- ◉ See Table 19.175 below.

Table 19.175: Other Color Code Selection






Color	KR6, KR7, KR67	KR11, KR12	KR8, KR9
Black ■	B	B	B
Red	R	R	R
Green	G	G	G
Blue	—	L	L
Yellow	—	Y	Y
White	—	W	W
Orange ■	—	S	S
Clear	—	—	C
Amber	—	—	A
Gray	—	E	—

■ These colors are not available on illuminated push-pull operators.

NOTE: When ordering, add prefix 9001 to the catalog number.
To select and order contact blocks, light modules, and accessories, see pages 19-81 through 19-88.

Table 19.176: Illuminated Momentary Push Button Operators—UL Types 4, 13/NEMA 4, 13

For use in hazardous locations—See page 19-83.
Legend plate and contact block not included unless otherwise noted.

Description	Voltage and Frequency	Style	With Red Color Cap and 1 N.O. and 1 N.C. Contact (KA1)	With Green Color Cap and 1 N.O. and 1 N.C. Contact (KA1)	\$ Price □	With Other Color Cap Without Contact Block ▲	\$ Price ◇
 9001K1L1 Full Guard Illuminated Push Button Clear Plastic Top	110–120 V, 50–60 Hz	Transformer	K1L1RH13	K1L1GH13	231.	K1L1▼	184.
	220–240 V, 50–60 Hz	Transformer	K1L7RH13	K1L7GH13	231.	K1L7▼	184.
	24–28 Vac/Vdc	Full Voltage	K1L35RH13	K1L35GH13	198.	K1L35▼	138.
	For other voltages see Table ■	Transformer or Flashing	K1L■RH13	K1L■GH13	231.	K1L■▼	184.
		Full Voltage	K1L■RH13	K1L■GH13	198.	K1L■▼	138.
		Resistor or Neon ◆	K1L■RH13	K1L■GH13	198.	K1L■▼	138.
		LED ★	K1L■RH13	K1L■GH13	231.	K1L■▼	184.
 9001K3L1 Full Guard Illuminated Push Button Metal Top	110–120 V, 50–60 Hz	Transformer	K3L1RH13	K3L1GH13	231.	K3L1▼	184.
	220–240 V, 50–60 Hz	Transformer	K3L7RH13	K3L7GH13	231.	K3L7▼	184.
	24–28 Vac/Vdc	Full Voltage	K3L35RH13	K3L35GH13	198.	K3L35▼	138.
	For other voltages see Table ■	Transformer or Flashing	K3L■RH13	K3L■GH13	231.	K3L■▼	184.
		Full Voltage	K3L■RH13	K3L■GH13	198.	K3L■▼	138.
		Resistor or Neon ◆	K3L■RH13	K3L■GH13	231.	K3L■▼	138.
		LED ★	K3L■RH13	K3L■GH13	231.	K3L■▼	184.
 9001K2L1 No Guard Illuminated Push Button	110–120 V, 50–60 Hz	Transformer	K2L1RH13	K2L1GH13	217.	K2L1▼	153.
	220–240 V, 50–60 Hz	Transformer	K2L7RH13	K2L7GH13	217.	K2L7▼	153.
	24–28 Vac/Vdc	Full Voltage	K2L35RH13	K2L35GH13	184.	K2L35▼	125.
	For other voltages see Table ■	Transformer or Flashing	K2L■RH13	K2L■GH13	217.	K2L■▼	153.
		Full Voltage	K2L■RH13	K2L■GH13	184.	K2L■▼	125.
		Resistor or Neon ◆	K2L■RH13	K2L■GH13	184.	K2L■▼	125.
		LED ★	K2L■RH13	K2L■GH13	217.	K2L■▼	153.
 9001K2LR20 1-3/8 in. (35 mm) Illuminated Mushroom	110–120 V, 50–60 Hz	Transformer	K2L1R20H13	K2L1G20H13	217.	Order K2L ■▼ Above ▲	
	220–240 V, 50–60 Hz	Transformer	K2L7R20H13	K2L7G20H13	217.		
	24–28 Vac/Vdc	Full Voltage	K2L35R20H13	K2L35G20H13	184.		
	For other voltages see Table ■	Transformer or Flashing	K2L■R20H13	K2L■G20H13	217.		
		Full Voltage	K2L■R20H13	K2L■G20H13	184.		
		Resistor or Neon ◆	K2L■R20H13	K2L■G20H13	184.		
		LED ★	K2L■R20H13	K2L■G20H13	217.		
 9001K2LR21 2-1/4 in. (57 mm) Illuminated Mushroom	110–120 V, 50–60 Hz	Transformer	K2L1R21H13	K2L1G21H13	217.	Order K2L ■▼ Above ▲	
	220–240 V, 50–60 Hz	Transformer	K2L7R21H13	K2L7G21H13	217.		
	24–28 Vac/Vdc	Full Voltage	K2L35R21H13	K2L35G21H13	184.		
	For other voltages see Table ■	Transformer or Flashing	K2L■R21H13	K2L■G21H13	217.		
		Full Voltage	K2L■R21H13	K2L■G21H13	184.		
		Resistor or Neon ◆	K2L■R21H13	K2L■G21H13	184.		
		LED ★	K2L■R21H13	K2L■G21H13	217.		

- ▲ These operators can be ordered complete with contact blocks. For maximum block usage, see page 19-84. Add the "H" number chosen from page 19-84 to the end of the operator type number and add the cost of the "H" number to the operator cost.
- Add the voltage assembly code as chosen from Table 19.228 or 19.229 on page 19-82. **Example:** K2L▲ with 240 Vac/Vdc = K2L25
- ◆ On neon light modules, use clear color caps only.
- ★ The cap must be the same color as the LED light module chosen, e.g., for red LED, use red color cap.
- ▼ Add the color code as chosen from the color cap table. **Example:** K2L25◆ with a blue 136 mushroom button = K2L25L2
- ▲ The only difference between a no guard (K2L◆) operator and mushroom button operator is the color cap.
- Price includes operator, light module, contact block, and color cap.
- ◇ Price includes operator, light module, and color cap.

Table 19.177: Color Caps

Color	Color Codes		
	▼ K1L, K2L, K3L	▼ 1-3/8 in. Mushroom	▼ 2-1/4 in. Mushroom
Red	R	R20	R21
Green	G	G20	G21
Blue	L	L20	L21
Yellow	Y	Y20	Y21
White	W	W20	W21
Clear	C	C20	C21
Amber	A	A20	A21

NOTE: When ordering, add prefix 9001 to the catalog number.

To select and order contact blocks, light modules, and accessories, see pages 19-81 through 19-88.

NOTE: To order, add prefix 9001 to the beginning of the catalog number.

Table 19.178: 2-Position Selector Switches

Contact Block Required				1 — Contact Closed 0 — Contact Open						
Contact Block Position	Quantity and Type KA1 or KA2 or KA3		Mount on Side KA1 or KA2 or KA3		Left	Right	Left	Right		
	<p>Top View</p>	KA1	or	KA3	KA1 #2	or	KA3 #2	1	0	0
KA2				KA2 #2			0	1	1	0
KA1		or	KA3	KA1 #1	or	KA3 #1	1	0	0	1
			KA2			KA2 #1	0	1	1	0
Cam (see page 19-69)						E		D		
Non-Illuminated Operators				Cat. No.		Cat. No.		\$ Price		
Manual Return ▲, Operator Only (without contact blocks)										
Without Knob				KS11		KS12		42.80		
With Knob (select style and color from Table 19.179 below)				KS11*		KS12*		42.80		
Key Operated with E10 Key (Code 1,2,3)				KS11K**		KS12K**		138.00		
Operator with Contact Blocks and Standard black knob										
With 1 KA1 on Side #2				KS11BH13		—		106.00		
With 1 KA1 on Side #1				KS11BH1		—		106.00		
With 1 KA1 on Side #1 and 1 KA1 on side #2				KS11BH2		—		152.00		
Spring Return from Left ▲, Operator Only (without contact blocks)										
Without Knob				KS25		—		71.00		
With Knob (select style and color from Table 19.179)				KS25*		—		71.00		
Key Operated with E10 Key (Code 2 only)*				KS25K2		—		167.00		
Spring Return from Right ▲, Operator Only (without contact blocks)										
Without Knob				—		KS34		71.00		
With Knob (select style and color from Table 19.179 below)				—		KS34*		71.00		
Key Operated with E10 Key (Code 1 only)				—		KS34K1		167.00		
Illuminated Operators				Cat. No.		Cat. No.		\$ Price		
Manual Return ▲, Operator Only (without contact blocks)										
Without Knob, 110-120V 50-60 Hz Transformer				K11J1		K12J1		158.00		
With Standard Red Knob, 110-120V 50-60 Hz Transformer				K11J1R		K12J1R		167.00		
With Other Color Knob and other voltage Light Module ■ ◆				K11J■◆		K12J■◆		167.00		
Spring Return from Left ▲, Operator Only (without contact blocks)										
Without Knob, 110-120V 50-60 Hz Transformer				K25J1		—		185.00		
With Standard Red Knob, 110-120V 50-60 Hz Transformer				K25J1R		—		197.00		
With Other Color Knob and other voltage Light Module ■ ◆				K25J■◆		—		197.00		
Spring Return from Right ▲, Operator Only (without contact blocks)										
Without Knob, 110-120V 50-60 Hz Transformer				—		K34J1		185.00		
With Standard Red Knob, 110-120V 50-60 Hz Transformer				—		K34J1R		197.00		
With Other Color Knob and other voltage Light Module ■ ◆				—		K34J■◆		197.00		

- ▲ These operators can be ordered complete with contact blocks. Add the "H code" from page 19-84 as needed for your application.
- Add the voltage assembly code as chosen from page 19-82. Example: K25J■ with 208 Vac = K25J3.
- ◆ Add the knob color code from Table 19.179. For LED, knob color must match LED.
- ★ Add the key withdrawal code from Table 19.180.

Table 19.179: Selector Switch Assembly Code and Knob Cat. No.

Color	Standard Knob		Gloved Hand Knob		\$ Price
	◆ Knob Code	Cat. No.	◆ Knob Code	Cat. No.	
Black	B	B11	FB	B25	9.90
Red	R	R8	FR	R24	
Green	G	G8	FG	G24	
Yellow	Y	Y8	FY	Y24	
Blue	L	L8	FL	L24	
White	W	W8	FW	W24	
Amber	A	A8	FA	A24	
Clear	C	C8	FC	C24	

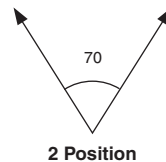


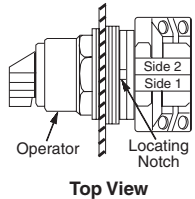
Table 19.180: ★ Key Withdrawal Codes

Code	Position
1	Left Only
2	Right Only
3	Left and Right

NOTE: To select and order Contact Blocks, Light Modules, Knobs, and Accessories, see pages 19-81 through 19-88.

NOTE: To order, add prefix 9001 to the beginning of the catalog number.

Table 19.181: 3-Position Selector Switches

Contact Block Required				1 - Contact Closed 0 - Contact Open										
Contact Block Position	Quantity and Type	Mount on Side	Center ↕ Left Right	Center ↕ Left Right	Center ↕ Left Right	Center ↕ Left Right	Center ↕ Left Right	Center ↕ Left Right	Center ↕ Left Right	Center ↕ Left Right	Center ↕ Left Right	Center ↕ Left Right	Center ↕ Left Right	
														KA1
 <p>Top View</p>	KA1 or KA2	KA1 #2	KA3 #2	1 0 0	1 0 0	0 0 1	1 0 0	1 0 0	1 0 0	1 0 0	1 0 0	0 1 0	1 1 0	
			KA2 #2	0 1 1	0 0 1	0 1 0	0 1 0	0 0 1	0 1 1	0 1 1	1 0 0	0 0 1		
	KA1 or KA2	KA1 #1	KA3 #1	0 0 1	1 0 0	0 0 1	1 0 0	0 1 0	0 0 1	1 0 1	0 0 1	0 1 1	0 1 1	
			KA2 #1	1 1 0	0 0 1	0 1 0	0 1 0	0 0 1	1 0 0	0 1 0	0 1 0	0 1 0	1 0 0	
Cam (see page 19-69)				B	C	D	E	F	G	J	L	M		
Non-Illuminated Operators				Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	\$ Price
Manual Return, Operator Only (without contact blocks) ▲														
Without Knob				KS42	KS43	KS44	KS45	KS46	KS47	KS49	KS401	KS402	43.00	
With Knob (select style and color from table 19.168 below)				KS42♦	KS43♦	KS44♦	KS45♦	KS46♦	KS47♦	KS49♦	KS401♦	KS402♦	53.00	
Key Operated with E10 Key (Code 4 through 10) ▼				KS42K▼	KS43K▼	KS44K▼	KS45K▼	KS46K▼	KS47K▼	KS49K▼	KS401K▼	KS402K▼	138.00	
Operator with Contact Blocks and Standard black knob ★														
With 1 KA1 on Side #2 (H13)				KS42BH13	KS43BH13	KS44BH13	KS45BH13	KS46BH13	KS47BH13	KS49BH13	KS401BH13	KS402BH13	106.00	
With 1 KA1 on Side #1 (H1)				KS42BH1	KS43BH1	KS44BH1	KS45BH1	KS46BH1	KS47BH1	KS49BH1	KS401BH1	KS402BH1	106.00	
With 1 KA1 on Side #1 and 1 KA1 on side #2 (H2)				KS42BH2	KS43BH2	KS44BH2	KS45BH2	KS46BH2	KS47BH2	KS49BH2	KS401BH2	KS402BH2	152.00	
Spring Return from Left to Center, Operator Only (without contact blocks) ▲														
Without Knob				KS62	KS63	KS64	KS65	KS66	KS67	KS69	KS601	KS602	71.00	
With Knob (select style and color from table 19.168 below)				KS62♦	KS63♦	KS64♦	KS65♦	KS66♦	KS67♦	KS69♦	KS601♦	KS602♦	81.00	
Key Operated with E10 Key (Code 5, 6 or 9 only) ▼				KS62K▼	KS63K▼	KS64K▼	KS65K▼	KS66K▼	KS67K▼	KS69K▼	KS601K▼	KS602K▼	167.00	
Spring Return from Right to Center, Operator Only (without contact blocks) ▲														
Without Knob				KS72	KS73	KS74	KS75	KS76	KS77	KS79	KS701	KS702	71.00	
With Knob (select style and color from table 19.168 below)				KS72♦	KS73♦	KS74♦	KS75♦	KS76♦	KS77♦	KS79♦	KS701♦	KS702♦	81.00	
Key Operated with E10 Key (Code 4, 5 or 7 only) ▼				KS72K▼	KS73K▼	KS74K▼	KS75K▼	KS76K▼	KS77K▼	KS79K▼	KS701K▼	KS702K▼	167.00	
Spring Return from Both Sides to Center, Operator Only (without contact blocks) ▲														
Without Knob				KS52	KS53	KS54	KS55	KS56	KS57	KS59	KS501	KS502	71.00	
With Knob (select style and color from table 19.168 below)				KS52♦	KS53♦	KS54♦	KS55♦	KS56♦	KS57♦	KS59♦	KS501♦	KS502♦	81.00	
Key Operated with E10 Key (Code 4, 5 or 7 only) ▼				KS52K▼	KS53K▼	KS54K▼	KS55K▼	KS56K▼	KS57K▼	KS59K▼	KS501K▼	KS502K▼	167.00	
Illuminated Operators														
Manual Return, Operator Only (without contact blocks) ▲				Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	\$ Price
Without Knob, 110-120V 50-60 Hz Transformer				K42J1	K43J1	K44J1	K45J1	K46J1	K47J1	K49J1	K401J1	K402J1	158.00	
With Standard Red Knob, 110-120V 50-60 Hz Transformer				K42J1R	K43J1R	K44J1R	K45J1R	K46J1R	K47J1R	K49J1R	K401J1R	K402J1R	167.00	
With Other Color Knob and other voltage Light Module ■ ♦				K42J1♦	K43J1♦	K44J1♦	K45J1♦	K46J1♦	K47J1♦	K49J1♦	K401J1♦	K402J1♦	158.00	
Spring Return from Left to Center, Operator Only (without contact blocks) ▲														
Without Knob, 110-120V 50-60 Hz Transformer				K62J1	K63J1	K64J1	K65J1	K66J1	K67J1	K69J1	K601J1	K602J1	185.00	
With Standard Red Knob, 110-120V 50-60 Hz Transformer				K62J1R	K63J1R	K64J1R	K65J1R	K66J1R	K67J1R	K69J1R	K601J1R	K602J1R	197.00	
With Other Color Knob and other voltage Light Module ■ ♦				K62J1♦	K63J1♦	K64J1♦	K65J1♦	K66J1♦	K67J1♦	K69J1♦	K601J1♦	K602J1♦	167.00	
Spring Return from Right to Center, Operator Only (without contact blocks) ▲														
Without Knob, 110-120V 50-60 Hz Transformer				K72J1	K73J1	K74J1	K75J1	K76J1	K77J1	K79J1	K701J1	K702J1	185.00	
With Standard Red Knob, 110-120V 50-60 Hz Transformer				K72J1R	K73J1R	K74J1R	K75J1R	K76J1R	K77J1R	K79J1R	K701J1R	K702J1R	197.00	
With Other Color Knob and other voltage Light Module ■ ♦				K72J1♦	K73J1♦	K74J1♦	K75J1♦	K76J1♦	K77J1♦	K79J1♦	K701J1♦	K702J1♦	167.00	
Spring Return from Both Sides to Center, Operator Only (without contact blocks) ▲														
Without Knob, 110-120V 50-60 Hz Transformer				K52J1	K53J1	K54J1	K55J1	K56J1	K57J1	K59J1	K501J1	K502J1	185.00	
With Standard Red Knob, 110-120V 50-60 Hz Transformer				K52J1R	K53J1R	K54J1R	K55J1R	K56J1R	K57J1R	K59J1R	K501J1R	K502J1R	197.00	
With Other Color Knob and other voltage Light Module ■ ♦				K52J1♦	K53J1♦	K54J1♦	K55J1♦	K56J1♦	K57J1♦	K59J1♦	K501J1♦	K502J1♦	167.00	

- ▲ These operators can be ordered complete with contact blocks.00 Add the "H code" from page 19-84 as needed for your application.
- Add the voltage assembly code as chosen from page 19-82. Example: K25J■ with 208Vac = K25J3.
- ♦ Add the knob color code from Table 19.182. For LED, knob color must match LED.
- ★ For other color knobs replace the B with knob color code from Table 19.182.
- ▼ Add the key withdrawal code from table Table 19.183. Example: KS43K▼ with key withdrawal in the right position only = KS43K6.

Table 19.182: Selector Switch Assembly Code and Knob Cat. No.

Color	Standard Knob		Gloved Hand Knob		\$ Price
	◆ Knob Code	Cat. No.	◆ Knob Code	Cat. No.	
Black	B	B11	FB	B25	
Red	R	R8	FR	R24	
Green	G	G8	FG	G24	
Yellow	Y	Y8	FY	Y24	
Blue	L	L8	FL	L24	
White	W	W8	FW	W24	
Amber	A	A8	FA	A24	
Clear	C	C8	FC	C24	

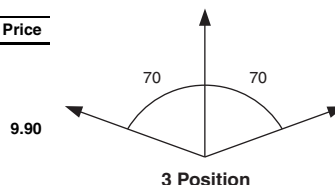


Table 19.183: ▼ Key Withdrawal Codes

Code	Position
4	Left Only
5	Center Only
6	Right Only
7	Left and Center
8	Left and Right
9	Center and Right
10	Left, Center, and Right

NOTE: To select and order Contact Blocks, Light Modules, Knobs, and Accessories, see pages 19-81 through 19-88.

NOTE: To order, add prefix 9001 to the beginning of the catalog number.

Table 19.184: 4-Position Selector Switches

Contact Block Position	Contact Block Required				1—Contact Closed 0—Contact Open	
	Quantity and Type KA1 or KA2 or KA3		Mount on Side KA1 or KA2 or KA3			
<p>Top View</p>	KA1 	or	KA3 	KA1 #2		
			KA2 	or	KA3 #2	
	KA1 	or	KA3 	KA1 #1	KA3 #1	
			KA2 	or	KA2 #1	

Cam (see page 19-69)	H	
Non-Illuminated Operators	Cat. No.	\$ Price
Manual Return ▲, Operator Only (without contact blocks)		
Without Knob	KS88	42.80
With Knob (select style and color from table 19.168 below)	KS88♦	53.00
Key Operated with E10 Key (Codes 11, 12, 13, 14, 15)	KS88K★	138.00
Illuminated Operators	Cat. No.	\$ Price
Manual Return ▲, Operator Only (without contact blocks)		
Without Knob, 110-120V 50-60 Hz Transformer	KS88J1	158.00
With Standard Red Knob, 110-120V 50-60 Hz Transformer	KS88J1R	167.00
With Other Color Knob and other voltage Light Module ■ ♦	KS88J■♦	158.00

- ▲ These operators can be ordered complete with contact blocks. Add the "H code" from page 19-84 as needed for your application.
- Add the voltage assembly code as chosen from page 19-82. Example: K25J■ with 208Vac = K25J3.
- ♦ Add the knob color code from table 19.185. For LED, knob color must match LED.
- ★ Add the key withdrawal code from Table 19.186.

Table 19.185: Selector Switch Assembly Code and Knob Cat. No.

Color	Standard Knob		Gloved Hand Knob		\$ Price
	♦ Knob Code	Cat. No.	♦ Knob Code	Cat. No.	
Black	B	B11	FB	B25	9.90
Red	R	R8	FR	R24	
Green	G	G8	FG	G24	
Yellow	Y	Y8	FY	Y24	
Blue	L	L8	FL	L24	
White	W	W8	FW	W24	
Amber	A	A8	FA	A24	
Clear	C	C8	FC	C24	

Table 19.186: ★ Key Withdrawal Codes

Code	Position
	<p>4 Position</p>
11	1 and 4
12	4 only
13	1 only
14	1, 2, 3 and 4
15	2, 3, and 4

Potentiometers with Dial Plate

Table 19.187: Potentiometers with Dial Plate (not UL listed)—Maximum Voltage 300 Vac

Power	Description	Ratings	Type	\$ Price
2 W	Operator Only, for Single Potentiometer	NEMA 4, 13	K20	201.00
	Operator with Single Potentiometer		K21	287.00
	Operator Only, for Tandem Potentiometer		K22	314.00
	Operator with Tandem Potentiometer		K23	399.00

Table 19.188: Potentiometer Suffixes

Single Potentiometer			
Suffix ▼	Resistance	Suffix ▼	Resistance
01	50 Ω	07	5 kΩ
02	100 Ω	08	10 kΩ
04	500 Ω	09	25 kΩ
05	1 kΩ	13	500 kΩ
39	2 kΩ	37	750 kΩ
06	2.5 kΩ	14	1 MΩ
Tandem Potentiometer			
Suffix ▼	Resistance		
	Front	Rear	
82	1 kΩ	1 kΩ	

▼ For the complete part number, add the suffix from Table 19.188 to the catalog number from Table 19.187. Example: 9001K2105.

Note: Any potentiometer with a shaft 7/8" long and 1/4" diameter may be used with these operators

NOTE: To select and order Contact Blocks, Light Modules, Knobs, and Accessories. See pages 19-81 through 19-88.

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Shown below is a simplified method of selecting a selector switch to meet almost any combination of contact sequences.

Step No. 1

Determine the contact sequence(s) required. Set up a target table like the one shown for the example below.

Contact Sequence				
0—contact open	1—contact closed	↙	↕	↘
A		1	0	0
B		0	1	0
C		0	0	1

Step No. 2

Look for a cam type common to all sequences in Table 19.189, Table 19.190, or Table 19.191. For the example above, Table 19.190 would be used. For the contact sequences A (1 0 0), B (0 1 0) and C (0 0 1) of the example above, cam types F and L are common to all three sequences.

Step No. 3

Next, use the cam type common to all the sequences (if several cam types are common, choose one) to find the operator type number. Go to the proper page number as indicated in the table below:

Number of Positions	Push Button Line	Page Number
2	Type K, Type SK, Type KX	19-66, 19-76, 19-84, 19-91, 19-93
3	Type K, Type SK, Type KX	19-67, 19-77, 19-84, 19-91, 19-93
4	Type K, Type SK, Type KX	19-68, 19-78, 19-93

If for the example above a manual return operator with a standard black knob is required and:

The F cam type is chosen, the operator type number is:

- Type K—Class 9001 Type KS46B (from page 19-67)
- Type SK—Class 9001 Type SKS46B (from page 19-77)
- Type KX—Class 9001 Type KXSDFB (from page 19-93)

The L cam type is chosen, the operator type number is:

- Type K—Class 9001 Type KS401B (from page 19-67)
- Type SK—Class 9001 Type SKS401B (from page 19-77)
- Type KX—Class 9001 Type KXSDLB (from page 19-93)

Step No. 4:

Determine the contact blocks required by using the same table in Step No. 2.

If, for the example above, the F cam type is chosen:

- Use a 9001KA3 mounted on side no. 2 for sequence A (1 0 0).
- Use a 9001KA3 mounted on side no. 1 for sequence B (0 1 0).
- Use a 9001KA2 mounted on side no. 1 or 2 for sequence C (0 0 1).

If, for the example above, the L cam type is chosen:

- Use a 9001KA2 mounted on side no. 2 for sequence A (1 0 0).
- Use a 9001KA2 mounted on side no. 1 or a 9001KA3 mounted on side no. 2 for sequence B (0 1 0).
- Use a 9001KA3 mounted on side no. 1 for sequence C (0 0 1).

One Type KA1 double circuit block can be used in place of one Type KA2 single circuit block plus one Type KA3 single circuit block mounted on the same side.

Table 19.189: 2 Position Selector Switch

If you require contact sequence—		Use Cam Type	Use Contact Block Type	Mount on side no. (See page 19-84)
↙	↘			
1	0	E	KA3	1 or 2
		D	KA2	1 or 2
0	1	E	KA2	1 or 2
		D	KA3	1 or 2

Table 19.190: 3 Position Selector Switch

If you require contact sequence—			Use Cam Type	Use Contact Block Type	Mount on side no. (See page 19-84)
↙	↕	↘			
1	0	0	G	KA2	1
			L	KA2	2
			C E	KA3	1
			B C E F G J	KA3	2
0	1	0	B	KA5▲	2
			D E	KA2	1
			J L	KA2	2
			D E F	KA3	1
0	0	1	L	KA3	2
			C F	KA2	1 or 2
			B D G	KA3	1
			D	KA3	2
1	1	0	B	KA5▲	1
			M	KA2	2
			C F	KA2	1 or 2
			B D G	KA3	1
0	1	1	B	KA2	1
			M	KA3	2
			G J	KA2	2
			G	KA5▲	1
1	0	1	L	KA5▲	2
			M	KA3	1
			J	KA3	1
			D E J L	KA5▲	1
0	1	1	D E	KA5▲	2
			D E	KA5▲	2

Table 19.191: 4 Position Selector Switch

If you require contact sequence—				Use Cam Type	Use Contact Block Type	Mount on side no. (See page 19-84)
↙	↕	↘	↗			
1	0	0	0	H	(A) KA3	2
0	1	0	0	H	(B) KA2	1
0	0	1	0	H	(C) KA2	2
0	0	0	1	H	(D) KA3	1
1	0	0	1	H	A & D Wired in Parallel	
1	1	0	0	H	A & B Wired in Parallel	
0	1	1	0	H	B & C Wired in Parallel	
0	0	1	1	H	C & D Wired in Parallel	
1	1	1	0	H	A, B & C Wired in Parallel	
0	1	1	1	H	B, C & D Wired in Parallel	
1	0	1	0	H	A & C Wired in Parallel	
0	1	0	1	H	B & D Wired in Parallel	
1	1	0	1	H	KA5▲	2
1	0	1	1	H	KA5▲	1

▲ Type KA5 must be the last block on either side. If more than one KA5 is required on either side—contact your local Square D sales office.

Note: For Outline Dimensions see Catalog 9001CT0001

KA1 = KA3 + KA2






When ordering, please specify:

- Quantity
- Class Number
- Type or Catalog Number

For "H" Numberspage 19-84

Table 19.192: Pilot Lights—UL Types 4, 13/NEMA 4 & 13

For use in hazardous locations—See page 19-83.
Legend plates not included.

Description	Voltage	Style	With Red Fresnel Color Cap	With Green Fresnel Color Cap	With Other Color Cap	\$ Price	Without Color Cap	\$ Price
 Standard Pilot Light (Plastic Fresnel Color Cap Shown)	110–120 V, 50–60 Hz 220–240 V, 50–60 Hz 24–28 Vac/Vdc	Transformer Transformer Full Voltage	KP1R31 KP7R31 KP35R31	KP1G31 KP7G31 KP35G31	KP1■ KP7■ KP35■	153. 153. 125.	KP1 KP7 KP35	143. 143. 116.
	For other voltages see page 19-82.	Transformer, Flashing or LED ♦ Full Voltage, Neon or Resistor ★	KP▲R31 KP▲R31	KP▲G31 KP▲G31	KP▲■ KP▲■	153. 125.	KP▲ KP▲	143. 116.
 Push-To-Test Pilot Light (Glass Color Cap Shown)	110–120 V, 50–60 Hz 220–240 V, 50–60 Hz 24–28 Vac/Vdc	Transformer Transformer Full Voltage	KT1R31 KT7R31 KT35R31	KT1G31 KT7G31 KT35G31	KT1■ KT7■ KT35■	197. 197. 167.	KT1 KT7 KT35	185. 185. 158.
	For other voltages see page 19-82.	Transformer, Flashing or LED ♦ Full Voltage, Neon or Resistor ★	KT▲R31 KT▲R31	KT▲G31 KT▲G31	KT▲■ KT▲■	197. 167.	KT▲ KT▲	185. 158.
 Remote Test Pilot Light (Glass Color Cap Shown)	120 Vac Only 24–28 Vac Only for other voltages	Resistor ▼ Full Voltage ▼	KTR38R31 KTR35R31	KTR38G31 KTR35G31	KTR38■ KTR35■	197. 197.	KTR38 KTR35	185. 185.
	See page 19-82.▼	Full Voltage or Resistor ▼	KTR▲R31	KTR▲G31	KTR▲■	197.	KTR▲	185.

▲ Add the voltage assembly code as chosen from Table 19.228 or Table 19.229 on 19-82.

EXAMPLE: **KT▲R31 with 208 Vac red LED = KT37LRR31**

■ Add the color code as chosen from Table 19.193.

EXAMPLE: **KP1■ with a blue fresnel cap = KP1L31**

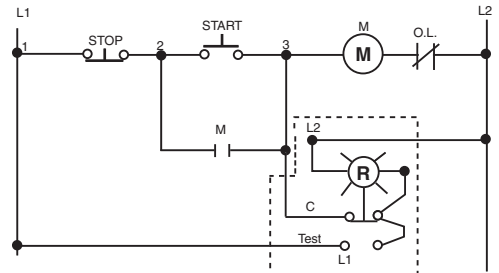
♦ The cap must be the same color as the LED light module chosen, e.g., for green LED, use green color cap.

★ On neon light modules, use clear color caps only.

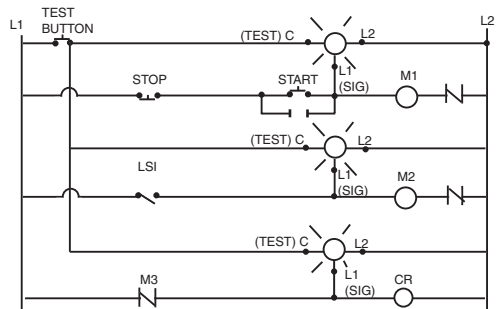
▼ On remote test pilot lights use only full voltage or resistor voltage assembly codes.

Do not choose LED, neon or transformer codes. For AC use only.

Typical Wiring Diagrams



Push-To-Test Pilot Light



Remote Test Pilot Light

Table 19.193: Color Caps




Color	 ■ Plastic Fresnel	 ■ Plastic Domed	 ■ Glass
Amber	A31	A9	A6
Blue	L31	L9	L6
Clear	C31	C9	C6
Green	G31	G9	G6
Red	R31	R9	R6
White	W31	W9	W6
Yellow	Y31	Y9	Y6

Table 19.194: Joy Stick Operators—UL Types 4, 13/NEMA 4, 13 for use in hazardous locations
See page 19-83. Contact blocks and legend plate not included unless noted.



Description			Operator With Contacts	\$ Price	Operator Without Contacts ▲	\$ Price
↕	3 Position—Center Off	Momentary Contact—Spring Return to Center	Without Latch	K71H7	K71 K70 K73 K72	252.
			With Latch	K70H7		
		Maintained Contact	Without Latch	K73H7		
			With Latch	K72H7		
↔	3 Position—Center Off	Momentary Contact—Spring Return to Center	Without Latch	K31H8	K31 K30 K33 K32	252.
			With Latch	K30H8		
		Maintained Contact	Without Latch	K33H8		
			With Latch	K32H8		
⬆	5 Position—Center Off	Momentary Contact—Spring Return to Center	Without Latch	K35H2	K35 K34 K37 K36	309.
			With Latch	K34H2		
		Maintained Contact	Without Latch	K37H2		
			With Latch	K36H2		

▲ These operators can be ordered complete with contact blocks—a total of four (4) contact blocks can be used. Add the "H" number chosen from page 19-84 to the operator type number and add the cost of the "H" number to the operator cost.

Table 19.195: Contact Arrangements

Operator Positions	Contact Block Type	Contact Block Location	Contact	Handle position (with reference to Nib)					
				1 ↑	2 →	OFF	3 ↓	4 ←	
↔	3	KA3	POS 1 (3)	A	—	1	0	—	0
		KA3	POS 2 (4)	A	—	0	0	—	1
↕	3	KA2	POS 1 (3)	B	1	—	0	0	—
		KA2	POS 2 (4)	B	0	—	0	1	—
⬆	5	KA1	POS 1 (3)	A	0	1	0	0	0
				B	1	0	0	0	0
		KA1	POS 2 (4)	A	0	0	0	0	1
				B	0	0	0	1	0

(1) Contact Closed (0) Contact Open

The joy stick operator is ideal for applications where only one circuit is to be energized at one time. The three position joy stick closes one circuit in each Up-Down or Right-Left position with all circuits open in center position. The five position operator closes one circuit in each Up, Down, Left and Right position with all circuits open in center position.

Momentary contact operators are spring return to the center position. Maintained operators remain in position and must be returned manually. Operators with latch cannot be operated until the latch button in center of handle is pressed.

For use in hazardous locations—See page 19-83. Legend plate and contact block not included. **Inserts** are field convertible. For colors not listed, order operator without insert, plus separate color insert from page 19-88. Up to two Type KA contact blocks can be mounted in tandem (total of four blocks). Selector push buttons cannot be illuminated.

Table 19.196: Selector Push Button Operators—UL Types 4, 13/NEMA 4, 13



Contact Block Required		Two Position Operators												\$ Price
Quantity and Type	Mount on Side	0—Contact Open				1—Contact Closed				F—Free D—Depressed				
		Left FD	Right FD	Left FD	Right FD	Left FD	Right FD	Left FD	Right FD	Left FD	Right FD	Left FD	Right FD	
 1 KA1	#2	0 0	1 0	0 0	1 0	0 0	1 1	1 1	1 0	1 0	1 0	0 0	Order Contact Blocks From Pages 19-81 and 19-83.	
		0 1	0 1	0 1	0 0	0 1	0 0	0 0	0 1	0 1	0 1	0 1		
 1 KA1	#1	0 0	1 1	0 0	1 0	1 1	0 0	1 0	1 1	1 1	0 0			
		0 1	0 0	0 1	0 0	0 0	0 1	0 1	0 0	0 0	0 1			
Cam ♦		P	R	S	T	Y								
Color Insert		Type	Type	Type	Type	Type								
Without Insert ■ Black		KQ11	KQ12	KQ13	KQ14	KQ15								
		KQ11B	KQ12B	KQ13B	KQ14B	KQ15B								

■ Order color inserts from page 19-88.
♦ Cams are not interchangeable.

For use in hazardous locations. See page 19-83. Key operated push buttons are used wherever unauthorized use of a push button is discouraged. Examples are locking a Start push button in the extended position or locking a Stop push button in the depressed position. The operator can also be locked in the flush position—holding all contacts open. Up to two Type KA contact blocks can be mounted in tandem (total of four blocks). Legend Plate and Contact Block Not Included ("X" = locked position) ★

Table 19.197: Key Operated Push Button – UL Types 4, 13/NEMA 4, 13



Description	Lockable Positions			Type	\$ Price
	Extended	Flush	Depressed		
Push button operable only with key in lock. Key is removable in locked position only.	X	—	—	KR131 KR132 KR133 KR137	125.
	—	X	—		
	X	—	X		
	—	X	X		
Push button operable with or without key in lock. Push button can be locked with key only. Key removable in both locked or unlocked position.	X	—	—	KR141 KR142 KR143 KR147	
	—	X	—		
	X	X	X		
	—	X	X		
To lock the unit, rotate the key with the button in the extended position. Then, push the button to lock it in the position indicated at right. Key is removable only in this position.	—	X	—	KR152 KR153	
	—	—	X		

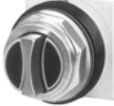

★ All key operated push buttons are furnished as standard with Square D no. E10 key change. See catalog 9001CT0001 for other key changes.

NOTE: When ordering, add prefix 9001 to the catalog number.

Table 19.198: Illuminated and Non-Illuminated Dual Operators

Meets UL Type 13/NEMA 13 and UL Type 6/NEMA 6, which UL and NEMA consider an equivalent to UL Type 4/NEMA 4.

For use in hazardous locations—See page 19-83. Legend plate and contact blocks not included unless otherwise noted.

Image	Description	Color	With 2 N.O. Contacts (2 KA2)	With 1 N.O. & 1 N.C. Contact (KA2, KA3)	\$ Price	Without Contacts ★	\$ Price
	 9001KR7U	Momentary Dual Function	Universal ▲ Green-Red Other ■	KR6UH7 KR6GRH7 KR6■H7	KR6UH37 KR6GRH37 KR6■H37	138.00	KR6U KR6GR KR6■
Momentary Interlocked Dual Function		Universal ▲ Green-Red Other ■	KR67UH7 KR67GRH7 KR67■H7	KR67UH37 KR67GRH37 KR67■H37	184.00	KR67U KR67GR KR67■	125.00
Maintained Interlocked Dual Function		Universal ▲ Green-Red Other ■	KR7UH7 KR7GRH7 KR7■H7	KR7UH37 KR7GRH37 KR7■H37	184.00	KR7U KR7GR KR7■	125.00
Description		Color	Contacts (KA1)		\$ Price	Without Contacts ★	\$ Price
 9001KR11U	Both Buttons Maintained Interlocked Assembly	Universal ◆ Other ★	—		178.00	KR11U KR11★	120.00
	One Button Momentary One Button Maintained Interlocked Assembly	Universal ◆ Other★	—		273.00	KR12U KR12★	162.00

- ▲ Universal for KR6, KR67, KR7 includes 2 inserts each of black, red and green.
- Choose one color for each button. R = red, G = green, B = Black. **Example: A KR6 with left red and right black = KR6RB**
- ◆ Universal for KR11, KR12 includes 2 each of black, red, green, yellow, orange, blue, white.
- ★ Choose one color for each button from table and insert color code in type number. **Example: A KR11 with top button gray and bottom button orange = KR11ES**



Emergency Break-Glass Operator 9001K15

Table 19.199: Emergency Break-Glass Operator—UL 4, 13/NEMA 4, 13▼

Type	\$ Price
K15	125.00

Operator is held in a depressed position by a glass disc. When the glass disc is broken with the hammer, button returns to a normal extended position. Package of 5 discs included with operator.

▼ For enclosed versions see page 19-98.

Table 19.200: 9001K15 Replacement Parts

Description	Part Number	\$ Price
Yellow bumper	3105211101	14.30
Hammer and chain	3105206750	57.30
Lower ring nut	6512232801	16.70
Top ring nut	9001K40	4.40
Package of 5 replacement discs	9001K57	16.70
Clip to hold hammer	2540902240	2.60



Rocker Arm Operating Lever 9001K50

Table 19.201: Rocker Arm Operating Lever

Type	\$ Price
K50	77.00

Allows two standard push buttons to be operated independently of each other. Price does not include push buttons or legend plates. Order push buttons and legend plates from pages 19-63, 19-85, and 19-86—specify which marking is to be inverted.





Push-on Push-off Module 9001K85

Table 19.202: Alternate Action—Push-on, Push-off Module

Type	\$ Price
K85	42.80

This module can be added to standard 9001 Type K, KX, SK or T momentary push button operators. Contact blocks mounted behind this module (maximum of 2) are held in the depressed position when the operator is pressed once, and released to their normal position when the operator is pressed again. For a N.C. circuit, use a 9001KA3 or the N.C. contact of either a 9001KA1 or 9001KA4. For a N.O. circuit, use the N.O. contact of either a 9001KA4 or 9001KA6.

Table 19.203: Off Delay Push Button—UL Types 4, 13/NEMA 4, 13

Description	Type (All Colors)			\$ Price
	Full Guard	Extended Guard	No Guard	
 Timed Contact 1 N.O. and 1 N.C.	KRD1UH1	KRD2UH1	KRD3UH1	277.00
 Timed Contact 2 N.O. and 2 N.C.	KRD1UH2	KRD2UH2	KRD3UH2	514.00

Timing period is adjustable from 0.1 second to 60 seconds and begins after button has been released. Devices include a pack of seven color inserts for color coding the push button. See 19-88 for Universal color insert. Contacts are quick make-quick break.

Note: When mounted in top or bottom hole of a Type K enclosure, device requires one additional space below or above operator. When mounted other than in top or bottom hole, device may require two additional spaces, one above and one below operator. Closing plates must be installed on unused holes.



Table 19.204: Wobble Stick
For easy operation of any standard push button.

Type	\$ Price
K8	42.80

NOTE: To order, add prefix 9001 to the catalog number.



Time Delay Push Button 9001KRD

Table 19.205: Non-Illuminated Momentary Push Button Operators—UL Types 4, 4X, 13/NEMA 4, 4X, 13
For use in hazardous locations—See page 19-83.
Contact blocks and legend plate not included unless otherwise noted.






Description	Color	Operator with 1 N.O. and 1 N.C. Contact (KA1)	\$ Price	Operator with 1 N.O. Contact (KA2)	Operator with 1 N.C. Contact (KA3)	\$ Price	Operator Only No Contacts ▼	\$ Price	
 9001SKR1B Full Guard	Black	SKR1BH13	89.00	SKR1BH5	SKR1BH6	66.00	SKR1B	38.60	
	Red	SKR1RH13	89.00	SKR1RH5	SKR1RH6	66.00	SKR1R	38.60	
	Green	SKR1GH13	89.00	SKR1GH5	SKR1GH6	66.00	SKR1G	38.60	
	Universal ▲	SKR1UH13	89.00	SKR1UH5	SKR1UH6	66.00	SKR1U	38.60	
	Other ■	SKR1■H13	89.00	SKR1■H5	SKR1■H6	66.00	SKR1■	38.60	
 9001SKR3B No Guard	Black	SKR3BH13	89.00	SKR3BH5	SKR3BH6	66.00	SKR3B	38.60	
	Red	SKR3RH13	89.00	SKR3RH5	SKR3RH6	66.00	SKR3R	38.60	
	Green	SKR3GH13	89.00	SKR3GH5	SKR3GH6	66.00	SKR3G	38.60	
	Universal ▲	SKR3UH13	89.00	SKR3UH5	SKR3UH6	66.00	SKR3U	38.60	
	Other ■	SKR3■H13	89.00	SKR3■H5	SKR3■H6	66.00	SKR3■	38.60	
 9001SKR2B Extended Guard	Black	SKR2BH13	89.00	SKR2BH5	SKR2BH6	66.00	SKR2B	38.60	
	Red	SKR2RH13	89.00	SKR2RH5	SKR2RH6	66.00	SKR2R	38.60	
	Green	SKR2GH13	89.00	SKR2GH5	SKR2GH6	66.00	SKR2G	38.60	
	Universal ▲	SKR2UH13	89.00	SKR2UH5	SKR2UH6	66.00	SKR2U	38.60	
	Other ■	SKR2■	89.00	SKR2■H5	SKR2■H6	66.00	SKR2■	38.60	
 9001SKR4B 1-3/8 in. (35 mm) Mushroom Button	Snap-In Mushroom Button								
	Black	SKR4BH13	138.00	SKR4BH5	SKR4BH6	112.00	SKR4B	81.00	
	Red	SKR4RH13	138.00	SKR4RH5	SKR4RH6	112.00	SKR4R	81.00	
	Red ♦	SKR4R05H13	142.00	SKR4R05H5	SKR4R05H6	119.00	SKR4R05	86.00	
	Green	SKR4GH13	138.00	SKR4GH5	SKR4GH6	112.00	SKR4G	81.00	
Other ★	SKR4★H13	138.00	SKR4★H5	SKR4★H6	112.00	SKR4★	81.00		
Screw-On Mushroom Button with Set Screw Security									
Black	SKR24BH13	138.00	SKR24BH5	SKR24BH6	112.00	SKR24B	81.00		
Red	SKR24RH13	138.00	SKR24RH5	SKR24RH6	112.00	SKR24R	81.00		
Green	SKR24GH13	138.00	SKR24GH5	SKR24GH6	112.00	SKR24G	81.00		
Other ★	SKR24★H13	138.00	SKR24★H5	SKR24★H6	112.00	SKR24★	81.00		
 9001SKR5 2-1/4 in. (57 mm) Mushroom Button	Snap-In Mushroom Button								
	Black	SKR5BH13	138.00	SKR5BH5	SKR5BH6	112.00	SKR5B	81.00	
	Red	SKR5RH13	138.00	SKR5RH5	SKR5RH6	112.00	SKR5R	81.00	
	Red ♦	SKR5R05H13	142.00	SKR5R05H5	SKR5R05H6	119.00	SKR5R05	86.00	
	Green	SKR5GH13	138.00	SKR5GH5	SKR5GH6	112.00	SKR5G	81.00	
Other ★	SKR5★H13	138.00	SKR5★H5	SKR5★H6	112.00	SKR5★	81.00		
Screw-On Mushroom Button with Set Screw Security									
Black	SKR25BH13	138.00	SKR25BH5	SKR25BH6	112.00	SKR25B	81.00		
Red	SKR25RH13	138.00	SKR25RH5	SKR25RH6	112.00	SKR25R	81.00		
Green	SKR25GH13	138.00	SKR25GH5	SKR25GH6	112.00	SKR25G	81.00		
Other ★	SKR25★H13	138.00	SKR25★H5	SKR25★H6	112.00	SKR25★	81.00		


Table 19.206: Color Codes


Color	■ SKR1, 2, 3 Place Color Code in Type Number	★ SKR4, 5, 24, 25 Place Color Code in Type Number
Blue	L	L
Yellow	Y	Y
White	W	—
Orange	S	S
Gray	E	—


- ▲ The universal push button operators include one each of the following color inserts: black, red, green, yellow, orange, blue and white.
- See Table 19.206.
- ♦ Knob has the words "Emergency Stop" in raised letters highlighted in white for readability.
- ★ See Table 19.206.
- ▼ These operators can be ordered complete with contact blocks. For maximum block usage, see page 19-84. Add the "H" number chosen from page 19-84 to the end of the operator type number and add the cost of the "H" number to the operator cost.

NOTE: When ordering, add prefix **9001** to the catalog number.
To select and order contact blocks, light modules, and accessories, see pages 19-81 through 19-88.

Table 19.207: 30 mm Multifunction Operators — UL Types 4, 4X, 13/NEMA 4, 4X, 13

Non-Illuminated Push-Pull Screw-on Mushroom Operators							
Description	Color	With 2 N.C. Contacts (1 KA3, 1 KA5)	With 1 N.O./1 N.C. Contact (1 KA1)	\$ Price	Without Contacts ◊	\$Price	
3 Position							
 <p>9001SKR9R Non-Illuminated 1-5/8 in. Diameter Knob Includes Type KN179WP Legend Plate Marked Pull To Start Push To Stop</p>	Momentary Pull-Maintained Neutral-Momentary Push ▽	Red	SKR8RH25	—	142.	SKR8R	86.
		Green	SKR8GH25	—		SKR8G	
		Other □	SKR8□H25	—		SKR8□	
2 Position△							
<p>Maintained Pull-Maintained Push</p>	Red	—	SKR9RH13	188.	SKR9R	129.	
	Green	—	SKR9GH13		SKR9G		
	Other □	—	SKR9□H13		SKR9□		

Non-Illuminated Turn-to-Release Mushroom Operators								
Description	Color	With 1 N.O. Contact (KA1)	\$ Price	With 2 N.O./2 N.C. Contacts (2 KA1)	\$ Price	Without Contacts	\$Price	
 <p>9001SKR16H2</p>	2 Position Turn-to-Release Trigger Action	Red	SKR16H13	172.	SKR16H2	218.	SKR16	113.

Illuminated Push-Pull Mushroom Operators							
Illuminated	Description	Voltage	With Red Knob and 2 N.C. Contacts (1 KA3, 1 KA5)	With Other Color Knob and 2 N.C. Contacts	\$ Price	With Other Color Knob Without Contacts ◊	\$ Price
3 POSITION							
 <p>9001SKR9P1 Illuminated 1-5/8 in. Diameter Knob Includes Type KN179WP Legend Plate Marked Pull to Start Push To Stop</p>	Momentary Pull-Maintained Neutral-Momentary Push ◊	110–120 V, 50–60 Hz	SKR8P1RH25	SKR8P1□H25	267.	SKR8P1□	201.
		Other—Transformer, LED, Flashing ☆	SKR8P◊RH25	SKR8P◊□H25		SKR8P◊□	
		Other—Full Voltage, Resistor, Neon ▽	SKR8P◊RH25	SKR8P◊□H25	215.	SKR8P◊□	171.
2 POSITION							
<p>Maintained Pull-Maintained Push</p>		110–120 V, 50–60 Hz	SKR9P1RH13	SKR9P1□H13	316.	SKR9P1□	243.
		Other—Transformer, L.E.D., Flashing ☆	SKR9P◊RH13	SKR9P◊□H13		SKR9P◊□	
		Other—Full Voltage, Resistor, Neon ▽	SKR9P◊RH13	SKR9P◊□H13	257.	SKR9P◊□	215.

- △ To obtain a red knob with "Push Emergency Stop" printed on the red knob—substitute R05 in place of "R" and add \$2.10 to the price.
- Choose one color from Table 19.208 and insert the color code in the Type number. **Example: SKR9□ with a yellow knob = SKR9Y**
- ◊ Add the voltage assembly code as chosen from page 19-82. **Example: SKR8P◊ with 277 V 50-60 Hz = SKR8P8**
- ☆ The knob must be the same color as the LED light module chosen; e.g., for green LED, use green knob.
- ▽ On neon light modules, use clear knobs only.
- ◉ These operators can be ordered complete with contact blocks. For maximum block usage, see page 19-84. Add the "H" number chosen from page 19-84 to the end of the operator type number and add the cost of the "H" number to the operator cost.
- * SKR11UH1 has 1 KA1(1 N.O., 1 N.C.) and SKR12UH1H1 has 2 KA1 (2 N.O., 2 N.C.).
- ◊ For positions, refer to Tables 19.209 and 19.210.

Table 19.208: Color Codes

Color	SKR11, SKR12	SKR8, SKR9
Black ◊	B	B
Red	R	R
Green	G	G
Blue	L	L
Yellow	Y	Y
White	W	W
Orange ◊	S	S
Clear	—	C
Amber	—	A
Gray	E	—

◊ These colors are not available on illuminated push-pull operators.

Table 19.209: Positions for 9001SKR8RH1 or H13

(KA1)	9001SKR8RH1 or H13		
	PULL	CTR	PUSH
	KA3	X	O
KA2	O	O	X

Table 19.210: Positions for 9001SKR8H25





	9001SKR8H25		
	PULL	CTR	PUSH
KA3	X	O	O
KA5	X	X	O
KA2	O	O	X

NOTE: When ordering, add prefix **9001** to the catalog number.

To select and order contact blocks, light modules, and accessories, see pages 19-81 through 19-88.

Table 19.211: Illuminated Push Button Operators—UL Types 4, 4X, 13/NEMA 4, 4X, 13

For use in hazardous locations—See page 19-83. Legend plate not included unless otherwise noted.

Description	Voltage and Frequency	Style	With Red Color Cap and 1 N.O. and 1 N.C. Contact (KA1)	With Green Color Cap and 1 N.O. and 1 N.C. Contact (KA1)	\$ Price □	With Other Color Cap Without Contact Blocks ▲	\$ Price ◇
 9001SK1L1 Full Guard Illuminated Push Button	110–120 V, 50–60 Hz	Transformer	SK1L1RH13	SK1L1GH13	231.	SK1L1	158.
	220–240 V, 50–60 Hz	Transformer	SK1L7RH13	SK1L7GH13	231.	SK1L7	158.
	24–28 Vac/Vdc	Full Voltage	SK1L35RH13	SK1L35GH13	198.	SK1L35	129.
	For other voltages See Table ■	Transformer, Flashing	SK1L■RH13	SK1L■GH13	231.	SK1L ■	158.
		Full Voltage	SK1L■RH13	SK1L■GH13	198.	SK1L ■	129.
		Resistor, Neon ◆	SK1L■RH13	SK1L■GH13	198.	SK1L ■	129.
		LED ▼	SK1L■RH13	SK1L■GH13	231.	SK1L ■★	158.
 9001SK2L1 No Guard Illuminated Push Button	110–120 V, 50–60 Hz	Transformer	SK2L1RH13	SK2L1GH13	217.	SK2L1	143.
	220–240 V, 50–60 Hz	Transformer	SK2L7RH13	SK2L7GH13	217.	SK2L7	143.
	24–28 Vac/Vdc	Full Voltage	SK2L35RH13	SK2L35GH13	184.	SK2L35	116.
	For other voltages See Table ■	Transformer, Flashing	SK2L■RH13	SK2L■GH13	217.	SK2L ■	143.
		Full Voltage	SK2L■RH13	SK2L■GH13	184.	SK2L ■	116.
		Resistor, Neon ◆	SK2L■RH13	SK2L■GH13	184.	SK2L ■	116.
		LED ▼	SK2L■RH13	SK2L■GH13	217.	SK2L ■★	143.
 9001SK2L1R20 1-3/8 in. (35 mm) Illuminated Mushroom	110–120 V, 50–60 Hz	Transformer	SK2L1R20H13	SK2L1G20H13	217.	Order SK2L ■★△	
	220–240 V, 50–60 Hz	Transformer	SK2L7R20H13	SK2L7G20H13	217.		
	24–28 Vac/Vdc	Full Voltage	SK2L35R20H13	SK2L35G20H13	184.		
	For other voltages See Table ■	Transformer, Flashing	SK2L■R20H13	SK2L■G20H13	217.		
		Full Voltage	SK2L■R20H13	SK2L■G20H13	184.		
		Resistor, Neon ◆	SK2L■R20H13	SK2L■G20H13	184.		
		LED ▼	SK2L■R20H13	SK2L■G20H13	217.		
 9001SK2L1R21 2-1/4 in. (57 mm) Illuminated Mushroom	110–120 V, 50–60 Hz	Transformer	SK2L1R21H13	SK2L1G21H13	217.	Order SK2L ■★△	
	220–240 V, 50–60 Hz	Transformer	SK2L7R21H13	SK2L7G21H13	217.		
	24–28 Vac/Vdc	Full Voltage	SK2L35R21H13	SK2L35G21H13	184.		
	For other voltages See Table ■	Transformer, Flashing	SK2L■R21H13	SK2L■G21H13	217.		
		Full Voltage	SK2L■R21H13	SK2L■G21H13	184.		
		Resistor, Neon ◆	SK2L■R21H13	SK2L■G21H13	184.		
		LED ▼	SK2L■R21H13	SK2L■G21H13	217.		

- ▲ These operators can be ordered complete with contact blocks. For maximum block usage, see page 19-84. Add the "H" number chosen from page 19-84 to the end of the operator type number and add the cost of the "H" number to the operator cost.
- Add the voltage assembly code as chosen from page 19-82. **EXAMPLE: SK2L■ with 240 Vac/Vdc = SK2L25.**
- ◆ On neon light modules, use clear color caps only.
- ★ The cap must be the same color as the LED light module chosen e.g., for red LED, use red color cap.
- ▼ Add the color code as chosen from the color cap table below. **EXAMPLE: SK2L25▼ with a blue 1-3/8 in. mushroom button = SK2L25L20.**
- △ The only difference between a no guard (SK2L) operator and mushroom button operator is the color cap.
- Price includes operator, light module, contact blocks and color cap.
- ◇ Price includes operator, light module and color cap.

Table 19.212: Color Caps

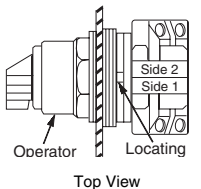
Color	Color Codes		
	SK1L/SK2L	1-3/8 in. (35 mm) Mushroom	2-1/4 in. (57 mm) Mushroom
Red	R	R20	R21
Green	G	G20	G21
Blue	L	L20	L21
Yellow	Y	Y20	Y21
White	W	W20	W21
Clear	C	C20	C21
Amber	A	A20	A21

NOTE: When ordering, add prefix **9001** to the catalog number.

To select and order contact blocks, light modules, and accessories, see pages 19-81 through 19-88.

NOTE: To order, add prefix 9001 to the beginning of the catalog number.

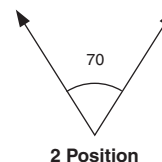
Table 19.213: 2-Position Selector Switches

Contact Block Position	Contact Block Required				1—Contact Closed 0—Contact Open					
	Quantity and Type KA1 or KA2 or KA3		Mount on Side KA1 or KA2 or KA3		Left	Right	Left	Right		
 <p>Top View</p>	KA1 ○ ○	or	KA3 ○ ○	KA1 #2	or	KA3 #2	1	0	0	1
			KA2 ○ ○			KA2 #2	0	1	1	0
	KA1 ○ ○	or	KA3 ○ ○	KA1 #1	or	KA3 #1	1	0	0	1
			KA2 ○ ○			KA2 #1	0	1	1	0
Cam (see page 19-69)					E		D			
Non-Illuminated Operators					Type		Type		\$ Price	
Manual Return ▲, Operator Only (without contact blocks)										
Without Knob					SKS11		SKS12		42.80	
With Knob (select style and color from Table 19.166 below)					SKS11◆		SKS12◆		53.00	
Operator with Contact Blocks and Standard black knob										
With 1 KA1 on Side #2					SKS11BH13		—		106.00	
With 1 KA1 on Side #1					SKS11BH1		—		106.00	
With 1 KA1 on Side #1 and 1 KA1 on side #2					SKS11BH2		—		152.00	
Spring Return from Left ▲, Operator Only (without contact blocks)										
Without Knob					SKS25		—		71.00	
With Knob (select style and color from Table 19.166 below)					SKS25◆		—		81.00	
Spring Return from Right ▲, Operator Only (without contact blocks)										
Without Knob					—		SKS34		71.00	
With Knob (select style and color from Table 19.166 below)					—		SKS34◆		81.00	
Illuminated Operators					Type		Type		\$ Price	
Manual Return ▲, Operator Only (without contact blocks)										
Without Knob, 110-120V 50-60 Hz Transformer					SK11J1		SK12J1		158.00	
With Standard Red Knob, 110-120V 50-60 Hz Transformer					SK11J1R		SK12J1R		167.00	
With Other Color Knob and other voltage Light Module ■ ◆					SK11J◆		SK12J◆		167.00	
Spring Return from Left ▲, Operator Only (without contact blocks)										
Without Knob, 110-120V 50-60 Hz Transformer					SK25J1		—		185.00	
With Standard Red Knob, 110-120V 50-60 Hz Transformer					SK25J1R		—		197.00	
With Other Color Knob and other voltage Light Module ■ ◆					SK25J◆		—		197.00	
Spring Return from Right ▲, Operator Only (without contact blocks)										
Without Knob, 110-120V 50-60 Hz Transformer					—		SK34J1		185.00	
With Standard Red Knob, 110-120V 50-60 Hz Transformer					—		SK34J1R		197.00	
With Other Color Knob and other voltage Light Module ■ ◆					—		SK34J◆		197.00	

- ▲ These operators can be ordered complete with contact blocks. Add the "H code" from page 19-84 as needed for your application.
- Add the voltage assembly code as chosen from page 19-82. Example: K25J■ with 208Vac = K25J3
- ◆ Add the knob color code from Table 19.214. For LED, knob color must match LED.

Table 19.214: Selector Switch Assembly Code and Knob Cat. No.

Color	Standard Knob		Gloved Hand Knob		\$ Price
	◆ Knob Code	Cat. No.	◆ Knob Code	Cat. No.	
Black	B	B11	FB	B25	9.90
Red	R	R8	FR	R24	
Green	G	G8	FG	G24	
Yellow	Y	Y8	FY	Y24	
Blue	L	L8	FL	L24	
White	W	W8	FW	W24	
Amber	A	A8	FA	A24	
Clear	C	C8	FC	C24	



NOTE: To select and order Contact Blocks, Light Modules, Knobs, and Accessories. See pages 19-81 through 19-88.

NOTE: To order, add prefix 9001 to the beginning of the catalog number.

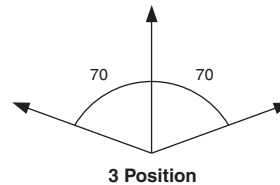
Table 19.215: 3-Position Selector Switches

CONTACT BLOCK REQUIRED				1 — Contact Closed 0 — Contact Open										
Contact Block Position	Quantity and Type		Mount on Side	Center	Center	Center	Center	Center	Center	Center	Center	Center	Center	
	KA1	KA2		↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
<p>Top View</p>	KA1	KA3	KA1 #2	KA3 #2	1 0 0	1 0 0	0 0 1	1 0 0	1 0 0	1 0 0	1 0 0	1 0 0	0 1 0	1 1 0
		KA2		KA2 #2	0 1 1	0 0 1	0 1 0	0 1 0	0 0 1	0 1 1	0 1 1	1 0 0	0 0 1	
	KA1	KA3	KA1 #1	KA3 #1	0 0 1	1 0 0	0 0 1	1 0 0	0 1 0	0 0 1	1 0 1	0 0 1	0 1 1	0 1 1
		KA2		KA2 #1	1 1 0	0 0 1	0 1 0	0 1 0	0 0 1	1 0 0	0 1 0	0 1 0	0 1 0	1 0 0
Cam (see page 19-69)				B	C	D	E	F	G	J	L	M		
Non-Illuminated Operators				Type	Type	Type	Type	Type	Type	Type	Type	Type	Type	\$ Price
Manual Return, Operator Only (without contact blocks) ▲														
Without Knob				SKS42	SKS43	SKS44	SKS45	SKS46	SKS47	SKS49	SKS401	SKS402	42.80	
With Knob (select style and color from table 19.168 below)				SKS42♦	SKS43♦	SKS44♦	SKS45♦	SKS46♦	SKS47♦	SKS49♦	SKS401♦	SKS402♦	53.00	
Operator with Contact Blocks and Standard black knob ★														
With 1 KA1 on Side #2 (H13)				SKS42BH13	SKS43BH13	SKS44BH13	SKS45BH13	SKS46BH13	SKS47BH13	SKS49BH13	SKS401BH13	SKS402BH13	106.00	
With 1 KA1 on Side #1 (H1)				SKS42BH1	SKS43BH1	SKS44BH1	SKS45BH1	SKS46BH1	SKS47BH1	SKS49BH1	SKS401BH1	SKS402BH1	106.00	
With 1 KA1 on Side #1 and 1 KA1 on side #2 (H2)				SKS42BH2	SKS43BH2	SKS44BH2	SKS45BH2	SKS46BH2	SKS47BH2	SKS49BH2	SKS401BH2	SKS402BH2	152.00	
Spring Return from Left to Center, Operator Only (without contact blocks) ▲														
Without Knob				SKS62	SKS63	SKS64	SKS65	SKS66	SKS67	SKS69	SKS601	SKS602	71.00	
With Knob (select style and color from table 19.168 below)				SKS62♦	SKS63♦	SKS64♦	SKS65♦	SKS66♦	SKS67♦	SKS69♦	SKS601♦	SKS602♦	81.00	
Spring Return from Right to Center, Operator Only (without contact blocks) ▲														
Without Knob				SKS72	SKS73	SKS74	SKS75	SKS76	SKS77	SKS79	SKS701	SKS702	71.00	
With Knob (select style and color from table 19.168 below)				SKS72♦	SKS73♦	SKS74♦	SKS75♦	SKS76♦	SKS77♦	SKS79♦	SKS701♦	SKS702♦	81.00	
Spring Return from Both Sides to Center, Operator Only (without contact blocks) ▲														
Without Knob				SKS52	SKS53	SKS54	SKS55	SKS56	SKS57	SKS59	SKS501	SKS502	71.00	
With Knob (select style and color from table 19.168 below)				SKS52♦	SKS53♦	SKS54♦	SKS55♦	SKS56♦	SKS57♦	SKS59♦	SKS501♦	SKS502♦	81.00	
Illuminated Operators				Type	Type	Type	Type	Type	Type	Type	Type	Type	\$ Price	
Manual Return, Operator Only (without contact blocks) ▲														
Without Knob, 110-120V 50-60 Hz Transformer				SK42J1	SK43J1	SK44J1	SK45J1	SK46J1	SK47J1	SK49J1	SK401J1	SK402J1	158.00	
With Standard Red Knob, 110-120V 50-60 Hz Transformer				SK42J1R	SK43J1R	SK44J1R	SK45J1R	SK46J1R	SK47J1R	SK49J1R	SK401J1R	SK402J1R	167.00	
With Other Color Knob and other voltage Light Module ■ ♦				SK42J■♦	SK43J■♦	SK44J■♦	SK45J■♦	SK46J■♦	SK47J■♦	SK49J■♦	SK401J■♦	SK402J■♦	167.00	
Spring Return from Left to Center, Operator Only (without contact blocks) ▲														
Without Knob, 110-120V 50-60 Hz Transformer				SK62J1	SK63J1	SK64J1	SK65J1	SK66J1	SK67J1	SK69J1	SK601J1	SK602J1	185.00	
With Standard Red Knob, 110-120V 50-60 Hz Transformer				SK62J1R	SK63J1R	SK64J1R	SK65J1R	SK66J1R	SK67J1R	SK69J1R	SK601J1R	SK602J1R	197.00	
With Other Color Knob and other voltage Light Module ■ ♦				SK62J■♦	SK63J■♦	SK64J■♦	SK65J■♦	SK66J■♦	SK67J■♦	SK69J■♦	SK601J■♦	SK602J■♦	197.00	
Spring Return from Right to Center, Operator Only (without contact blocks) ▲														
Without Knob, 110-120V 50-60 Hz Transformer				SK72J1	SK73J1	SK74J1	SK75J1	SK76J1	SK77J1	SK79J1	SK701J1	SK702J1	185.00	
With Standard Red Knob, 110-120V 50-60 Hz Transformer				SK72J1R	SK73J1R	SK74J1R	SK75J1R	SK76J1R	SK77J1R	SK79J1R	SK701J1R	SK702J1R	197.00	
With Other Color Knob and other voltage Light Module ■ ♦				SK72J■♦	SK73J■♦	SK74J■♦	SK75J■♦	SK76J■♦	SK77J■♦	SK79J■♦	SK701J■♦	SK702J■♦	197.00	
Spring Return from Both Sides to Center, Operator Only (without contact blocks) ▲														
Without Knob, 110-120V 50-60 Hz Transformer				SK52J1	SK53J1	SK54J1	SK55J1	SK56J1	SK57J1	SK59J1	SK501J1	SK502J1	185.00	
With Standard Red Knob, 110-120V 50-60 Hz Transformer				SK52J1R	SK53J1R	SK54J1R	SK55J1R	SK56J1R	SK57J1R	SK59J1R	SK501J1R	SK502J1R	197.00	
With Other Color Knob and other voltage Light Module ■ ♦				SK52J■♦	SK53J■♦	SK54J■♦	SK55J■♦	SK56J■♦	SK57J■♦	SK59J■♦	SK501J■♦	SK502J■♦	197.00	

- ▲ These operators can be ordered complete with contact blocks. Add the "H code" from page 19-84 as needed for your application.
- Add the voltage assembly code as chosen from page 19-82. Example: K25J■ with 208Vac = K25J3.
- ♦ Add the knob color code from Table 19.216. For LED, knob color must match LED.
- ★ For other color knobs replace the B with knob color code from Table 19.216.

Table 19.216: Selector Switch Assembly Code and Knob Cat. No.

Color	Standard Knob		Gloved Hand Knob		\$ Price
	♦ Knob Code	Cat. No.	♦ Knob Code	Cat. No.	
Black	B	B11	FB	B25	9.90
Red	R	R8	FR	R24	
Green	G	G8	FG	G24	
Yellow	Y	Y8	FY	Y24	
Blue	L	L8	FL	L24	
White	W	W8	FW	W24	
Amber	A	A8	FA	A24	
Clear	C	C8	FC	C24	



NOTE: To select and order Contact Blocks, Light Modules, Knobs, and Accessories. See pages 19-81 through 19-88.

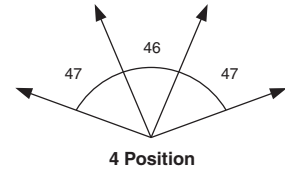
NOTE: To order, add prefix 9001 to the beginning of the catalog number.

Table 19.217: 4-Position Selector Switches

CONTACT BLOCK REQUIRED				1 — Contact Closed 0 — Contact Open						
Contact Block Position	Quantity and Type		Mount on Side		↙	↘	↗	↖		
<p>Top View</p>	KA1 	or	KA3 	KA1 #2	or	KA3 #2	1	0	0	0
			KA2 			KA2 #2	0	0	1	0
	KA1 	or	KA3 	KA1 #1	or	KA3 #1	0	0	0	1
			KA2 			KA2 #1	0	1	0	0
Cam (see page 19-69)						H				
Non-Illuminated Operators						Type		\$ Price		
Manual Return ▲, Operator Only (without contact blocks)										
Without Knob						SKS88		42.80		
With Knob (select style and color from table 19.168 below)						SKS88◆		52.65		
Illuminated Operators						Type		\$ Price		
Manual Return ▲, Operator Only (without contact blocks)										
Without Knob, 110-120V 50-60 Hz Transformer						SK88J1		158.00		
With Standard Red Knob, 110-120V 50-60 Hz Transformer						SK88J1R		167.00		
With Other Color Knob and other voltage Light Module ■◆						SK88J■◆		167.00		

- ▲ These operators can be ordered complete with contact blocks. Add the "H code" from page 19-84 as needed for your application.
- Add the voltage assembly code as chosen from page 19-82. Example: K25J■ with 208Vac = K25J3
- ◆ Add the knob color code from Table 19.218. For LED, knob color must match LED

Color	Standard Knob		Gloved Hand Knob		\$ Price
	◆ Knob Code	Cat. No.	◆ Knob Code	Cat. No.	
Black	B	B11	FB	B25	9.90
Red	R	R8	FR	R24	
Green	G	G8	FG	G24	
Yellow	Y	Y8	FY	Y24	
Blue	L	L8	FL	L24	
White	W	W8	FW	W24	
Amber	A	A8	FA	A24	
Clear	C	C8	FC	C24	



Potentiometers with Dial Plate

Table 19.218: Potentiometers with Dial Plate (not UL listed)—Maximum Voltage 300 Vac

Power	Description	Ratings	Type	\$ Price
2 W	Operator Only, for Single Potentiometer	NEMA 4, 13	SK20	201.00
	Operator with Single Potentiometer		SK21	287.00
	Operator Only, for Tandem Potentiometer		SK22	314.00
	Operator with Tandem Potentiometer		SK23	399.00

Table 19.219: Potentiometer Suffixes




Single Potentiometer			
Suffix ★	Resistance	Suffix ★	Resistance
01	50 Ω	07	5 kΩ
02	100 Ω	08	10 kΩ
04	500 Ω	09	25 kΩ
05	1 kΩ	13	500 kΩ
39	2 kΩ	37	750 kΩ
06	2.5 kΩ	14	1 MΩ
Tandem Potentiometer			
Suffix ★	Resistance		
	Front	Rear	
82	1 kΩ	1 kΩ	

★ For the complete part number, add the suffix from Table 19.219 to the catalog number from Table 19.218. Example: 9001K2105.

Note: Any potentiometer with a shaft 7/8 in. long and 1/4 in. diameter may be used with these operators

NOTE: To select and order Contact Blocks, Light Modules, Knobs, and Accessories. See pages 19-81 through 19-88.

Table 19.220: Pilot Lights—UL Types 4, 4X, 13/NEMA 4, 4X, 13
For use in hazardous locations—See page 19-83. Legend plate not included.

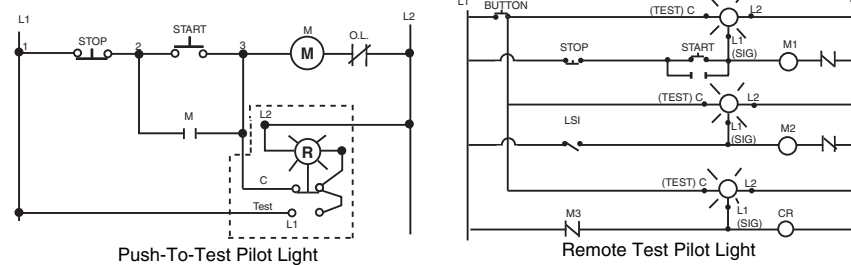
Description	Voltage	Style	With Red Fresnel Color Cap	With Green Fresnel Color Cap	With Other Color Cap	\$ Price	Without Color Cap	\$ Price
 9001SKP1	110–120 V, 50–60 Hz	Transformer	SKP1R31	SKP1G31	SKP1■	153.	SKP1	143.
	220–240 V, 50–60 Hz	Transformer	SKP7R31	SKP7G31	SKP7■	153.	SKP7	143.
	24–28 Vac/Vdc	Full Voltage	SKP35R31	SKP35G31	SKP35■	125.	SKP35	116.
	For other voltages see Table ▲	Transformer, Flashing or LED♦ Full Voltage, Neon or Resistor★	SKP▲R31 SKP▲R31	SKP▲G31 SKP▲G31	SKP▲■ SKP▲■	125. 125.	SKP▲ SKP▲	116. 116.
 9001SKT1	110–120 V, 50–60 Hz	Transformer	SKT1R31	SKT1G31	SKT1■	197.	SKT1	185.
	220–240 V, 50–60 Hz	Transformer	SKT7R31	SKT7G31	SKT7■	197.	SKT7	185.
	24–28 Vac/Vdc	Full Voltage	SKT35R31	SKT35G31	SKT35■	167.	SKT35	158.
	For other voltages see Table ▲	Transformer, Flashing or LED♦ Full Voltage, Neon or Resistor★	SKT▲R31 SKT▲R31	SKT▲G31 SKT▲G31	SKT▲■ SKT▲■	197. 197.	SKT▲ SKT▲	158. 158.
 9001SKTR38	120 Vac Only	Resistor	SKTR38R31	SKTR38G31	SKTR38■	197.	SKTR38	185.
	24–28 Vac Only	Full Voltage	SKTR35R31	SKTR35G31	SKTR35■	197.	SKTR35	185.
	For other voltages see Tables ▲■▼	Full Voltage or Resistor▼	SKTR▲R31	SKTR▲G31	SKTR▲■	197.	SKTR▲	185.

- ▲ Add the voltage assembly code as chosen from Table 19.228 or Table 19.229 on page 19-82.
EXAMPLE: SKT♦R31 with 208 Vac red LED voltage = SKT37LRR31.
- Add the color code as chosen from the color cap table below.
EXAMPLE: SKP1♦ with a blue fresnel cap = SKP1L31.
- ♦ The cap must be the same color as the LED light module chosen, e.g., for a green LED, use a green color cap.
- ★ On neon light modules, use clear color caps only.
- ▼ Use only full voltage or resistor voltage assembly codes on remote test pilot lights. Do not choose LED, neon or transformer codes. For AC use only.

Table 19.221: Color Caps

Color	■ Plastic Fresnel	■ Plastic Domed
Amber	A31	A9
Blue	L31	L9
Clear	C31	C9
Green	G31	G9
Red	R31	R9
White	W31	W9
Yellow	Y31	Y9

Typical Wiring Diagram




NOTE: When ordering, add prefix **9001** to the catalog number.
To select and order contact blocks, light modules, and accessories, see pages 19-81 through 19-88.

Table 19.222: Multifunction Operators—UL Types 4, 4X, 13/NEMA 4, 4X, 13

For use in hazardous locations—See page 19-83.

Legend plate and contact blocks not included unless otherwise noted.

Interlocked Assembly	Description	Color	Contacts	\$ Price	Without Contacts	\$ Price
	Interlocked Assembly Both Buttons Maintained	Universal ▲	SKR11UH1	178.	SKR11U	120.
		Other ■	SKR11■H1		SKR11■	
	Interlocked Assembly One Button Momentary	Universal ▲	SKR12UH1H1	273.	SKR12U	162.
	Interlocked Assembly One Button Maintained	Other ■	SKR12■H1H1		SKR12■	

9001SKR11U

- ▲ Universal for SKR11,12 includes 2 each of black, red, green, yellow, orange, blue, white.
- Choose one color for each button from table and insert color code in type number, top button first.
Example: An SKR11 with top button gray and bottom button orange = SKR11ES

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The Class 9001 Type KA contact blocks are Fingersafe® contact blocks (meeting VDE 0106 Part 100). They have one screw mounting and captive (backed out) plus/minus terminal screws. These contact blocks are double-break, direct-acting contacts. Because of the wiping action of these contacts, they are suitable for use with programmable controllers. All contact blocks listed below accept up to 2 #12-#24 AWG solid or stranded wires. Recommended tightening torque for screw terminals is 7 lb-in.

Table 19.223: Standard Contact Blocks

Description	Symbol	Type	\$ Price
(Clear Cover)	 Direct-Acting	KA1	42.80
(Green Cover)		KA2	21.50
(Red Cover)	 Direct-Acting	KA3	21.50
(Clear Cover)	 N.O. Contact Early Closing	KA4	42.80
(Red Cover)		KA5	21.50
(Green Cover)	 N.O. Contact Early Closing	KA6	21.50

Table 19.224: Additional Circuit Arrangements

Sequencing ▲ N.O. Contact of KA4 closes before N.O. Contact on KA1	 KA4 KA1	Order One Type KA4 and One Type KA1	85.60
Overlapping ▲ N.O. Contact of KA4 closes before N.C. Contact of KA5 Opens	 KA4 KA5	Order One Type KA4 and One Type KA5	64.30

▲ For push buttons or two-position selector switches only. For sequencing or overlapping contacts on other operators, refer to catalog 9001CT0001.

Table 19.227: Maximum Current Ratings for Control Circuit Contacts—Types KA1–KA6, KA21–KA25, KA31–KA35, KA1G–KA6G

V	AC						Resistive 75% Power Factor Make, Break and Continuous Amperes	Volts	DC				
	Inductive (NEMA / UL Type A600) 35% Power Factor					Continuous Carrying Amperes			Inductive and Resistive (NEMA Q600)				
	Make		Break		Continuous Carrying Amperes				Make and Break				Continuous Carrying Amperes
	Amperes	VA	Amperes	VA					KA1	KA2 KA3	KA4	KA5 KA6	
120	60	7200	6.0	720	10	10	125 250 600	0.55	0.55	—	—	2.5	
240	30		3.0					0.27	0.27	—	—		
480	15		1.5					0.10	0.10	—	—		
600	12		1.2										

NOTE: When ordering, add prefix 9001 to the catalog number.

Symbol	Contact Blocks with Binder Head Screws (not Fingersafe)			Gold Flashed Contacts with Standard Pressure Wire Terminals	
	Type	Quantity ■	\$ Price	Type	\$ Price
	KA21	25-Up	42.80	KA31	71.00
	KA22	25-Up	21.50	KA32	35.60
	KA23	25-Up	21.50	KA33	35.60
 N.O. Early Closing	KA24	25-Up	42.80	KA34	71.00
 N.C. Contact Late Opening	KA25	25-Up	21.50	KA35	35.60

■ Minimum order quantity is 25. The price represents one individual contact block.

Contact blocks listed below are not Fingersafe, but provide:

- Terminals that accept ring tongue/fork tongue connectors
- Short single circuit contact blocks (0.75" deep vs. 0.97" deep on the Fingersafe)
- Same as old style Series G product available prior to March, 1989.
- For assembled operators, use form Y238 (add to catalog number as suffix, for example: 9001KRU1H13Y238)



Table 19.225: Contact blocks (not Fingersafe)

Symbol	Type	\$ Price	Symbol	Type	\$ Price
	KA1G	42.80	 N.O. Contact Early Closing	KA4G	42.80
	KA2G	21.50	 N.C. Contact Late Opening	KA5G	21.50
	KA3G	21.50	 N.O. Contact Early Closing	KA6G	21.50

Table 19.226: Contact blocks with Quick-Connect terminals (not Fingersafe)

Symbol	Type	\$ Price
	KA12	35.60
	KA13	35.60

Dimensions..... Catalog 9001CT0001

For use in hazardous locations—See page 19-83.

- With neon type light modules, use a clear color cap only.
- With LED light modules, use either a clear color cap or a cap the same color as the LED.

Table 19.228: Standard Light Modules for Types K, SK, and KX Control Units ■



Voltage	Description	Light Module		Voltage Assembly Code	Rating	Replacement Lamp	
		Type	\$ Price			Part Number ■	\$ Price
All	Full Voltage (without Bayonet Base Lamp)	KM40	78.00	40	—	None	—
6 Vac/Vdc	Full Voltage	KM31	86.00	31	.9 VA	2550101020	12.45
6 Vac/Vdc	LED Red	KM31LR	116.00	31LR		6508805201	42.75
6 Vac/Vdc	LED Green	KM31LG	116.00	31LG		6508805203	42.75
6 Vac/Vdc	LED Yellow	KM31LY	116.00	31LY		6508805202	28.50
12–14 Vac/Vdc	Full Voltage	KM32	86.00	32	1.2 VA	2550101037	12.45
12–14 Vac/Vdc	LED Red	KM32LR	116.00	32LR		6508805201	42.75
12–14 Vac/Vdc	LED Green	KM32LG	116.00	32LG		6508805203	42.75
12–14 Vac/Vdc	LED Yellow	KM32LY	116.00	32LY		6508805202	28.50
18 Vac/Vdc	Resistor	KM33	86.00	33	1.4 VA	2550101037	12.45
24–28 Vac/Vdc	Full Voltage	KM35	86.00	35	1.2 VA	2550101002	12.45
24–28 Vac/Vdc	LED Red	KM35LR	116.00	35LR	.28 VA	6508805210	42.75
24–28 Vac/Vdc	LED Green	KM35LG	116.00	35LG	.28 VA	6508805212	42.75
24–28 Vac/Vdc	LED Yellow	KM35LY	116.00	35LY	.28 VA	6508805211	42.75
24–28 Vac/Vdc	LED White	KM35LW	116.00	35LW	.28 VA	6508805214	42.75
24–28 Vac/Vdc	LED Blue	KM35LL	116.00	35LL	.28 VA	6508805213	42.75
48 Vac/Vdc	Full Voltage	KM36	86.00	36	2.6 VA	2550101025	12.45
110–120 V, 50–60 Hz	LED Red	KM1LR	143.00	1LR		6508805201	42.75
110–120 V, 50–60 Hz	LED Green	KM1LG	143.00	1LG		6508805203	42.75
110–120 V, 50–60 Hz	LED Yellow	KM1LY	143.00	1LY		6508805202	42.75
110–120 V, 50–60 Hz	Transformer	KM1	116.00	1	2.4 VA	2550101020	12.45
110–120 V, 50–60 Hz	Flashing	KMF1	116.00	F1	.85 VA	2550101036	16.50
120 Vac/Vdc	Resistor	KM38	86.00	38	3.0 VA	2550101027	12.45
120 Vac/Vdc	Full Voltage	KM38	86.00	38	3.0 VA	2550101027	12.45
120 Vac/Vdc	Neon ▲	KM11	86.00	11	0.2 VA	2550101013	32.85
120 Vac/Vdc	LED Red	KM38LR	116.00	38LR	1.4 VA	6508805210	42.75
120 Vac/Vdc	LED Green	KM38LG	116.00	38LG	1.4 VA	6508805212	42.75
120 Vac/Vdc	LED Yellow	KM38LY	116.00	38LY	1.4 VA	6508805211	42.75
120 Vac/Vdc	LED White	KM38LW	116.00	38LW	1.4 VA	6508805214	42.75
120 Vac/Vdc	LED Blue	KM38LL	116.00	38LL	1.4 VA	6508805213	42.75
208–220 V, 50–60 Hz	Transformer	KM3	116.00	3	2.5 VA	2550101020	12.45
208–220 V, 50–60 Hz	LED Red	KM3LR	143.00	3LR		6508805201	42.75
208–220 V, 50–60 Hz	LED Green	KM3LG	143.00	3LG		6508805203	42.75
208–220 V, 50–60 Hz	LED Yellow	KM3LY	143.00	3LY		6508805202	42.75
220–240 V, 50–60 Hz	Transformer	KM7	116.00	7	2.0 VA	2550101020	12.45
220–240 V, 50–60 Hz	LED Red	KM7LR	143.00	7LR		6508805201	42.75
220–240 V, 50–60 Hz	LED Green	KM7LG	143.00	7LG		6508805203	42.75
220–240 V, 50–60 Hz	LED Yellow	KM7LY	143.00	7LY		6508805202	42.75
240 Vac/Vdc	Resistor	KM25	86.00	25	6.0 VA	2550101027	12.45
240 Vac/Vdc	Neon ▲	KM12	86.00	12	0.3 VA	2550101013	32.85
277 V, 50–60 Hz	Transformer	KM8	116.00	8	2.4 VA	2550101020	12.45
380–480 V, 50–60 Hz	Transformer	KM5	116.00	5	2.8 VA	2550101020	12.45
480 Vac/Vdc	Neon ▲	KM14	86.00	14	0.5 VA	2550101013	32.85
550–600 V, 50–60 Hz	Transformer	KM6	116.00	6	2.5 VA	2550101020	12.45

- ▲ Not for use on KX operators.
- For use with all operators except KX and remote test pilot.

NOTE: Light modules are available in other voltages. For additional information, refer to Catalog 9001CT0001.

For use in hazardous locations—See page 19-83.

- Reduces the depth of illuminated push buttons with contact blocks by over 33%.
- With LED light modules, use a cap that is the same color as the LED.

Table 19.229: Shallow Depth Light Modules For Types K and SK Control Units ♦



Voltage	Description	Light Module		Voltage Assembly Code	Rating	Replacement Lamp	
		Type	\$ Price			Part Number	\$ Price
24–28 Vac/Vdc	Full Voltage	KM55	86.00	55	1.2 VA	2550101002	12.45
	LED Red	KM55LR	116.00	55LR	0.5 VA	6508805204	42.75
	LED Green	KM55LG		55LG		6508805206	
	LED Yellow	KM55LY		55LY		6508805205	
110–120 Vac/Vdc	Full Voltage	KM58	86.00	58	3.0 VA	2550101027	12.45
	LED Red	KM58LR	116.00	58LR	0.5 VA	6508805204	42.75
	LED Green	KM58LG		58LG		6508805206	
	LED Yellow	KM58LY		58LY		6508805205	

- ♦ For use with all operators except KX and remote test pilot.

NOTE: When ordering, add prefix 9001 to the catalog number.



File E42259
CCN NKCR



File Class LR25490
3211 03



marked

30 mm Push Buttons



Hazardous locations do not always require the use of explosion-proof equipment like the Class 9001 Type BR control stations. Selecting the most appropriate device for the location can save you money. For more information on the types of hazardous locations, contact your local electrical inspector.

Table 19.230: Square D Offering According to Class, Division, and Group

For			Use
Class	Division	Group(s)	
I	1	A	1. Intrinsically Safe System
I	1	B, C, D	1. 9001 BR station
I	2	A	1. 9001 K, SK, KX control stations with restrictions ▲ 2. Intrinsically Safe System
I	2	B, C, D	1. 9001 BR station 2. 9001 K, SK, KX control stations with restrictions ▲ 3. Intrinsically Safe System
II	1	E, F, G	1. 9001 BR station 2. Intrinsically Safe System
II	2	E, F	1. 9001 BR station 2. 9001 K, SK, KX control stations with restrictions ▲ 3. Intrinsically Safe System
II	2	G	1. 9001 BR station 2. 9001 K, SK, KX control stations with restrictions ■ 3. Intrinsically Safe System
III	1, 2	—	1. 9001 BR Station 2. 9001 K, SK, KX control stations with restrictions ■ 3. Intrinsically Safe System

- ▲ Any Class 9001 Type K, SK or KX operator can be used in an area classified as Class 1, Division 2 hazardous locations, if:
 1. Only logic (KA40 series) or power (KA50 series) reed contact blocks are used.
 2. All Type K and SK illuminated operators are UL approved for use in Class I Division 2 areas. ◆
 3. Type KX illuminated operators do not use 4 lamp light modules, or 2 lamp light modules other than the transformer type. ◆
 4. The operators are mounted in any NEMA 4 & 13 enclosures.
 - Any Class 9001 Type K, SK, or KX operator mounted in a Class 9001 Type KY, KYSS, KYAF, SKY enclosure may be used, except potentiometer operators.
 - ◆ Add Form Y243 to single lamp Push-To-Test pilot lights.
- Note: For ▲ and ■: UL Listed: File E10054(N), CCN NOIV.

Table 19.231: Hazardous Locations (see page 19-83)

Types K, SK  File CCN E10054(N) NOIV  File Class LR26817 3218 02







NOTE: When ordering, add prefix 9001 to the catalog number.

Type K, SK and KX Electrical Components

Class 9001 / Refer to Catalog 9001CT0001

NOTE: All contact blocks listed below accept #12–18 solid or stranded wire.

Table 19.232: Hermetically Sealed Logic Reed Contact Blocks △
Suitable for use on low energy level circuits

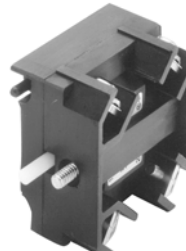





Description	Symbol	Type	\$ Price
		KA41	86.00
		KA42	42.80
		KA43	42.80
		KA44	86.00
		KA45	86.00

Max. Vac/Vdc	Maximum Load		
	Resistive	Inductive	Continuous
32/30	.25 A	.10 A	.5 A
120/100	8 VA	3 VA	.5 A

The maximum number of logic and/or power reed contact blocks per operator is as indicated on individual selection tables for standard contact blocks, **except:**

- On 3 position selector switches with cams C, D, E, F, G, L, or M, mount reed blocks on **one side only** (either side), maximum 2 in tandem.
- On 4 position selector switches, mount reed blocks on **one side only** (either side), maximum 2 in tandem.
- On joysticks or on Type KR8 or SKR8 push-pull operators, mount reed blocks on **one side only** (either side), maximum 2 in tandem.

Table 19.233: Hermetically Sealed Power Reed Contact Blocks △

Description	Symbol	Type	\$ Price
		KA51	143.00
		KA52	101.00
		KA53	101.00
		KA54	143.00
		KA55	143.00

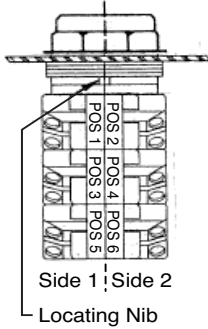
Volts	AC NEMA C300 ★				Continuous Carrying Amperes
	Make		Break		
	A	VA	A	VA	
120	10.00	1200	1.000	120	3.0
240	5.00		.500		

Volts	DC NEMA Q150 ▼				Continuous Carrying Amperes
	Make		Break		
	A	VA	A	VA	
115	.50	58	.50	58	3.0

Note: The power reed contact blocks can be used with standard industrial relays and starters through NEMA Size 4. Minimum voltage is 5 V and the minimum current is 1 mA.

- ★ Inductive Rating—35% Power Factor.
- ▼ Inductive and Resistive Ratings
- △ Not for use in pendant stations.

Example: A Type KR1B push button with 2 Type KA1 contact blocks would be Class 9001 Type KR1BH2.



The design of the Class 9001 Type KA contact blocks allows them to be mounted side by side and/or in tandem. This enables you to specify an operator and a particular arrangement of contact blocks (shipped completely assembled) with a single Type number. See page 19-78 for a description of contact blocks.

Table 19.234: "H" Codes

Suffix No. (Add to Operator Type)	\$ Price	Positions					
		1	2	3	4	5	6
H1	28.50	KA1					
H2	57.00	KA1	KA1				
H3	86.00	KA1	KA1	KA1	KA1		
H4	114.00	KA1	KA1	KA1	KA1		
H5	14.30	KA2					
H6	14.30	KA3					
H7	28.50	KA2	KA2				
H8	28.50	KA3	KA3				
H9	57.00	KA4	KA4	KA1			
H10	42.80	KA4	KA5				
H11	86.00	KA1	KA1		KA1		
H12	57.00	KA2	KA3	KA2	KA3		
H13	28.50		KA1				
H14	14.30		KA3				
H15	42.80	KA2	KA3	KA2			
H16	42.80	KA2	KA3		KA3		
H17	71.00	KA1	KA1	KA2			
H18	71.00	KA3	KA1	KA3		KA3	
H19	143.00	KA1	KA1	KA1	KA1	KA1	
H21	28.50	KA2	KA3				
H23	171.00	KA1	KA1	KA1	KA1	KA1	KA1
H24	42.80	KA1	KA2				
H25	28.50	KA5	KA3				

NOTE: For "H" Codes not shown in this table, contact your local Schneider Electric representative.

Table 19.235: Dimensions When Using Contact Blocks

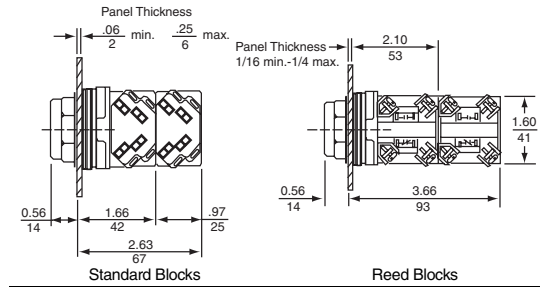
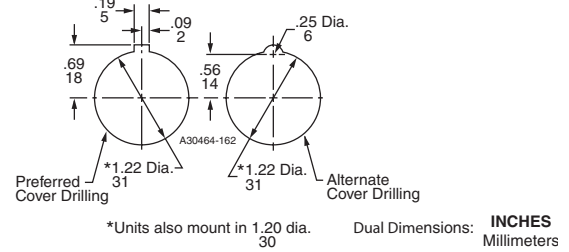


Table 19.236: Basic Operators (Without Color Caps, Mushroom Buttons, Knobs, Selector Switch Cams, Contact Blocks, Light Modules, or Legend Plates)

Description	For UL Types/NEMA		\$ Price
	1, 3R, 4, 12, 13	4, 4X, 13	
Non-Illuminated Push Button (Extended Guard)	KR2	SKR2	38.55
Non-Illuminated Push Button (No Guard)	KR3	SKR3	38.55
Non-Illuminated Push Button (Mushroom Button/Screw-On)	KR20	SKR20	38.55
Non-Illuminated Dual Push Button (Momentary)	KR6	—	78.00
Non-Illuminated Dual Push Button (Momentary Interlocked)	KR67	—	121.50
Non-Illuminated Dual Push Button (Maintained Interlocked)	KR7	—	121.50
Momentary Pull—Maintained Neutral—Momentary Push	KR8 ▲★	SKR8 ▲	75.00
Maintained Pull—Maintained Push	KR9 ▲★	SKR9 ▲	120.00
Illuminated Push Button (Full Guard—Plastic Top)	KTL ■	SKTL ■	42.75
Illuminated Push Button and Push-To-Test (No Guard)	K2L ■◆	SK2L ■◆	28.65
Illuminated Push Button (Full Guard—Metal Top)	K3L ■	—	42.75
Standard Pilot Light	KP	SKP	28.65
3 Position Maintained Selector Switch	KS4 ▲	SKS4 ▲	36.30
3 Position Spring Return Both Sides To Center—Selector Switch	KS5 ▲	SKS5 ▲	64.80
3 Position Spring Return Left To Center—Selector Switch	KS6 ▲	SKS6 ▲	64.80
3 Position Spring Return Right To Center—Selector Switch	KS7 ▲	SKS7 ▲	64.80

- ▲ Operator can be converted to an illuminated operator by removing the liner (6512240601) and adding a light module.
- Operator can be converted to a non-illuminated operator by adding liner (6512240601).
- ◆ Operator includes jumper wires for push-to-test conversion.
- ★ These operators can be supplied with 1-3/8 in. or 2-1/4 in. dia. mushroom buttons. For 1-3/8 in.: add () 20 to type number. The () refers to the color chosen—see page 19-88. For 2-1/4 in.: Add () 21 to type number. The () refers to the color chosen—see page 19-88. Voids UL and NEMA 6 Rating.

Mounting Hole for All Types K, SK, and KX Control Units

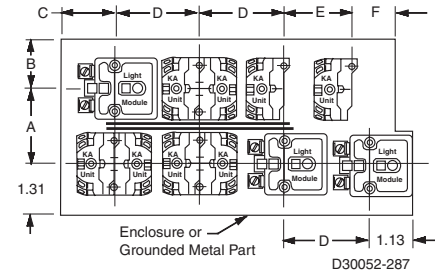


Hole Punch: Use Greenlee Tool #60242 to punch mounting hole and notch.

Maximum Contact Block Usage

(Includes Types K, SK and KX)




- **2 blocks mounted side by side only:** Any 2, 3 or 4 position spring return selector switch (non-illuminated, illuminated or keyed).
- **2 blocks mounted in tandem on one side only:** Any 2 operator interlocked push button.
- **2 blocks mounted in tandem (total of four blocks):** Any selector push button, keyed push button, 2, 3, or 4 position maintained selector switch (non-illuminated, illuminated or keyed), push-pull operators (non-illuminated or illuminated), joy stick, dual push button.
- **3 blocks mounted in tandem (total of six blocks):** Single momentary push buttons (non-illuminated or illuminated).



Min. Centerline Spacing, Type K & SK Control Units

Legend Plate	Operator	Centerline Spacing (in.)					
		A	B	C	D	E	F
Legend Plate Orientation Position #1							
KN2	Standard Push Button	1.75	1.31	1.44	2.25	1.69	0.88
	1.375 in. Dia. Mushroom	1.75	1.31	1.44	2.25	1.69	0.88
	2.25 in. Dia. Mushroom	2.25	1.31	1.44	2.25	2.25	1.12
KN3	Selector Switch Knobs	1.75	1.31	1.44	2.25	1.69	0.88
	Standard Push Button	2.00	1.31	1.44	2.25	1.75	0.88
	1.375 in. Dia. Mushroom	2.00	1.31	1.44	2.25	1.75	0.88
KN4	2.25 in. Dia. Mushroom	2.25	1.31	1.44	2.25	2.25	1.12
	Selector Switch Knobs	2.00	1.31	1.44	2.25	1.75	0.88
	Standard Push Button	1.94	1.31	1.44	2.25	1.62	0.88
KN5	1.375 in. Dia. Mushroom	1.94	1.31	1.44	2.25	1.62	0.88
	2.25 in. Dia. Mushroom	2.25	1.31	1.44	2.25	2.25	1.12
	Selector Switch Knobs	1.74	1.31	1.44	2.25	1.62	0.88
KN6	Standard Push Button	2.38	1.62	1.44	2.25	2.25	1.12
	1.375 in. Dia. Mushroom	2.38	1.62	1.44	2.25	2.25	1.12
	2.25 in. Dia. Mushroom	2.38	1.62	1.44	2.25	2.25	1.12
KN6	Selector Switch Knobs	2.38	1.62	1.44	2.25	2.25	1.12
	Legend Plate Orientation Position #2						
	Standard Push Button	1.62	1.31	1.44	2.25	1.75	0.88
KN2	1.375 in. Dia. Mushroom	1.62	1.31	1.44	2.25	1.75	0.88
	2.25 in. Dia. Mushroom	2.25	1.31	1.44	2.25	2.25	1.12
	Selector Switch Knobs	1.62	1.31	1.44	2.25	1.75	0.88
KN3	Standard Push Button	1.75	1.31	1.44	2.25	2.00	0.88
	1.375 in. Dia. Mushroom	1.75	1.31	1.44	2.25	2.00	0.88
	2.25 in. Dia. Mushroom	2.25	1.31	1.44	2.25	2.25	1.12
KN4	Selector Switch Knobs	1.75	1.31	1.44	2.25	2.00	0.88
	Standard Push Button	1.62	1.31	1.44	2.25	1.94	1.00
	1.375 in. Dia. Mushroom	1.62	1.31	1.44	2.25	1.94	1.00
KN5	2.25 in. Dia. Mushroom	2.25	1.31	1.44	2.25	2.25	1.12
	Selector Switch Knobs	1.62	1.31	1.44	2.25	1.94	1.00
	Standard Push Button	2.25	1.31	1.62	2.38	2.38	0.88
KN6	1.375 in. Dia. Mushroom	2.25	1.31	1.62	2.38	2.38	0.88
	2.25 in. Dia. Mushroom	2.25	1.31	1.62	2.38	2.38	1.12
	Selector Switch Knobs	2.25	1.31	1.62	2.38	2.38	0.88

Table 19.237: Legend Plates

Standard Markings	Plastic Legend Plates for use with Types K and SK Operators									Aluminum Legend Plates for use with Type K Operators		
	1-3/4" Square			2-1/4" Square			2-1/2" Square			Black Legend	Black Legend	Blue Legend
	Silver Legend with Black Letters	White Legend with Black Letters	Black Legend with White Letters	Silver Legend with Black Letters	White Legend with Black Letters	Black Legend with White Letters	Silver Legend with Black Letters	White Legend with Black Letters	Black Legend with White Letters			
For Push Button or Pilot Light										KN200	KN300	KN800
Blank	KN200SP	KN200WP	KN200BP	KN100SP	KN100WP	KN100BP	KN700SP	KN700WP	KN700BP	KN200	KN300	KN800
Blank (red)	KN200RP ■	KN200RP ■	KN200RP ■	KN100RP ■	KN100RP ■	KN100RP ■	KN700RP ■	KN700RP ■	KN700RP ■	KN200R ▲	KN300R ▲	KN800R ▲
Start	KN201SP	KN201WP	KN201BP	KN101SP	KN101WP	KN101BP	KN701SP	KN701WP	KN701BP	KN201	KN301	KN801
Stop	KN202RP ■	KN202RP ■	KN202RP ■	KN102RP ■	KN102RP ■	KN102RP ■	KN702RP ■	KN702RP ■	KN702RP ■	KN202 ▲	KN302 ▲	KN802 ▲
On	KN203SP	KN203WP	KN203BP	KN103SP	KN103WP	KN103BP	KN703SP	KN703WP	KN703BP	KN203	KN303	KN803
Off	KN204RP ■	KN204RP ■	KN204RP ■	KN104RP ■	KN104RP ■	KN104RP ■	KN704RP ■	KN704RP ■	KN704RP ■	KN204 ▲	KN304 ▲	KN804 ▲
Emerg. Stop	KN205RP ■	KN205RP ■	KN205RP ■	KN105RP ■	KN105RP ■	KN105RP ■	KN705RP ■	KN705RP ■	KN705RP ■	KN205 ▲	KN305 ▲	KN805 ▲
Forward	KN206SP	KN206WP	KN206BP	KN106SP	KN106WP	KN106BP	KN706SP	KN706WP	KN706BP	KN206	KN306	KN806
Reverse	KN207SP	KN207WP	KN207BP	KN107SP	KN107WP	KN107BP	KN707SP	KN707WP	KN707BP	KN207	KN307	KN807
Close	KN208SP	KN208WP	KN208BP	KN108SP	KN108WP	KN108BP	KN708SP	KN708WP	KN708BP	KN208	KN308	KN808
Open	KN209SP	KN209WP	KN209BP	KN109SP	KN109WP	KN109BP	KN709SP	KN709WP	KN709BP	KN209	KN309	KN809
Down	KN210SP	KN210WP	KN210BP	KN110SP	KN110WP	KN110BP	KN710SP	KN710WP	KN710BP	KN210	KN310	KN810
Up	KN211SP	KN211WP	KN211BP	KN111SP	KN111WP	KN111BP	KN711SP	KN711WP	KN711BP	KN211	KN311	KN811
Fast	KN212SP	KN212WP	KN212BP	KN112SP	KN112WP	KN112BP	KN712SP	KN712WP	KN712BP	KN212	KN312	KN812
Slow	KN213SP	KN213WP	KN213BP	KN113SP	KN113WP	KN113BP	KN713SP	KN713WP	KN713BP	KN213	KN313	KN813
High	KN214SP	KN214WP	KN214BP	KN114SP	KN114WP	KN114BP	KN714SP	KN714WP	KN714BP	KN214	KN314	KN814
Low	KN215SP	KN215WP	KN215BP	KN115SP	KN115WP	KN115BP	KN715SP	KN715WP	KN715BP	KN215	KN315	KN815
Inch	KN216SP	KN216WP	KN216BP	KN116SP	KN116WP	KN116BP	KN716SP	KN716WP	KN716BP	KN216	KN316	KN816
In	KN217SP	KN217WP	KN217BP	KN117SP	KN117WP	KN117BP	KN717SP	KN717WP	KN717BP	KN217	KN317	KN817
Jog	KN218SP	KN218WP	KN218BP	KN118SP	KN118WP	KN118BP	KN718SP	KN718WP	KN718BP	KN218	KN318	KN818
Jog For.	KN219SP	KN219WP	KN219BP	KN119SP	KN119WP	KN119BP	KN719SP	KN719WP	KN719BP	KN219	KN319	KN819
Jog Rev.	KN220SP	KN220WP	KN220BP	KN120SP	KN120WP	KN120BP	KN720SP	KN720WP	KN720BP	KN220	KN320	KN820
Lower	KN221SP	KN221WP	KN221BP	KN121SP	KN121WP	KN121BP	KN721SP	KN721WP	KN721BP	KN221	KN321	KN821
Out	KN222SP	KN222WP	KN222BP	KN122SP	KN122WP	KN122BP	KN722SP	KN722WP	KN722BP	KN222	KN322	KN822
Reset	KN223SP	KN223WP	KN223BP	KN123SP	KN123WP	KN123BP	KN723SP	KN723WP	KN723BP	KN223	KN323	KN823
Run	KN224SP	KN224WP	KN224BP	KN124SP	KN124WP	KN124BP	KN724SP	KN724WP	KN724BP	KN224	KN324	KN824
Start Jog	KN225SP	KN225WP	KN225BP	KN125SP	KN125WP	KN125BP	KN725SP	KN725WP	KN725BP	KN225	KN325	KN825
Test	KN226SP	KN226WP	KN226BP	KN126SP	KN126WP	KN126BP	KN726SP	KN726WP	KN726BP	KN226	KN326	KN826
Raise	KN227SP	KN227WP	KN227BP	KN127SP	KN127WP	KN127BP	KN727SP	KN727WP	KN727BP	KN227	KN327	KN827
Decrease	KN228SP	KN228WP	KN228BP	KN128SP	KN128WP	KN128BP	KN728SP	KN728WP	KN728BP	KN228	KN328	KN828
Increase	KN229SP	KN229WP	KN229BP	KN129SP	KN129WP	KN129BP	KN729SP	KN729WP	KN729BP	KN229	KN329	KN829
Left	KN230SP	KN230WP	KN230BP	KN130SP	KN130WP	KN130BP	KN730SP	KN730WP	KN730BP	KN230	KN330	KN830
Right	KN231SP	KN231WP	KN231BP	KN131SP	KN131WP	KN131BP	KN731SP	KN731WP	KN731BP	KN231	KN331	KN831
Cycle Start	KN232SP	KN232WP	KN232BP	KN132SP	KN132WP	KN132BP	KN732SP	KN732WP	KN732BP	KN232	KN332	KN832
Feed Start	KN233SP	KN233WP	KN233BP	KN133SP	KN133WP	KN133BP	KN733SP	KN733WP	KN733BP	KN233	KN333	KN833
Cycle Stop	KN234SP	KN234WP	KN234BP	KN134SP	KN134WP	KN134BP	KN734SP	KN734WP	KN734BP	KN234	KN334	KN834
Motor Run	KN236SP	KN236WP	KN236BP	KN136SP	KN136WP	KN136BP	KN736SP	KN736WP	KN736BP	KN236	KN336	KN836
Motor Stop	KN237SP	KN237WP	KN237BP	KN137SP	KN137WP	KN137BP	KN737SP	KN737WP	KN737BP	KN237	KN337	KN837
Power On	KN238SP	KN238WP	KN238BP	KN138SP	KN138WP	KN138BP	KN738SP	KN738WP	KN738BP	KN238	KN338	KN838
Pull To Start												
Push To Stop	N/A	N/A	N/A	KN179SP	KN179WP	KN179BP	KN779SP	KN779WP	KN779BP	N/A	KN379	N/A
For Selector Switch or Selector Push Button												
For.-Rev.	KN239SP	KN239WP	KN239BP	KN139SP	KN139WP	KN139BP	KN739SP	KN739WP	KN739BP	KN239	KN339	KN839
Hand-Auto.	KN240SP	KN240WP	KN240BP	KN140SP	KN140WP	KN140BP	KN740SP	KN740WP	KN740BP	KN240	KN340	KN840
High-Low	KN241SP	KN241WP	KN241BP	KN141SP	KN141WP	KN141BP	KN741SP	KN741WP	KN741BP	KN241	KN341	KN841
Jog-Run	KN242SP	KN242WP	KN242BP	KN142SP	KN142WP	KN142BP	KN742SP	KN742WP	KN742BP	KN242	KN342	KN842
Man.-Auto.	KN243SP	KN243WP	KN243BP	KN143SP	KN143WP	KN143BP	KN743SP	KN743WP	KN743BP	KN243	KN343	KN843
Off-On	KN244SP	KN244WP	KN244BP	KN144SP	KN144WP	KN144BP	KN744SP	KN744WP	KN744BP	KN244	KN344	KN844
On-Off	KN245SP	KN245WP	KN245BP	KN145SP	KN145WP	KN145BP	KN745SP	KN745WP	KN745BP	KN245	KN345	KN845
Open-Close	KN246SP	KN246WP	KN246BP	KN146SP	KN146WP	KN146BP	KN746SP	KN746WP	KN746BP	KN246	KN346	KN846
Raise-Lower	KN247SP	KN247WP	KN247BP	KN147SP	KN147WP	KN147BP	KN747SP	KN747WP	KN747BP	KN247	KN347	KN847
Run-Jog	KN248SP	KN248WP	KN248BP	KN148SP	KN148WP	KN148BP	KN748SP	KN748WP	KN748BP	KN248	KN348	KN848
Slow-Fast	KN250SP	KN250WP	KN250BP	KN150SP	KN150WP	KN150BP	KN750SP	KN750WP	KN750BP	KN250	KN350	KN850
Start-Stop	KN251SP	KN251WP	KN251BP	KN151SP	KN151WP	KN151BP	KN751SP	KN751WP	KN751BP	KN251	KN351	KN851
Up-Down	KN253SP	KN253WP	KN253BP	KN153SP	KN153WP	KN153BP	KN753SP	KN753WP	KN753BP	KN253	KN353	KN853
Low-High	KN254SP	KN254WP	KN254BP	KN154SP	KN154WP	KN154BP	KN754SP	KN754WP	KN754BP	KN254	KN354	KN854
Stop-Start	KN255SP	KN255WP	KN255BP	KN155SP	KN155WP	KN155BP	KN755SP	KN755WP	KN755BP	KN255	KN355	KN855
Left-Right	KN256SP	KN256WP	KN256BP	KN156SP	KN156WP	KN156BP	KN756SP	KN756WP	KN756BP	KN256	KN356	KN856
On-Auto	KN276SP	KN276WP	KN276BP	KN176SP	KN176WP	KN176BP	KN776SP	KN776WP	KN776BP	KN276	KN376	KN876
Auto-Off-Hand	KN258SP	KN258WP	KN258BP	KN158SP	KN158WP	KN158BP	KN758SP	KN758WP	KN758BP	KN258	KN358	KN858
For.-Off-Rev.	KN259SP	KN259WP	KN259BP	KN159SP	KN159WP	KN159BP	KN759SP	KN759WP	KN759BP	KN259	KN359	KN859
Hand-Off-Auto.	KN260SP	KN260WP	KN260BP	KN160SP	KN160WP	KN160BP	KN760SP	KN760WP	KN760BP	KN260	KN360	KN860
Man.-Off-Auto.	KN262SP	KN262WP	KN262BP	KN162SP	KN162WP	KN162BP	KN762SP	KN762WP	KN762BP	KN262	KN362	KN862
Open-Off-Close	KN263SP	KN263WP	KN263BP	KN163SP	KN163WP	KN163BP	KN763SP	KN763WP	KN763BP	KN263	KN363	KN863
Up-Off-Down	KN264SP	KN264WP	KN264BP	KN164SP	KN164WP	KN164BP	KN764SP	KN764WP	KN764BP	KN264	KN364	KN864
Low-Off-High	KN265SP	KN265WP	KN265BP	KN165SP	KN165WP	KN165BP	KN765SP	KN765WP	KN765BP	KN265	KN365	KN865
Jog-Stop-Run	KN267SP	KN267WP	KN267BP	KN167SP	KN167WP	KN167BP	KN767SP	KN767WP	KN767BP	KN267	KN367	KN867
High-Low-Off	KN270SP	KN270WP	KN270BP	KN170SP	KN170WP	KN170BP	KN770SP	KN770WP	KN770BP	KN270	KN370	KN870
High-Off-Low	KN277SP	KN277WP	KN277BP	KN177SP	KN177WP	KN177BP	KN777SP	KN777WP	KN777BP	KN277	KN377	KN877
Auto-Man.-Off	KN278SP	KN278WP	KN278BP	KN178SP	KN178WP	KN178BP	KN778SP	KN778WP	KN778BP	KN278	KN378	KN878

▲ Legend plate has red background with silver letters.
■ Legend plate has red background with black letters.

For Pricing Information page 19-86

NOTE: When ordering, add prefix 9001 to the catalog number.

Table 19.238: Legend Plates—Special Marking

Legend Plate	Description	Type	\$ Price	
KN100 (JP) (Plastic) ▲ 2.25 in. Square	Standard Markings	See page 19-85	4.40	
	Special Marking ■	Silver Field, Black Letters	KN199SP	18.50
		White Field, Black Letters	KN199WP	
		Red Field, Black Letters	KN199RP	
Black Field, White Letters		KN199BP		
KN200 Aluminum	Standard Markings	See page 19-85	4.40	
	Special Marking ■	Black Field	KN299	18.50
Red Field		KN299R		
KN200 (JP) (Plastic) ▲ 1.7 in. Square	Standard Markings	See page 19-85	4.40	
	Special Marking ■	Silver Field, Black Letters	KN299SP	18.50
		White Field, Black Letters	KN299WP	
		Red Field, Black Letters	KN299RP	
Black Field, White Letters		KN299BP		
KN300 Aluminum	Standard Markings	See page 19-85	4.40	
	Special Marking ■	Black Field	KN399	18.50
Red Field		KN399R		
KN400 Aluminum	Blank	KN400	8.60	
	Any Marking ■	KN499	22.80	
KN500 Aluminum	Standard Markings	Select from Table 19.243	4.40	
	Special Marking ■	Black Field	KN599	18.50
Green Red Field		KN519		
KN600 Aluminum	Blank	Black Field	KN600	9.90
		Red Field	KN600R	
	Any Marking ■	Black Field	KN699	22.80
Red Field		KN699R		
KN700 (JP) (Plastic) ▲ 2.5 in. Square	Standard Markings	Select from page 19-85	4.40	
	Special Marking ■	Silver Field, Black Letters	KN799SP	18.50
		White Field, Black Letters	KN799WP	
		Red Field, Black Letters	KN799RP	
Black Field, White Letters		KN799BP		
KN800 Aluminum	Standard Markings	Select from page 19-85	4.40	
	Special Marking ■	Blue Field	KN899	18.50
Red Field		KN899R		
KN900 Aluminum	Blank	KN900	4.40	
	Any Marking ■	KN999	18.50	

▲ Other colors available (see Table 19.239).
■ Specify marking required.



Legend Plate Position #1

Table 19.242: Min. Centerline Spacing, Type K & SK Control Units

Legend Plate	Operator	Centerline Spacing (in.)					
		A	B	C	D	E	F
Legend Plate Orientation Position #1							
KN2 KN5	Standard Push Button	1.75	1.31	1.44	2.25	1.69	0.88
	1.375 in. Dia. Mushroom	1.75	1.31	1.44	2.25	1.69	0.88
	2.25 in. Dia. Mushroom	2.25	1.31	1.44	2.25	2.25	1.12
	Selector Switch Knobs	1.75	1.31	1.44	2.25	1.69	0.88
KN3	Standard Push Button	2.00	1.31	1.44	2.25	1.75	0.88
	1.375 in. Dia. Mushroom	2.00	1.31	1.44	2.25	1.75	0.88
	2.25 in. Dia. Mushroom	2.25	1.31	1.44	2.25	2.25	1.12
	Selector Switch Knobs	2.00	1.31	1.44	2.25	1.75	0.88
KN4	Standard Push Button	1.94	1.31	1.44	2.25	1.62	0.88
	1.375 in. Dia. Mushroom	1.94	1.31	1.44	2.25	1.62	0.88
	2.25 in. Dia. Mushroom	2.25	1.31	1.44	2.25	2.25	1.12
	Selector Switch Knobs	1.74	1.31	1.44	2.25	1.62	0.88
KN6	Standard Push Button	2.38	1.62	1.44	2.25	2.25	1.12
	1.375 in. Dia. Mushroom	2.38	1.62	1.44	2.25	2.25	1.12
	2.25 in. Dia. Mushroom	2.38	1.62	1.44	2.25	2.25	1.12
	Selector Switch Knobs	2.38	1.62	1.44	2.25	2.25	1.12



Legend Plate Position #2

Legend Plate Orientation Position #2

KN2 KN5	Standard Push Button	1.62	1.31	1.44	2.25	1.75	0.88
	1.375 in. Dia. Mushroom	1.62	1.31	1.44	2.25	1.75	0.88
	2.25 in. Dia. Mushroom	2.25	1.31	1.44	2.25	2.25	1.12
	Selector Switch Knobs	1.62	1.31	1.44	2.25	1.75	0.88
KN3	Standard Push Button	1.75	1.31	1.44	2.25	2.00	0.88
	1.375 in. Dia. Mushroom	1.75	1.31	1.44	2.25	2.00	0.88
	2.25 in. Dia. Mushroom	2.25	1.31	1.44	2.25	2.25	1.12
	Selector Switch Knobs	1.75	1.31	1.44	2.25	2.00	0.88
KN4	Standard Push Button	1.62	1.31	1.44	2.25	1.94	1.00
	1.375 in. Dia. Mushroom	1.62	1.31	1.44	2.25	1.94	1.00
	2.25 in. Dia. Mushroom	2.25	1.31	1.44	2.25	2.25	1.12
	Selector Switch Knobs	1.62	1.31	1.44	2.25	1.94	1.00
KN6	Standard Push Button	2.25	1.31	1.62	2.38	2.38	0.88
	1.375 in. Dia. Mushroom	2.25	1.31	1.62	2.38	2.38	0.88
	2.25 in. Dia. Mushroom	2.25	1.31	1.62	2.38	2.38	1.12
	Selector Switch Knobs	2.25	1.31	1.62	2.38	2.38	0.88

Table 19.243: Special Legend Plates

Type KN500 (For Use with Dual Function Operators: KR6, KR7 and KR67)		
Standard Markings		
Type	Green	Red
KN500	Blank	Blank
KN501	Start	Stop
KN502	On	Off
Type	Black	Black
KN520	Blank	Blank
KN521	Start	Stop
KN522	On	Off
KN523	Forward	Reverse
KN524	Up	Down
KN525	High	Low
KN526	Open	Close

Table 19.239: Plastic Legend Plates—Other Colors

	Plate Color	Letter Color	1.7 in. Square	2.25 in. Square	2.5 in. Square	\$ Price
Blank Legend Plates	Yellow	Black	KN200YP	KN100YP	KN700YP	4.40
	Green	White	KN200GP	KN100GP	KN700GP	
	Blue		KN200LP	KN100LP	KN700LP	
	Red		KN200CP	KN100CP	KN700CP	
	Orange		KN200AP	KN100AP	KN700AP	
	Burnt Orange	Black	KN200HP	KN100HP	KN700HP	
Special Engraved Legend Plates	Yellow	Black	KN299YP	KN199YP	KN799YP	18.50
	Green	White	KN299GP	KN199GP	KN799GP	
	Blue		KN299LP	KN199LP	KN799LP	
	Red		KN299CP	KN199CP	KN799CP	
	Orange		KN299AP	KN199AP	KN799AP	
	Burnt Orange	Black	KN299HP	KN199HP	KN799HP	

Table 19.240: Maximum Number of Lines and Characters for Type KN Legend Plates

Type	KN100	KN200	KN300	KN400	KN500	KN600	KN700	KN800	KN900
Max. No. of Characters per Line	16	14	18	18	8 per field	22	17	18	18 per pos.
Max. No. of Lines	2	1	3	2	2 per field	4	2	2	1 per pos.

Note: The maximum number of characters and lines is a practical maximum, based on a minimum size of characters to facilitate easy reading.

Table 19.241: Circular Legends for Emergency Stop Mushroom Heads (yellow background)

Diameter	Text	Catalog Number	\$ Price
60 mm	—	9001KN9100	4.40
	EMERGENCY STOP	9001KN9330	
90 mm	—	9001KN8100	
	EMERGENCY STOP	9001KN8330	

NOTE: When ordering, add prefix 9001 to the catalog number.

Table 19.244: Padlock Attachments

	Used On	Description	Type	\$ Price
	Type K non-illuminated push button — Standard or mushroom (KR4, KR5 mushroom buttons only).	Holds button in depressed position and can be padlocked.	K4	42.80
	Types K and SK non-illuminated push buttons with or without protective boots.	Holds button in depressed position when padlocked.	K5	71.00
	Types K and SK illuminated push buttons (with or without guard) and key operated push buttons.	Attachment can be padlocked. Does not hold button in depressed position.	K97	42.80
	Types K and SK non-illuminated push buttons, cover type attachment. KR, SKR	Attachment can be padlocked. Does not hold button in depressed position.	K6	42.80
	Types K and SK push buttons, cover type attachment.	Spring loaded cover cannot be padlocked. Does not hold button in depressed position.	K60	57.00
	Types K and SK push-pull operator and illuminated push buttons. KR8, KR9	Holds button in depressed position and can be padlocked.	K62	71.00
	KR11U and KR12U Interlocked Assembly	Holds maintained button in depressed position and can be padlocked.	K96	42.80
	Type KR9 & SKR9 Push-Pull operators— Non-Illuminated and Illuminated	Holds button in depressed position. Can be padlocked.	K162	59.00

Table 19.245: Mushroom Button Guards

Aluminum Mushroom Guard for 1.375 in. Mushroom Button Operator (KR4, KR24)		Yellow Plastic Extended Mushroom Guard for 1.375 in. and 1.625 in. Mushroom Button Operators			Aluminum Mushroom Guard for 2.25 in. Mushroom Button Operator		
Type	\$ Price	Type	Used On	\$ Price	Type	Used On	\$ Price
K48	57.00	K56■	KR4, SKR4	57.00	K68	KR5	57.00
		K56◆▲	KR8, KR9, SKR8, SKR9	68.00	K685	KR25	68.00

▲ The mushroom guard has finger holes for push-pull operators.
■ B=Black G=Green R=Red Y=Yellow
◆ R=Red Y=Yellow

Table 19.246: Padlock Attachments

	Used On	Description	Type	\$ Price
	Types K and SK selector switches and potentiometers (will not work with gloved-hand knob).	Cover type attachment that can be padlocked to keep unauthorized personnel from tampering with the operator.	K7	42.80
	Types K and SK selector switches and potentiometers (will not work with gloved-hand knob).	Same as 9001K7 but with spring loaded lockout cover.	K107	56.00
	Types K and SK illuminated push buttons (with or without guard) and key operated push buttons.	Cover type attachment that can be padlocked to keep unauthorized personnel from tampering with the operator.	K108	42.80
	Types K and SK illuminated push buttons (with or without guard) and key operated push buttons.	Same as 9001K108 but with spring loaded lockout cover.	K109	57.00
	Types K and SK maintained push-pull operators using 1.375 in. dia. mushroom buttons (-20 series as shown on page 19-88).	Cover type attachment that holds mushroom button in depressed position and can be padlocked.	K110	54.00

Table 19.247: Protective Boots

Color	Type	\$ Price	Clear Color for	Type	\$ Price	
Black	KU1	28.70	Standard knob selector switch	KU17	42.80	
Red	KU2		Gloved-hand cap for use on standard knob selector switch	KU18	42.80	
Blue	KU3					
Brown	KU4		Standard pilot light and maintained contact push buttons	KU27	42.80	
Green	KU5					
Yellow	KU6					
Clear	KU7		42.80	Push-to-test and illuminated push button without guard	KU37	42.80
Clear	KU8			Provides Full Guard	KU47	57.00

Note: These Type KU protective boots are recommended for very dirty environments or severe hose down, but they are not required for UL Type 4 rating on the Type K operators or UL Type 4 or 4X rating on the Type SK operators. The K1 wrench (see page 19-89) is required for installation of these boots.

★ Use KU27 for maintained contact push buttons.

Table 19.248: Closing Plates

Description	Type	\$ Price
Gray	K51 ▼	14.30
Black	K52 ▼	













Round (1-1/2 in. Dia.)

▼ Meets UL and NEMA 1, 2, 3, 4, 4X, 6, 12 and 13.

Dimensions see catalog 9001CT0001

NOTE: When ordering, add prefix 9001 to the catalog number.

Table 19.249: Accessories

Description	Color	Type	Package Qty.	\$ Price Each	
 Color inserts for KR1, KR2, KR3, SKR1, SKR2, SKR3, KR11, KR12, SKR11, SKR12, KR2, T, TRD	Black Blue Gray Green Orange Red	T8BK T8BE T8CY T8GN T8OE T8RD	10	.72	
	Universal ▲	T8U	7	5.70	
	White Yellow	T8WH T8YW	10	.70	
 1.375 in. Snap-in Mushroom knob for KR4 and SKR4 ◆	Black Blue Green Orange Red	K16B K16L K16G K16S K16R	1	42.80	
	Red ■	K16R05		47.60	
	Yellow	K16Y		42.80	
 2-1/4 in. Snap-in Mushroom knob for KR5 and SKR5 ★	Black Blue Green Orange Red	K17B K17L K17G K17S K17R	1	42.80	
	Red ■	K17R05		42.80	
	Yellow	K17Y		42.80	
 1-3/8 in. Screw-on Mushroom knob for KR24 and SKR24 ▼	Black Blue Green Orange Red Yellow	K92B K92L K92G K92S K92R K92Y	1	42.80	
	 2-1/4 in. Screw-on Mushroom knob for KR25 and SKR25 △	Black Blue Green Orange Red Yellow	K93B K93L K93G K93S K93R K93Y	1	42.80
		Amber Black □ Blue Clear Green Orange □ Red	A22 B23 L22 C22 G22 S23 R22	1	9.90
 Push-Pull Knobs for KR8, KR9, SKR8, SKR9 Operators	Red ▽	R2205		15.80	
	White Yellow	W22 Y22		9.90	
 Color Inserts for Dual Function Operators KR6, KR7, KR67 Standard Color	Black Green Red	B19 G19 R19	10	1.40	
	Universal ◇	U19		8.60	
 Caps for Illuminated Push Buttons K1L, K2L, K3L, SK1L, SK2L Knob for KR9R94	Amber Blue Clear Green Red White Yellow	A7 L7 C7 G7 R7 W7 Y7	1	9.90	
	Red	R94	1	9.90	
 Metal Knob for KR24	Red Green Black	K92RM K92GM K92BM	1	51.00	
 Metal Knob for KR25	Red Green Black	K93RM K93GM K93BM	1	63.00	
 Metal Knob for KR9 (40 mm)	Red Green Black	K94RM K94GM K94BM	1	51.00	
 Metal Knob for KR9 (60 mm)	Red Green Black	K95RM K95GM K95BM	1	63.00	

- ▲ Includes one each of the following color inserts: Black, Red, Green, Yellow, Orange, Blue, and White.
- "EMERGENCY STOP" is in raised letters and hot stamped white across the front of the mushroom button.
- ◆ The mushroom button cap listed here may be assembled to a 9001KR1U or SKR1U to form a 9001KR4 or SKR4.
- ★ The mushroom button cap listed here may be assembled to a 9001KR1U or SKR1U to form a 9001KR5 or SKR5.
- ▼ The mushroom button cap listed here may be assembled to a 9001KR20 to form a 9001KR24 or SKR24 to form a 9001SKR24.
- △ The mushroom button cap listed here may be assembled to a 9001KR20 to form a 9001KR25 or a SKR20 to form a 9001SKR25.
- These color caps are opaque and are for use on non-illuminated operators only.
- ◇ Includes two of each of the following color inserts: Black, Red, and Green.
- ★ May be used on KR8 and KR9 operators. Order mushroom button and K54 adapter (no charge) from page 19-84. Using the K54 adapter voids Type 6 rating.
- ▽ Red knob with "Push Emergency Stop" marked on top of knob.

Description	Color	Type	Package Qty.	\$ Price Each
 1-3/8 in. Mushroom Knob for Illuminated Push Buttons K2L, SK2L ☆	Amber Blue Clear Green Red White Yellow	A20 L20 C20 G20 R20 W20 Y20	1	9.90
	Amber Blue Clear Green Red White Yellow	A21 L21 C21 G21 R21 W21 Y21	1	9.90
 2-1/4 in. Mushroom Knob for Illuminated Push Buttons K2L, SK2L ☆	Amber Blue Clear Green Red White Yellow	A31 L31 C31 G31 R31 W31 Y31	1	9.90
	Amber Blue Clear Green Red White Yellow	A9 L9 C9 G9 R9 W9 Y9	1	9.90
 Domed Plastic Pilot Light Lens for KP, KT, SKP, SKT	Amber Blue Clear Green Red White Yellow	A6 L6 C6 G6 R6 W6 Y6	1	9.90
	Amber Black □ Blue Clear Green Orange □ Red White Yellow	A8 B11 L8 C8 G8 S11 R8 W8 Y8	1	9.90
 Glass Pilot Light Lens for KP, KT	Amber Black □ Blue Clear Green Orange □ Red White Yellow	A24 B25 L24 C24 G24 S25 R24 W24 Y24	1	9.90
	Black Blue Green Orange Red White Yellow	T5BK T5BE T5GN T5GN T5OE T5RD T5WH T5YW	10	1.40
 Standard Selector Switch Knob for K and SK Selector Switches	Cam	Type	\$ Price Each	
	 Gloved-Hand Selector Switch Knob for K and SK Selector Switches	B C D E F G H J L M	K13B K13C K13D K13E K13F K13G K13H K13J K13L K13M	6.30

NOTE: When ordering, add prefix 9001 to the catalog number.

Table 19.250: Ring Nuts

Used On	Type	Used On	Type	\$ Price
K1L	K44	SK1L	SK44	18.50
K30-K37	K45	—	—	4.40
K70-K73	K45	—	—	4.40
K20, K21, K22, K23	K45	SK20, SK21, SK22, SK23	SK45	4.40
K20, K21, K22, K23 ♦	SK46	SK20, SK21, SK22, SK23 ♦	SK46	4.40
K2L	K49	SK2L	SK49	4.40
K3L (complete)	K111	—	—	18.50
K3L (metal top only)	6515802701	—	—	12.00
KP, KTR	K41	SKP, SKTR	SK41	4.40
KR1	K41	SKR1	SK41	4.40
KR11	K42	SKR11	SK42	4.40
KR12 ▲	K42	SKR12 ▲	SK42	4.40
KR12 ■	K41	SKR12 ■	SK41	4.40
KR13, 14, 15	K55	—	—	4.40
KR2	K42	SKR2	SK42	4.40
KR20	K49	—	—	4.40
KR24	K49	—	—	4.40
KR25	K49	SKR25	SK49	4.40
KR3	K40	SKR3	SK40	4.40
KR4	K41	SKR4	SK41	4.40
KR5	K41	SKR5	SK41	4.40
KR6	K47	—	—	4.40
KR67	K47	—	—	4.40
KR7	K47	—	—	4.40
KR8	K58	SKR8	6509704401	4.40
KR9	K41	SKR9	SK41	4.40
KS	K45	SKS	SK45	4.40
KS ♦	SK46	SKS ♦	SK46	4.40
		SKRU11	SK41	4.40
		SKRU1,2,3,4,5,10	SK40	4.40
KT	K49	SKT	SK49	4.40

- ▲ Maintained button of two button operator.
- Momentary button of two button operator.
- ♦ Secondary ring nut (holds knob on selector switch or potentiometer).

Table 19.252: Repair Parts

Description	Part Number	\$ Price
E10 Key	2941101100	9.90
Gray cap for KR11, KR12, SKR11, or SKR12	3105217001	13.80
Clear plastic top (only) for 9001K44 & SK44	4487D63X1	7.95
Ring Nut	—	—
Gasket for Type K and SK Push-Pull Knob	6509701801	1.95
Gasket for Plastic Illuminated Lens	6509701901	3.90
Gasket for Type K and SK selector switch knob	3105406401	1.95
Black Compensating Gasket (Type K and SK Operators)	6509702001	3.90
Liner for Non-Illuminated Operators	6509704901	N/C
Locking Thrust Washer	6512231201	3.90
Nylon Spacer	6509705001	5.10
Locking Thrust Washer (Std. Type SK Operator)	6512240601	3.90
Push-Pull Mushroom Adapter ▼	K54	N/C
Rubber Boot for Joystick	6512243201	7.20
Knob on Joysticks without latch	4458D20X3	12.90
Knob for SK Potentiometer	3105404408	10.65
Fingersafe Cover for 9001KM	6508804101	3.00

▼ Allows Type -20 and -21 mushroom color caps to be used on push-pull operators. Use of 9001K54 voids Type 6 rating.

Table 19.253: KU Replacement Ring Nuts (Threaded Inside and Out)

Used On	Part Number	\$ Price
KU1 through KU8, KU27, KU37, KU47	3105204101	4.35
KU17, KU18	3105205901	10.65

Table 19.254: Interlock



For mechanically interlocking two push buttons so that only one button can be depressed at a time. A Type K3 attachment is furnished with the 9001 KR11, KR12, SKR11, SKR12, SKRU1 and SKRU11 operators. However, these are maintained operators and the K3 interlock serves to release one of the buttons when the other is depressed. When used with momentary contact buttons, the K3 interlock **does not** hold the buttons in the depressed position. It simply prevents pushing both buttons at the same time. The Type K3 interlock is mounted behind the operators. Operators not included.

Type	\$ Price
K3	28.65

Table 19.251: Replacement Lamps For Series A–F (black) Light Modules

Light Module Type	Lamp Number (ANSI)	Square D Replacement Lamps	
		Part Number	\$ Price
KM1	GE44★	—	—
KM2	GE1490	2550101003	12.45
KM3	GE44★	—	—
KM4	GE1490	2550101003	12.45
KM5	GE44★	—	—
KM6	GE44★	—	—
KM7	GE44★	—	—
KM8	GE44★	—	—
KM9	GE755	2550101020	12.45
KM11	CMDK1A5	2550105014	33.00
KM12	CMDK1A5	2550105014	33.00
KM13	CMDK1A5	2550105014	33.00
KM14	CMDK1A5	2550105014	33.00
KM15	CMDK1A5	2550105014	33.00
KM21	SYL12PSB	2550105003	16.50
KM22	SYL12PSB	2550105003	16.50
KM23	SYL28PSB	2550105008	16.50
KM25	SYL120PSB	2550105005	16.50
KM31	SYL6PSB	2550105007	16.50
KM32	SYL12PSB	2550105003	16.50
KM34	SYL24PSB	2550105004	16.50
KM35	SYL28PSB	2550105008	16.50
KM36	SYL48PSB	2550105009	16.50
KM37	SYL60PSB	2550105010	16.50
KM38	SYL120PSB	2550105005	16.50

★ GE44 and GE755 are interchangeable (GE755 gives longer life). If a GE44 lamp is ordered, a GE755 (2550101020) will be substituted. For a replacement lamp in a current series light module see the light module listing on page 19-82.

Table 19.255: Screwdriver



Used to tighten mounting screws on contact blocks and light modules.

Type	\$ Price
K69	35.50

Table 19.256: Wrenches



K95



K1

Where Used	Type	\$ Price
For tightening ring nuts on 22 and 30 mm control units	K95	42.75
For protective cap kits	K1	71.40

NOTE: When ordering, add prefix 9001 to the catalog number.

Table 19.257: Push Buttons—Single, with Contacts

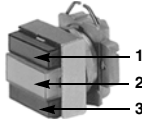


Description	Button Color	Legend Marking	Contacts	Voltage	Type	\$ Price
Non-Illuminated	Green	Start	1 N/O	—	KXRA133	64.00
	Red	Stop	1 N/C	—	KXRA134	64.00
	Amber	blank	2 C/O	—	KXRAAH2	138.00
	Green	blank	2 C/O	—	KXRAGH2	138.00
	Blue	blank	2 C/O	—	KXRALH2	138.00
Illuminated	Amber	blank	1 C/O	24	KXRB34AH1	184.00
	Green	blank	1 C/O	24	KXRB34GH1	184.00
	Red	blank	1 C/O	24	KXRB34RH1	184.00
	Amber	blank	1 C/O	110/120	KXRB1AH1	217.00
	Green	blank	1 C/O	110/120	KXRB1GH1	217.00
	Red	blank	1 C/O	110/120	KXRB1RH1	217.00

Table 19.258: Push Buttons—Dual, with Contacts



Description	Top Button (#1)	Lower Button (#2)	Contacts	Type	\$ Price
Momentary	Start (Green)	Stop (Red)	2 C/O	KXRC111	171.00
Momentary	Start (Green)	Stop (Red)	1 N/O, 1 N/C	KXRC136	129.00
Momentary	Up (Green)	Down (Green)	2 N/O	KXRD140	135.00
Momentary	blank (Blue)	blank (Blue)	2 N/O	KXRDLLH7	139.00
Maintained ▲	Start (Green)	Stop (Red)	1 C/O	KXRE115	171.00
Maintained ▲	On (Blue) ■	Off (Blue) ■	3 C/O	KXRELLH3	273.00
Maintained ▲	On (Blue) ■	Off (Blue) ■	3 C/O	KXRELLH3	273.00
Maintained ▲	On (Blue) ■	Off (Blue) ■	2 C/O	KXRELLH2	277.00

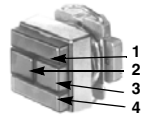


Pilot Light at 110–120 V, 50–60 Hz Transformer

Table 19.259: Push Buttons—Dual with One Pilot Light and Contacts

Description	Top Button (#1)	Middle Lens (#2)	Lower Button (#3)	Contacts	Voltage	Type	\$ Price
Momentary	Start (Green)	On (Red)	Stop (Red)	2 C/O	110/120	KXRG117	314.00
Momentary	Start (Green)	On (Red)	Stop (Red)	1 N/O, 1 N/C	110/120	KXRG137	270.00
Maintained ▲	Start (Green)	On (Red)	Stop (Red)	1 C/O	110/120	KXRJ119	329.00

Table 19.260: Push Buttons—Dual with Two Pilot Lights and Contacts



Pilot Lights at 110–120 V, 50–60 Hz Transformer

Description	Top Button (#1)	Left Lens (#2)	Right Lens (#3)	Lower Button (#4)	Contacts	Voltage	Type	\$ Price
Momentary	Start (Green)	On (Red)	Off (Green)	Stop (Red)	2 C/O	110/120	KXRL121	485.00
Momentary	Start (Green)	On (Red)	Off (Green)	Stop (Red)	1 N/O, 1 N/C	110/120	KXRL138	441.00
Momentary	Start (Green)	On (Red)	Off (Green)	Stop (Red)	2 C/O	24	KXRL34GRGRH2	451.00
Momentary	Start (Green)	On (Red)	Off (Green)	Stop (Red)	1 N/O, 1 N/C	24	KXRL34GRGRH37	494.00

- ▲ Maintained operators are mechanically interlocked
- Text is vertical



Table 19.261: Selector Switches—,with Contacts

Description	Legend	Knob	Contacts			Type	\$ Price
			1	0			
2-position, maintained	Off-On	Black	0	1		KXSA125	99.00
2-position, maintained	Off-On	Black	1	0		KXSA139	78.00
3-position, maintained	Hand-Off-Auto	Black	1	0	0	KXSD126	99.00
			0	0	1		

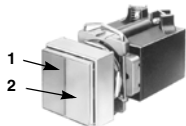


110–120 V,
50–60 Hz
Transformer

Table 19.262: Pilot Lights

Description	Voltage	Lens 1*	Lens 2*	Lens 3*	Lens 4*	Type	\$ Price
Single	24	Amber				KXPA35A	125.00
Single	24	Red				KXPA35R	125.00
Single	24	Green				KXPA35G	125.00
Single	24	White				KXPA35W	125.00
Single	110/120	Amber				KXPA1A	153.00
Single	110/120	Red				KXPA1R	153.00
Single	110/120	Green				KXPA1G	153.00
Single	110/120	White				KXPA1W	153.00
Dual	24	Amber	Amber			KXPB34AA	219.00
Dual	24	Red	Red			KXPB34RR	219.00
Dual	24	Green	Green			KXPB34GG	219.00
Dual	24	White	White			KXPB34WW	219.00
Dual	24	Red	Green			KXPB34RG	219.00
Dual	110/120	Amber	Amber			KXPB1AA	278.00
Dual	110/120	Red	Red			KXPB1RR	278.00
Dual	110/120	Green	Green			KXPB1GG	278.00
Dual	110/120	White	White			KXPB1WW	278.00
Dual	110/120	Red	Green			KXPB1RG	278.00
Quad	24	White	Amber	Green	Red	KXPC34WAGR	552.00
Quad	110/120	White	Amber	Green	Red	KXPC1WAGR	552.00
Quad	110/120	White	Blue	Green	Red	KXPC1WLGR	552.00

* Lenses are blank (no markings)



110–120 V, 50–60 Hz.
Transformer



110–120 V, 50–60 Hz
Transformer



Table 19.263: Potentiometers

Description	Power	Resistance	Type	Price
Single	2 W	3.2 kΩ	KXBB06	287.00
Single	2 W	5 kΩ	KXBB07	287.00
Single	2 W	10 kΩ	KXBB08	287.00
Tandem	2 W	5 kΩ / 5 kΩ	KXBD83	399.00

Table 19.264: Push Buttons—without Contacts ▲



Push Button	Action	Lens Color (1)	Lens Color (2)	Type	Price
Single Push Button					
 Non-Illuminated	Momentary	Amber	—	KXRAA	38.60
		Green	—	KXRAG	38.60
		Blue	—	KXRAL	38.60
		Red	—	KXRAR	38.60
		White	—	KXRAW	38.60
Illuminated 24 V	Momentary	Amber	—	KXRB35A	125.00
		Green	—	KXRB35G	125.00
		Blue	—	KXRB35L	125.00
		Red	—	KXRB35R	125.00
		White	—	KXRB35W	125.00
Illuminated 110/120 V	Momentary	Amber	—	KXRB38A	125.00
		Green	—	KXRB38G	125.00
		Blue	—	KXRB38L	125.00
		Red	—	KXRB38R	125.00
		White	—	KXRB38W	125.00
Dual Push Button					
 Non-Illuminated	Momentary + Interlock	Green	Red	KXRCGR	77.00
		White	White	KXRCWW	77.00
		Green	Green	KXRCGG	77.00
	Maintained + Interlock	Green	Red	KXREGR	120.00
		White	White	KXREWW	120.00
		Green	Green	KXREGG	120.00

Table 19.265: Dual Push Button with Pilot Light—without Contacts ▲

Action	Voltage	Lens Color (1)	Lens Color (2)	Lens Color (3)	Lens Color (4)	Type	Price
With One Pilot Light							
Momentary	24 Vac/dc	Red	White	Green	—	KXRG35RWG	188.00
	24 Vac/dc	Green	White	Green	—	KXRG35GWG	188.00
	110/120 Vac/dc	Red	White	Green	—	KXRG38RWG	188.00
	110/120 Vac/dc	Green	White	Green	—	KXRG38GWG	188.00
Momentary + Interlock	24 Vac/dc	Red	White	Green	—	KXRH35RWG	221.00
	24 Vac/dc	Green	White	Green	—	KXRH354GWG	221.00
	110/120 Vac/dc	Red	White	Green	—	KXRH38RWG	221.00
110/120 Vac/dc	Green	White	Green	—	KXRH38GWG	221.00	
	24 Vac/dc	Red	White	Green	—	KXRJ35RWG	243.00
	24 Vac/dc	Green	White	Green	—	KXRJ35GWG	243.00
110/120 Vac/dc	Red	White	Green	—	KXRJ38RWG	243.00	
	Green	White	Green	—	KXRJ38GWG	243.00	
With Two Pilot Lights							
Momentary	24 Vac/dc	Red	White	White	Green	KXRL35RWWG	324.00
	24 Vac/dc	Red	Red	Green	Green	KXRL35GGRR	324.00
	110/120 Vac/dc	Red	White	White	Green	KXRL38RWWG	324.00
	110/120 Vac/dc	Red	Red	Green	Green	KXRL38GGRR	324.00
Momentary + Interlock	24 Vac/dc	Red	White	White	Green	KXRM35RWWG	368.00
	24 Vac/dc	Red	Red	Green	Green	KXRM35RRGG	368.00
	110/120 Vac/dc	Red	White	White	Green	KXRM38RWWG	368.00
	110/120 Vac/dc	Red	Red	Green	Green	KXRM38RRGG	368.00

▲ Order contacts separately (See Table 19.267 on page 93)

Accessories Page 19-95

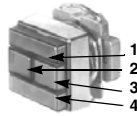
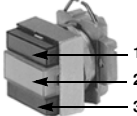




Table 19.266: Selectors—without Contacts ▲

Description	Voltage	Knob Color	Type	\$ Price	
2-Position, Maintained	Non-Illuminated	—	Black	KXSAEB	53.00
	Illuminated	24 Vac/dc	Red	KXSJE35R	138.00
	Illuminated	24 Vac/dc	Green	KXSJE35G	138.00
	Illuminated	24 Vac/dc	White	KXSJE35W	138.00
	Illuminated	120 Vac/dc	Red	KXSJE38R	138.00
	Illuminated	120 Vac/dc	Green	KXSJE38G	138.00
	Illuminated	120 Vac/dc	White	KXSJE38W	138.00
	Key (Withdraw L)	—	N/A	KXSRE1	140.00
	Key (Withdraw R)	—	N/A	KXSRE2	138.00
Key (Withdraw Both)	—	N/A	KXSRE3	138.00	
3-Position, Maintained	Non-Illuminated	—	Black	KXSDCB	53.00
	Key (Withdraw C)	—	N/A	KXSVC5	138.00
	Key (Withdraw All)	—	N/A	KXSVC10	138.00
4-Position, Maintained	Non-Illuminated	—	Black	KXSHHB	58.00

▲ Order contacts separately (See Table 19.267)

Table 19.267: Contact Blocks—Purchase Separately







Description	Type	\$ Price
 (Clear Cover)	1 N/O, 1 N/C KA1	42.80
 (Green Cover)	1 N/O KA2	21.50
 (Red Cover)	1 N/C KA3	21.50
 (Clear Cover)	1 N/C, 1 N/O (Early Make) KA4	42.80
 (Red Cover)	1 N/C (Late Break) KA5	21.50
 (Green Cover)	1 N/O (Early Make) KA6	21.50

Table 19.273: Closing Plate


	Type	\$ Price
 UL Types 4, 13/NEMA 4, 13 Square Closing Plate (Chrome Plated) Same size as KX bezel	KXAK52	14.30

Table 19.274: Boots


	For Use On	Type	\$ Price
	All KX** push buttons and pilot lights	KXAKU7	28.70
	All KX** selector switches and potentiometers	KXAKU17B	42.80

Table 19.275: Shrouds


Description	For Use On	Color	Type	\$ Price
	All push buttons and pilot lights	Red	KXAK41R	7.20
		Black	KXAK41B	7.20
Short Shroud	Any KX operator	Red	KXAK40R	7.20
		Black	KXAK40B	7.20

Table 19.276: Lamp and Lens Removal Kit














	Type	\$ Price
 Used to remove lamp and lens on all illuminated operators and pilot lights.	KXALLRT	21.50

Table 19.277: Button Covers

Description	For Use On	Color	Type	Code	\$ Price
 Includes 2-KXN200	KXPB KXTD	Red Green Amber Blue White	KXAC28▲ KXAC28▲ KXAC28▲ KXAC28▲ KXAC28▲	R■ G■ A■ L■ W■	9.90
 Includes KXN400	KXTC (Position 1 & 4)	Red Green Amber Blue White	KXAR4 KXAG4 KXAA4 KXAL4 KXAW4	R G A L W	9.90
 Includes KXN500	KXTC (Position 2 & 3)	Red Green Amber Blue White	KXAR5 KXAG5 KXAA5 KXAL5 KXAW5	R G A L W	9.90
 Includes 1-KXN100	KXPC	Red Green Amber Blue White	KXAC48◆ KXAC48◆ KXAC48◆ KXAC48◆ KXAC48◆	R★ G★ A★ L★ W★	9.90
 Includes KXN100	KXRA KXRB	Red Green Amber Blue White	KXAR1 KXAG1 KXAA1 KXAL1 KXAW1	R G A L W	6.60
 Includes KXN100	KXRN KXRP	Red Green Amber Blue White	KXARM1 KXAGM1 KXAA1 KXALM1 KXAWM1	R G A L W	17.10
 Includes KXN200	KXRC KXRD KXRE KXRF	Red Green Amber Blue White	KXAR2 KXAG2 KXAA2 KXAL2 KXAW2	R G A L W	9.90
 Includes KXN300	KXRG (Position 2) KXRH (Position 2) KXRJ (Position 2) KXRK (Position 2)	Red Green Amber Blue White	KXAR3 KXAG3 KXAA3 KXAL3 KXAW3	R G A L W	9.90
 Includes KXN400	KXRG (Position 1 & 3) KXRH (Position 1 & 3) KXRJ (Position 1 & 3) KXRK (Position 1 & 3) KXRL (Position 1 & 4) KXRM (Position 1 & 4)	Red Green Amber Blue White	KXAR4 KXAG4 KXAA4 KXAL4 KXAW4	R G A L W	9.90
 Includes KXN500	KXRL (Position 2 & 3) KXRM (Position 2 & 3)	Red Green Amber Blue White	KXAR5 KXAG5 KXAA5 KXAL5 KXAW5	R G A L W	9.90
 Includes KXN100	KXPA	Red Green Amber Blue White	KXAR8 KXAG8 KXAA8 KXAL8 KXAW8	R G A L W	9.90
 Includes KXN100	KXTA KXTB	Red Green Amber Blue White	KXAR1 KXAG1 KXAA1 KXAL1 KXAW1	R G A L W	9.90

- ▲ Each KXAC28 includes a clear cover and 1 each of all colors. If the same color is required for position #1 and #2 of the KXPB operator, order 2 of Type KXAC28.
- When specifying color codes—the first will be installed in #1 and the second in #2. The price for BOTH color codes is **\$6.60**.
- ◆ Each KXAC48 includes a clear cover and 1 each of all colors. If the same color is required for position #1 and #2 of the KXPC operator, order 2 of Type KXAC48.
- ★ When specifying color codes—the first will be installed in #1, the second in #2, the third in #3 and the fourth in #4. The price for ALL FOUR color codes is **\$6.60**.
- ▼ Two required per operator. When ordering an assembled operator—specify two code numbers. The first code will be assembled into #1 and the second code will be assembled into #2.

NOTE: When ordering, add prefix 9001 to the catalog number.



XALD101

Table 19.278: Start or Stop Function
Polycarbonate; Light gray base, RAL7035; Dark gray lid, RAL7016

Description	Type of Push	Type of Contact		Marking	Catalog Number	\$ Price
		N.O.	N.C.			
Marking on Legend Holder						
1 momentary push button	Flush black	1	—	Start	XALD101	73.00
	Flush red	—	1	Stop	XALD111	73.00
Marking on Legend Holder						
1 mushroom head push button Ø 40 mm, momentary	Red	—	1	Emergency stop on red legend	XALD164	84.00



XALK174

Table 19.279: Emergency Stop or Emergency Off Function
Polycarbonate; Light gray base, RAL7035; Yellow lid, RAL1012

Description	Type	Type of Contact		Catalog Number	\$ Price
		N.O.	N.C.		
1 mushroom head push button Ø 40 mm, red Turn-to-release	Standard ▲	—	1	XALK174	117.00
	Trigger action ■	—	1	XALK178	147.00
1 mushroom head push button Ø 40 mm, red Key release (Key No. 455)	Standard ▲	—	1	XALK184	147.00
	Trigger action ■	—	1	XALK188	147.00
1 mushroom head push button Ø 40 mm, red Push-pull	Standard ▲	—	1	XALK194	99.00

▲ Emergency Off (IEC 60364-5-53)
■ Emergency Stop (EN / IEC 13850)



XALD211

Table 19.280: Start-Stop Function
Polycarbonate; Light gray base, RAL7035; Dark gray lid, RAL7016

Description	Type of Push	Type of Contact		Text	Catalog Number	\$ Price
		N.O.	N.C.			
2 momentary push buttons	1 flush black	1	—	Start	XALD211	73.00
	1 flush red	—	1	Stop		
	1 flush black	1	—	Forward	XALD221	73.00
	1 flush black	1	—	Reverse		

Table 19.281: Three Function
Polycarbonate; Light gray base, RAL7035; Dark gray lid, RAL7016

Description	Type of Push	Type of Contact		Text	Catalog Number	\$ Price
		N.O.	N.C.			
3 momentary push buttons (no markings)	1 flush black 1 flush red 1 flush black	1	—	Open	XALD341	143.00
		—	1	Stop		
		1	—	Close		
		1	—	Forward	XALD311	143.00
		—	1	Stop		
		1	—	Reverse		
		1	—	Up	XALD321	143.00
		—	1	Stop		
		1	—	Down		



XALD321



XALD02

Table 19.282: Empty Enclosures ▲

Polycarbonate

Description	Number of Holes	Catalog Number	\$ Price
For normal environments, CSA approved and UL Listed (with stainless steel lid mounting screws)			
Light gray base RAL7035 Dark gray lid RAL7016	1	XALD01	32.80
	2	XALD02	38.20
	3	XALD03	49.00
	4	XALD04	71.00
	5	XALD05	87.00
Light gray base RAL7035 Yellow lid RAL1012	1	XALK01	35.40

Table 19.283: Electrical Block and Accessories (for mounting on metal plate at back of enclosure) ▲

Description	Type	Color	Catalog Number	\$ Price
Electrical blocks with screw clamp terminal connections				
Metal-plate-mounting contact blocks	N.O. contact	—	ZENL1111	16.60
	N.C. contact	—	ZENL1121	16.40
Light blocks with Protected LED	24 Vac/Vdc	White	ZALVB1	52.00
		Green	ZALVB3	
		Red	ZALVB4	
		Yellow	ZALVB5	
		Blue	ZALVB6	
		120 Vac	White	
	Green		ZALVG3	
	Red		ZALVG4	
	Yellow		ZALVG5	
	Blue		ZALVG6	
	230 Vac		White	ZALVM1
		Green	ZALVM3	
		Red	ZALVM4	
		Yellow	ZALVM5	
		Blue	ZALVM6	

▲ For customer assembly using XB5 operators and standard screw-terminal contact blocks, see Push Buttons—ZB5 22 mm starting on page 19-45. Either mounting method can be used: contact block ZENL mounting on metal plate, or contact block ZBE mounting on operator with mounting collar.



ZENL1111



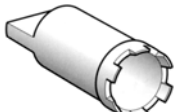
ZALV**



ZB5SZ3

Table 19.284: Accessories for electrical blocks

Description	Application	Catalog Number	\$ Price
Blanking plug	Ø 22 mm units	ZB5SZ3	11.00
Nut	Head mounting	ZB5AZ901	4.40
Grounding terminal	Grounding	XALZ09	5.40
Key	For tightening nut	ZB5AZ905	12.40



ZB5AZ905

Table 19.285: Undrilled Enclosures, Glass-Reinforced Polyester

Type		H x W Dimensions		Catalog Number	\$ Price
		IN	mm		
NEMA 4, 4X, 13 Usable depth 3.27 in. (83 mm)	Without hinges	3.34 x 5.75	85 x 146	XAPA1100	110.00
		3.34 x 8.90	85 x 226	XAPA2100	180.00
	5.95 x 9.49	151 x 241	XAPA3100	284.00	
	With hinges	5.95 x 9.49	151 x 241	XAPA4100	378.00
Undrilled Grounding Plate	Sheet steel with ground screw	For XAPA1100		XAPZ100	22.00
		For XAPA2100		XAPZ200	24.60
		For XAPA3100 and 4100		XAPZ300	32.00



XAPA1100

Table 19.286: Drilled Insulated Enclosures, Glass-Reinforced Polyester ■

Type	Number of Knockouts 22 mm	Number of Rows		H x W Dimensions		Catalog Number	\$ Price
		Vertical	Horizontal	IN	mm		
NEMA 4, 4X, 13 Usable depth 3.27 in. (83 mm) 1.58 in. (40 mm) centerline spacing of holes	1	1	1	3.35 X 5.75	85 X 146	XAPA1110	114.00
	2	1	2	3.35 X 5.75	85 X 146	XAPA1120	114.00
	4	2	2	3.35 X 5.75	85 X 146	XAPA1104	114.00
	8	2	4	3.35 X 8.90	85 X 226	XAPA2108	182.00
	16	4	4	5.94 X 9.49	151 X 241	XAPA3116	390.00
Drilled Grounding Plate	Sheet steel with ground screw		For XAPA1110		XAPZ110	22.00	
			For XAPA1120		XAPZ120	22.00	
			For XAPA1104		XAPZ104	22.00	
			For XAPA2108		XAPZ208	24.60	
			For XAPA3116		XAPZ316	32.00	



XAPA1104

■ Uses standard XB5 products from pages 19-42 through 19-62. Do not use ZENL style contact blocks.



XAPG39400

Table 19.287: Undrilled Die Cast Enclosures (Painted Gray RAL7032)

Type	Material	Usable Depth		H x W x D Dimensions		Catalog Number	\$ Price
		IN	mm	IN	mm		
NEMA 4, 13	Zinc	1.93	49	3.15 x 3.15 x 2.03	80 x 80 x 51.5	XAPG19100	110.00
				5.12 x 3.15 x 2.03	130 x 80 x 51.5	XAPG29100	120.00
				6.89 x 3.15 x 2.03	175 x 80 x 51.5	XAPG39100	142.00
		2.93	74.5	3.15 x 3.15 x 3.03	80 x 80 x 77	XAPG19400	110.00
				5.12 x 3.15 x 3.03	130 x 80 x 77	XAPG29400	120.00
				6.89 x 3.15 x 3.03	175 x 80 x 77	XAPG39400	142.00
	Aluminum	2.93	2.93	8.66 x 3.15 x 3.03	220 x 80 x 77	XAPG49400	174.00
				12.20 x 3.35 x 3.03	310 x 85 x 77	XAPG59400	262.00



XAPG29703

Table 19.288: Drilled Die Cast Enclosures (Painted Gray RAL7032) ▲

Type	Material	Usable Depth		Number of 22 mm holes	H x W x D Dimensions		Catalog Number	\$ Price
		IN	mm		IN	mm		
NEMA 4, 13 1.18 in. (30 mm) centerline spacing of holes for horizontal mount	Zinc	1.93	49	2	3.15 x 3.15 x 2.03	80 x 80 x 51.5	XAPG19702	120.00
				3	5.12 x 3.15 x 2.03	130 x 80 x 51.5	XAPG29703	142.00
				4	6.90 x 3.15 x 2.03	175 x 80 x 51.5	XAPG39704	174.00
		2.93	74.5	2	3.15 x 3.15 x 3.03	80 x 80 x 77	XAPG19802	120.00
				3	5.12 x 3.15 x 3.03	130 x 80 x 77	XAPG29803	142.00
				4	6.90 x 3.15 x 3.03	175 x 80 x 77	XAPG39804	174.00
NEMA 4, 13 1.58 in. (40 mm) centerline spacing of holes for vertical mount	Zinc	1.93	1.93	1	3.15 x 3.15 x 2.03	80 x 80 x 51.5	XAPG19201	110.00
				2	5.12 x 3.15 x 2.03	130 x 80 x 51.5	XAPG29202	120.00
				3	6.90 x 3.15 x 2.03	175 x 80 x 51.5	XAPG39203	142.00
		2.93	74.5	1	3.15 x 3.15 x 3.03	80 x 80 x 77	XAPG19501	110.00
				2	5.12 x 3.15 x 3.03	130 x 80 x 77	XAPG29502	120.00
				3	6.90 x 3.15 x 3.03	175 x 80 x 77	XAPG39503	142.00
	Aluminum	2.93	74.5	4	8.66 x 3.15 x 3.03	220 x 80 x 77	XAPG49504	174.00
				5	12.20 x 3.35 x 3.03	310 x 85 x 77	XAPG59505	268.00

▲ Can use either XB4 or XB5 products.



XAPE302

Table 19.289: Drilled Flush Plates ■

Type	Material	Number of 22 mm holes	H x W x D Dimensions		Catalog Number	\$ Price
			IN	mm		
NEMA 4, 13 1.18 in. (30 mm) centerline spacing of holes	Anodized Aluminum	1	2.83 x 2.83	72 x 72	XAPE301	52.00
		2	4.13 x 2.83	105 x 72	XAPE302	60.00
		3	5.43 x 2.83	138 x 72	XAPE303	68.00
		4	6.73 x 2.83	171 x 72	XAPE304	82.00
		5	8.03 x 2.83	204 x 72	XAPE305	98.00

■ Can use either XB4 or XB5 products.



XAPE303

Table 19.290: Optional Back Box (for finger protection, if required)

Type	Material	For Use With	Catalog Number	\$ Price
Protective rear covers	Insulating Fiberglass	Flush plate XAPE301	XAPE901	32.80
		Flush plate XAPE302	XAPE902	
		Flush plate XAPE303	XAPE903	
		Flush plate XAPE304	XAPE904	
		Flush plate XAPE305	XAPE905	60.00

Table 19.291: Control Stations

No. of Buttons	Nameplate Markings and Features	Contact Symbol ▲	Surface Mounting NEMA1		Stainless Steel Flush Plate ■		Watertight and Dusttight NEMA4		For Hazardous Locations NEMA 7 & 9 ♦	
			Type	\$ Price	Type	\$ Price	Type	\$ Price	Type	\$ Price
1	Start	1	BG101	86.00	BF101	116.00	BW146	270.00	BR101	363.00
	Stop	3	BG102	86.00	BF102	116.00	BW147	270.00	—	—
	Stop (Mushroom Button)	3	BG103	99.00	—	—	BW151	287.00	BR103	378.00
	Stop (Lockout)	3	BG104	129.00	—	—	BW148	270.00	BR104	363.00
	Universal (w/o legend insert)	16	BG107	83.00	BF107	111.00	BW159	269.00	BR107	360.00
	Off-On (Selector Switch)	19	BG111	86.00	—	—	—	—	—	—
	Hand-Off-Auto (Selector Switch)	17	BG112	86.00	—	—	—	—	—	—
	Universal Selector Switch (w/o legend insert)	19 or 17	BG114	83.00	—	—	—	—	—	—
2	Start-Stop	145	BG201	86.00	BF201	116.00	BW240	270.00	BR204	363.00
	Start-Stop (for latching Applications)	146	BG202	107.00	—	—	BW252	270.00	BR202	363.00
	Start-Stop (Mushroom on Stop)	145	BG203	99.00	—	—	BW250	287.00	BR203	378.00
	Start-Stop (Lockout on Stop)	145	BG204	129.00	—	—	BW241	270.00	BR204	363.00
	Start-Stop (Mushroom on both)	145	BG205	116.00	—	—	BW246	300.00	BR205	392.00
	Forward-Reverse	146	BG206	107.00	—	—	BW242	270.00	—	—
	Open-Close	146	BG207	107.00	—	—	BW244	270.00	—	—
	Up-Down	146	BG208	107.00	BF208	135.00	BW243	270.00	BR208	363.00
	Raise-Lower	146	BG209	107.00	—	—	BW253	270.00	—	—
	On-Off	145	BG210	86.00	BF210	116.00	BW245	270.00	—	—
	On-Off	146	BG211	107.00	BF211	135.00	BW254	270.00	—	—
	Universal (w/o legend inserts)	25	BG214	78.00	—	—	BW260	264.00	BR214	356.00
3	Start-Stop (Maintained Contact)	10	BG215	129.00	BF215	158.00	BW255	314.00	BR215	405.00
	On -Off (Maintained Contact)	10	BG216	129.00	BF216	158.00	BW256	314.00	BR216	405.00
	Universal (Maintained contact w/o legend inserts)	10	BG218	122.00	—	—	—	—	BR218	399.00
	Fast-Slow-Stop	109	BG301	171.00	—	—	—	—	—	—
	Forward-Reverse-Stop	109	BG302	171.00	—	—	—	—	—	—
	Opn-Close-Stop	109	BG303	171.00	BF303	207.00	—	—	—	—
3	Raise-Lower-Stop	109	BG304	171.00	—	—	—	—	—	—
	Up-Down-Stop	109	BG305	171.00	BF305	207.00	—	—	—	—
	Start-Jog-Stop	109	BG316	171.00	—	—	—	—	—	—
	Universal (w/o legend inserts)	8	BG307	162.00	—	—	—	—	—	—
	Start-Stop, Red Pilot Light: 120Vac/dc	145 & 121	BG308	314.00	BF308	342.00	—	—	—	—



NEMA 4 Type BW243

- ▲ See Table 19.294 on page 19-100.
- Uses standard 2.0 or 2.13 in. deep wall boxes, single gang for Types BF1 and BF2, two gang for Type BF3
- ♦ Also rated for Class I, Division I and II, Groups B, C, or D; Class II, Division I and II, Groups E, F, or G

Table 19.292: Accessories

Description	Color	Type	\$ Price
Mushroom Caps for NEMA 1	Red	B301	14.30
Mushroom Caps for NEMA 4	Red	B303	14.30
Lockout Kit for NEMA 1	—	B321	42.80
Pilot Light Lenses, NEMA 1 Surface Mount	Red	B331	10.70
Pilot Light Lenses, NEMA 1 Surface Mount	Green	B332	10.70
Pilot Light Lenses, NEMA 1 Flush Mount	Red	B341	10.70
Pilot Light Lenses, NEMA 1 Flush Mount	Green	B342	10.70
Replacement Covers for BW240	—	BWD219	17.90
Replacement Covers for BW241 ★	—	BWD220	35.60
Replacement Covers for BW242-BW260	—	BWD219	17.90

★ Includes factory installed lockout on the cover.



NEMA 7 and 9 Type BR103

Table 19.293: Interchangeable Push Button Legend Inserts

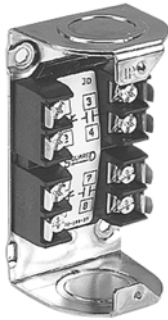
Marking	For NEMA 1 Surface Mount	For NEMA 4 or 7/9 Lever Type	For NEMA 4 Round Button	For NEMA4 Mushroom Button	\$ Price
Start	B101	B161	B259	B282	3.60
Stop	B102	B162	B260	B283	3.60
Fast	B103	—	—	—	3.60
Slow	B104	—	—	—	3.60
Forward	B105	—	B255	—	3.60
Reverse	B106	—	B256	—	3.60
Open	B107	—	B263	—	3.60
Close	B108	—	B264	—	3.60
Raise	B109	—	B261	—	3.60
Lower	B110	—	B262	—	3.60
Up	B111	—	B253	B276	3.60
Down	B112	—	B254	B277	3.60
On	B115	B175	B257	—	3.60
Off	B116	B176	B258	—	3.60
Hand	B117	—	B265	—	3.60
Auto	B118	—	B266	—	3.60
Jog	B119	—	—	—	3.60
Blank (Black)	B129	B189	B251	B251	3.60
Blank (Red)	B129R	B189R	B252	B252	3.60

NOTE: Replacement case/covers are not available for Type BR devices.

Replacement Interiors page 19-100
Electrical Contact Ratings page 19-100



Type BGC214
(Type BGC contact block assemblies include cover.)



Type BGB214



BOC361

Table 19.294: Replacement Interiors For Type B Standard Duty Push Button Stations

For Control Station Types	Contact Symbol	Contact Block Assembly ▲ Type	\$ Price	Terminal Block Wiring Receptacle Type	\$ Price
BF101–BF107	16	BOC107	39.20	BFB107	42.80
BF111–BF114	19 or 17	BOC114	39.20	BFB114	42.80
BF121–BF123	121	BOC123	147.00	BFB123	42.80
BF201–BF214	25	BOC214	35.60	BFB214	42.80
BF215–BF218	10	BOC218	78.00	BFB214	42.80
BF221–BF224	7 or 19 & 121	BOC224	234.00	BFB224	64.00
BF225–BF226	17 or 19 & 16	BOC226	57.00	BFB226	64.00
BF301–BF307	8	BOC214 & BOC107	35.60 & 39.20	BFB214 & BFB107	42.80 & 42.80
BF308–BF309	25 & 121	BOC214 & BOC123	35.60 & 147.00	BFB214 & BFB123	42.80 & 42.80
BF310–BF313	10 & 121	BOC218 & BOC123	78.00 & 147.00	BFB214 & BFB123	42.80 & 42.80
BF314–BF315	17 or 19 & 25	BOC214 & BOC114	35.60 & 39.20	BFB214 & BFB114	42.80 & 42.80
BG101–BG107	16	BGC107	39.20	BGB107	42.80
BG111–BG114	17 or 19	BGC114	39.20	BGB114	42.80
BG121–BG123	121	BGC123	147.00	BGB123	42.80
BG201–BG214	25	BGC214	35.60	BGB214	42.80
BG215–BG218	10	BGC218	78.00	BGB214	42.80
BG221–BG224	17 or 19 & 121	BGC224	234.00	BGB224	64.00
BG225–BG226	17 or 19 & 16	BGC226	57.00	BGB226	64.00
BG301–BG307	8	BGC307	39.20	BGB307	57.00
BG308–BG309	25 & 121	BGC309	212.00	BGB309	86.00
BG310–BG313	10 & 121	BGC313	242.00	BGB309	86.00
BG314–BG315	17 or 19 & 25	BGC315	75.00	BGB315	86.00
BR101–BR107	16	BOC107	39.20	BFB107	42.80
BR202–BR214	25	BOC214	35.60	BFB214	42.80
BR215–BR219	10	BOC218	78.00	BFB214	42.80
BW101–BW107	16	BOC107	39.20	BFB107	42.80
BW202–BW214	25	BOC214	35.60	BFB214	42.80
BW215–BW218	10	BOC218	78.00	BFB214	42.80
BW146–BW159	16	BOC360	126.00		
BW240–BW260	25	BOC361	126.00		
BW255–BW258	10	BOC362	126.00		

Note: Contact block assemblies for all Type BG stations include cover and contact block. Replacement contact block assemblies and terminal block wiring receptacles for push buttons have provision for 1 N.O. & 1 N.C. circuit on each button. Unneeded circuits need not be wired.

▲ Order separate legend plates, if required, from listing on page 19-99.

“C” Shaped Mounting Bracket for 9001BR Interior

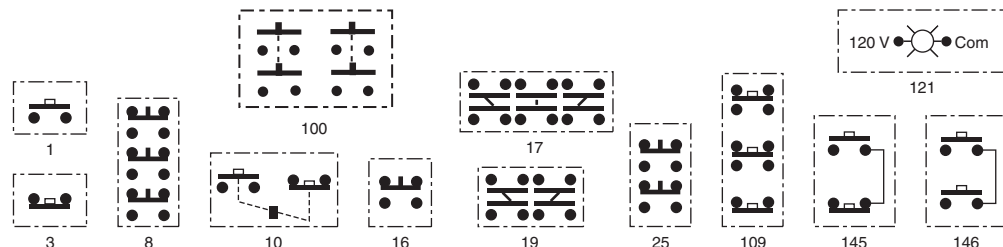
Catalog Number	\$ Price
3110112001	8.70

Table 19.295: Electrical Contact Ratings ■

AC—NEMA B600						DC—NEMA P600			
Volts	Inductive 35% Power Factor				Continuous Carrying Amperes	Resistive 75% Power Factor	Volts	Inductive and Resistive	
	Make		Break					Make and Break Amperes	Continuous Carrying Amperes
	A	VA	A	VA					
120	30.5	3600	3.75	360	5	5	120	1.1	5
240	15	3600	1.5	360	5	5	240	0.55	5
480	7.5	3600	.75	360	5	5	480	0.2	5
600	6	3600	.6	360	5	5	600		5

■ OSHA Regulation, Section 1910.70, Overhead and Gantry Cranes, limits the voltage of pendant push buttons to 150 Vac or 300 Vdc.

Contact Symbols



NOTE: When ordering, add prefix 9001 to the catalog number

Table 19.296: Empty Enclosures (for Customer Assembly)

No of Holes	Sheet Steel		Die Cast Zinc		Stainless Steel (304)		Polymeric (Plastic)	
	Type	\$ Price	Type	\$ Price	Type	\$ Price	Type	\$ Price
1	KYAF1	143.00	KY1	143.00	KYSS1	257.00	SKY1	171.00
2	KYAF2	158.00	KY2 ▲	158.00	KYSS2	270.00	SKY2	201.00
3	KYAF3	185.00	KY3 ▲	185.00	KYSS3	372.00	SKY3	228.00
4	KYAF4	228.00	KY4 ▲	228.00	KYSS4	485.00	SKY4	269.00
6	KYAF6	287.00	KY6	287.00	KYSS6	714.00	SKY6	287.00

▲ Only KN200 series legend plates will fit upright on these enclosures with their long axis vertical.



KYG1Y

Table 19.297: Guarded Enclosures

No of Holes	UL Types 1, 3, 4 and 13/ NEMA 1, 3, 4 and 13			
	Die Cast Zinc			
	Cover Color	Box Color	Type	\$ Price
1	Gray	Gray	KYG1	150.00
1	Yellow	Gray	KYG1Y	



K26

Table 19.298: Stainless Steel (302) NEMA 1 Flush Plates ■

No of Holes	Description	Type	\$ Price
1	1 Hole flush plate, cover screws, insulating liners	K25	28.70
2	2 Hole flush plate, cover screws, insulating liners	K26	42.80
3	3 Hole flush plate, cover screws, insulating liners	K27	57.00
4	4 Hole flush plate, cover screws, insulating liners	K28	86.00

■ To be used with a standard 2 x 3 in. general purpose switch box. A 2.5 in. deep switch box should be used if two Type KA contact blocks are mounted side by side. If two Type KA contact blocks are mounted in tandem, a 3.5 in. deep box should be used.

Table 19.299: Assembled Control Stations

No of Holes	Operator Style and Features	Type	\$ Price	Consists of				
				Enclosure	Operators	Contact Blocks	Legend Plates	
UL Types 1, 3, 4 and 13/NEMA 1, 3, 4 and 13 Die Cast Zinc Enclosure▲								
1	Selector Switch (3 Pos Maintained)	KYK111	243.	KY1	KS43B	KA1	Hand-Off-Auto	
	Selector Switch (2 Pos Maintained)	KYK110	243.	KY1	KS11B	KA1	Off-On	
	Push Button (Momentary)	KYK11	228.	KY1	KR1B	KA1	Start	
	Push Button (Momentary)	KYK13	228.	KY1	KR1R	KA1	Stop	
	Mushroom Button (Momentary)	KYK14	270.	KY1	KR4R	KA1	Stop	
	Push Button (with Lockout)	KYK15	270.	KY1	KR3R, K4	KA1	Stop	
	Break Glass Operator	KYK116	329.	KY1	K15	KA1	To Stop—Break Glass	
	Break Glass Operator (Red Enclosure)	KYK117	329.	KY1S1	K15	KA1	To Stop—Break Glass	
	2 Push Buttons (Lockout on Stop)	KYK224	372.	KY2	KR1B, KR3R, K4	KA1, KA1	Jog-Stop	
	2 Push Buttons	KYK218	329.	KY2	KR1B, KR3R	KA1, KA1	On-Off	
	2 Push Buttons	KYK26	329.	KY2	KR1B, KR1B	KA1, KA1	Open-Close	
	2 Push Buttons	KYK25	329.	KY2	KR1B, KR1B	KA1, KA1	Up-Down	
	2 Push Buttons	KYK21	329.	KY2	KR1B, KR3R	KA1, KA1	Start-Stop	
	2 Push Buttons (with Sealed Contacts) ★	KYK223	527.	KY2	KR1B, KR3R	KA51, KA51	Start-Stop	
2	2 Push Buttons (Lockout on Stop)	KYK23	372.	KY2	KR1B, KR3R, K4	KA1, KA1	Start-Stop	
	2 Push Buttons (Maintained/Interlocked)	KYK27	329.	KY2	KR11GR	KA1	Start-Stop	
	1 Push Button, 1 Mushroom Button	KYK22	372.	KY2	KR1B, KR4R	KA1, KA1	Start-Stop	
	3 Push Buttons	KYK31	441.	KY3	KR1B, KR1B, KR3R	KA1, KA1, KA1	Forward; Reverse; Stop	
	3 Push Buttons (Lockout on Stop)	KYK326	485.	KY3	KR1B, KR1B, KR3R, K4	KA1, KA1, KA1	Forward; Reverse; Stop	
	3 Push Buttons (With Sealed Contacts & Lockout on Stop) ★	KYK322	783.	KY3	KR1B, KR1B, KR3R, K4	KA51, KA51, KA51	Forward; Reverse; Stop	
	3 Push Buttons	KYK33	441.	KY3	KR1B, KR1B, KR3R	KA1, KA1, KA1	Open; Close; Stop	
	Red 120v Pilot Light, 2 Push Buttons	KYK317	471.	KY3	KP1R31, KR1B, KR3R	KA2, KA3	Start; Stop	
	3 Push Buttons	KYK32	441.	KY3	KR1B, KR1B, KR3R	KA1, KA1, KA1	Up; Down; Stop	
	3 Push Buttons (Lockout on Stop)	KYK325	485.	KY3	KR1B, KR1B, KR3R, K4	KA1, KA1, KA1	Up; Down; Stop	
	UL Types 1, 3, 4 and 13/NEMA 1, 3, 4 and 13—Stainless Steel (304) ■							
	1	Push Button (Momentary)	KYSS101	342.	KYSS1	KR1B	KA1	Start
		Push Button (Momentary)	KYSS103	320.	KYSS1	KR1B	KA3	Stop
		Selector Switch (2 Pos Maintained)	KYSS110	356.	KYSS1	KS11B	KA1	Off-On
Selector Switch (3 Pos Maintained)		KYSS111	356.	KYSS1	KS43B	KA1	Hand-Off-Auto	
2	2 Push Buttons	KYSS201	422.	KYSS2	KR1B, KR3R	KA1, KA3	Start; Stop	
	2 Push Buttons (Lockout on Stop)	KYSS203	491.	KYSS2	KR1B, KR3R, K5	KA1, KA3	Start; Stop	
	2 Push Buttons (Maintained with Interlock)	KYSS210	441.	KYSS2	KR11U	KA1, KA1	Start; Stop	
	2 Push Buttons	KYSS205	441.	KYSS2	KR1B, KR1B	KA1, KA1	Up; Down	
UL Types 1, 3, 4, 4X and 13/NEMA 1, 3, 4, 4X and 13—Stainless Steel (304) ◆								
1	Push Button (Momentary)	KYSK101	342.	KYSS1	SKR1B	KA1	Start	
	Push Button (Momentary)	KYSK103	320.	KYSS1	SKR3R	KA3	Stop	
	Selector Switch (2 Pos Maintained)	KYSK110	356.	KYSS1	SKS11B	KA1	Off-On	
	Selector Switch (3 Pos Maintained)	KYSK111	356.	KYSS1	SKS43B	KA1	Hand-Off-Auto	
2	2 Push Buttons	KYSK201	422.	KYSS2	SKR1B, SKR3R	KA1, KA3	Start; Stop	
	2 Push Buttons (Lockout on Stop)	KYSK203	491.	KYSS2	SKR1B, SKR3R, K5	KA1, KA3	Start; Stop	
	2 Push Buttons (Maintained with Interlock)	KYSK210	441.	KYSS2	SKR11U	KA1, KA1	Start; Stop	
	2 Push Buttons	KYSK205	441.	KYSS2	SKR1B, SKR1B	KA1, KA1	Up; Down	
UL Types 1, 3, 4, 4X and 13/NEMA 1, 3, 4, 4X and 13—Polymeric (Plastic) ◆								
1	Selector Switch (3 Pos Maintained)	SKY111	270.	SKY1	SKS43B	KA1	Hand-Off-Auto	
	Selector Switch (2 Pos Maintained)	SKY110	270.	SKY1	SKS11B	KA1	Off-On	
	Selector Switch (2 Pos Maintained with Sealed Contacts) ★	SKY122	372.	SKY1	SKS11B	KA51	Off-On	
	Push Button (with Lockout)	SKY105	306.	SKY1	SKR3R, K5	KA3	Stop	
2	2 Push Buttons	SKY201	350.	SKY2	SKR1B, SKR3R	KA1, KA3	Start-Stop	
	2 Push Buttons (Lockout on Stop)	SKY203	422.	SKY2	SKR1B, SKR1R, K5	KA1, KA3	Start-Stop	
	2 Push Buttons (With Sealed Contacts) ★	SKY223	570.	SKY2	SKR1B, SKR3R	KA51, KA51	Start-Stop	
	2 Push Buttons (With Sealed Contacts) ★	SKY222	570.	SKY2	SKR1B, SKR3R	KA51, KA51	On-Off	
3	2 Push Buttons	SKY205	372.	SKY2	SKR1B, SKR1B	KA1, KA1	Up-Down	
	3 Push Buttons	SKY302	464.	SKY3	SKR1B, SKR1B, SKR3R	KA1, KA1, KA3	Up-Down-Stop	
	3 Push Buttons	SKY303	464.	SKY3	SKR1B, SKR1B, SKR3R	KA1, KA1, KA3	Open-Close-Stop	
	Red 120v Pilot Light, 2 Push Buttons	SKY315A	531.	SKY3	SKP1R31, SKR1B, SKR3R	KA1, KA3	Start-Stop	
UL Types 1, 3, 4 and 13/NEMA 1, 3, 4 and 13 Die Cast Zinc Enclosures with Integral Guard								
1	Guarded Enclosure (grey) with 120V Red LED Pilot Light	KYG11	250.	KYG1	KP38LRR9	—	order separately	
	Guarded Enclosure (grey) with 120V Green LED Pilot Light	KYG12	250.	KYG1	KP38LGG9	—	order separately	
	Guarded Enclosure (Yellow Cover) with Red Push-Pull Mushroom	KYG1Y1	275.	KYG1Y	KR9R	KA3	Emergency Stop	
	Guarded Enclosure (Yellow Cover) with Red Turn-To Release Mushroom	KYG1Y2	275.	KYG1Y	KR16	KA3	Emergency Stop	



Type KYK31



Type KYSS300



Type SKY201



Type KYG1Y2

- ▲ Uses 9001K metal operators and metal legend plates.
- Uses 9001K metal operators and plastic legend plates.
- ◆ Uses 9001SK plastic operators and plastic legend plates.
- ★ Control Station consists of components that are UL listed for use in Class I, Division 2, Groups A, B, C, or D.

Table 19.300: XVR Pre-Wired Rotating Mirror Beacons

Diameter (mm)	Sound Option	Enclosure Rating	Voltage	Color	Catalog Number	\$ Price
Ø 84	Without buzzer	IP 23 (IP 65 with accessories)	12 Vac/Vdc	Red	XVR 08J04	120.
				Orange	XVR 08J05	
				Green	XVR 08J03	
				Blue	XVR 08J06	
			24 Vac/Vdc	Red	XVR 08B04	
				Orange	XVR 08B05	
				Green	XVR 08B03	
				Blue	XVR 08B06	
Ø 106	Without buzzer	IP 23 (IP 55 with accessories)	12 Vac/Vdc	Red	XVR 10J04	138.
				Orange	XVR 10J05	
				Green	XVR 10J03	
				Blue	XVR 10J06	
			24 Vac/Vdc	Red	XVR 10B04	
				Orange	XVR 10B05	
				Green	XVR 10B03	
				Blue	XVR 10B06	
Ø 120	Without buzzer	IP 23	12 Vac/Vdc	Red	XVR 12J04	132.
				Orange	XVR 12J05	
				Green	XVR 12J03	
				Blue	XVR 12J06	
			24 Vac/Vdc	Red	XVR 12B04	
				Orange	XVR 12B05	
				Green	XVR 12B03	
				Blue	XVR 12B06	
Ø 120	With buzzer	IP 23	12 Vac/Vdc	Red	XVR 12J04S	144.
				Orange	XVR 12J05S	
				Green	XVR 12J03S	
				Blue	XVR 12J06S	
			24 Vac/Vdc	Red	XVR 12B04S	
				Orange	XVR 12B05S	
				Green	XVR 12B03S	
				Blue	XVR 12B06S	
Ø 130	Without buzzer	IP 23 Resistant to vibration	12 Vdc	Red	XVR 13J04	180.
			24 Vdc	Orange	XVR 13J05	
				Red	XVR 13B04	
				Orange	XVR 13B05	



XVR 08●●●



XVR 10●●●



XVR 12●●●



XVR 13●●●

Table 19.301: XVR Accessories

Description	Diameter (mm)	Height (mm)	Catalog Number	\$ Price
Reflecting prism	84	—	XVR ZR1	24.
	106	—	XVR ZR2	
	120/130	—	XVR ZR3	
Rubber base to increase the IP degree of protection	84	—	XVR Z081	180.
	106	—	XVR Z082	
Mount tube and base	106, 120 and 130	300	XVC Z13	180.
L-shape mounting bracket	84, 106 and 120	—	XVC Z23	18.

Table 19.302: XVC4 Tower Lights — 40 mm diameter (1.5 inches)

Description	Light source (included)	Voltage Vac/Vdc	Signaling colors ▲		Catalog Number	\$ Price
			Steady	Flashing ■		
with support tube mounting						
Without buzzer	LED for steady light only	24	R	—	XVC 4B1	105.
			R, O	—	XVC 4B2	132.
			R, O, G	—	XVC 4B3	153.
			R, O, G, B	—	XVC 4B4	189.
			R, O, G, B, C	—	XVC 4B5	235.
With buzzer + flashing light	LED for steady or flashing light	24	R	R	XVC 4B15S	160.
			R, O	R, O	XVC 4B25S	181.
			R, O, G	R, O, G	XVC 4B35S	206.
			R, O, G, B	R, O, G, B	XVC 4B45S	252.
			R, O, G, B, C	R, O, G, B, C	XVC 4B55S	294.
For base mounting						
Without buzzer	LED for steady light only	24	R	—	XVC 4B1K	78.
			R, O	—	XVC 4B2K	103.
			R, O, G	—	XVC 4B3K	126.
			R, O, G, B	—	XVC 4B4K	170.
			R, O, G, B, C	—	XVC 4B5K	221.



Table 19.303: Accessories for XVC4

Description	Diameter mm	Minimum height to be added mm	Catalog Number	\$ Price
Die-cast metal mounting base (for use with XVC4B• and XVC4B•5S with support tube)	90	32	XVC Z11	26.
Plastic mounting base (for use with XVC4, XVC4B• and XVC4B•5S — customer must discard the support tube)	84	24.5	XVC Z01	43.

Table 19.304: XVC6 Tower Lights, 60 mm diameter (2.375 inches)

Description	Light source (included)	Voltage Vac/Vdc	Signaling colors ▲		Catalog Number	\$ Price
			Steady	Flashing ■		
with support tube mounting						
Without buzzer	LED for steady light only	24	R	—	XVC 6B1 8	113.
			R, O	—	XVC 6B2	141.
			R, O, G	—	XVC 6B3	168.
			R, O, G, B	—	XVC 6B4	202.
			R, O, G, B, C	—	XVC 6B5	284.
With buzzer + flashing light	LED for steady or flashing light	24	R	R	XVC 6B15S	168.
			R, O	R, O	XVC 6B25S	195.
			R, O, G	R, O, G	XVC 6B35S	210.
			R, O, G, B	R, O, G, B	XVC 6B45S	252.
			R, O, G, B, C	R, O, G, B, C	XVC 6B55S	315.
For base mounting						
Without buzzer	LED for steady light only	24	R	—	XVC 6B1K	88.
			R, O	—	XVC 6B2K	109.
			R, O, G	—	XVC 6B3K	143.
			R, O, G, B	—	XVC 6B4K	189.
			R, O, G, B, C	—	XVC 6B5K	252.
With buzzer + flashing light	LED for steady or flashing light	24	R	R	XVC 6B15SK	137.
			R, O	R, O	XVC 6B25SK	168.
			R, O, G	R, O, G	XVC 6B35SK	189.
			R, O, G, B	R, O, G, B	XVC 6B45SK	231.
			R, O, G, B, C	R, O, G, B, C	XVC 6B55SK	284.

Table 19.305: Accessories for XVC6

Description	Diameter mm	Minimum height to be added mm	Catalog Number	\$ Price
Die-cast metal mounting base for XVC6B• and XVC6B•5S with support tube.	100	30	XVC Z02	18.
Stamped metal mounting base for XVC6B• K and XVC6B•5SK	84	21.6	XVC Z12	30.

▲ Signaling colors: R = Red, G = Green, O = Orange, B = Blue, C = Clear. The colors are listed in the mounting order of the illuminated units from top to bottom.
 ■ Includes pre-wiring for steady or flashing lights.

19 PUSH BUTTONS AND OPERATOR INTERFACE



XVC Z11



XVC 6B5K

XVC 6B55SK

Table 19.306: XVC Tower Lights — 100 mm diameter (4 inches)

Description	Light source (included)	Voltage Vdc	Signaling colors ▲		Catalog Number	\$ Price
			Steady	Flashing ■		
For base mounting						
Without buzzer With flashing light	LED for steady or flashing light	24	R	R	XVC 1B1K	421.
			R, O	R, O	XVC 1B2K	457.
			R, O, G	R, O, G	XVC 1B3K	493.
			R, O, G, B	R, O, G, B	XVC 1B4K	529.
			R, O, G, B, C	R, O, G, B, C	XVC 1B5K	565.
With buzzer + flashing light	LED for steady or flashing light	24	R	R	XVC 1B1SK	469.
			R, O	R, O	XVC 1B2SK	505.
			R, O, G	R, O, G	XVC 1B3SK	541.
			R, O, G, B	R, O, G, B	XVC 1B4SK	577.
			R, O, G, B, C	R, O, G, B, C	XVC 1B5SK	613.

- ▲ Signaling colors: R = Red, G = Green, O = Orange, B = Blue, C = Clear. The colors are listed in the mounting order of the illuminated units from top to bottom.
- Included pre-wiring for steady or flashing lights.

Table 19.307: Accessories for XVC1

Description	Diameter mm	Height mm	Catalog Number	\$ Price
Mount tube and base	140	300	XVC Z13	180.
L-shape mount bracket	—	—	XVC Z23	18.



XVC 1B5K/XVC 1B5SK



XVC Z13



XVBL3•



XVBL4B•



XVBL6B•
5 Joule



XVBL8B•
10 Joule

Table 19.308: XVB Beacons with Steady Light

Description	Light Source and Voltage	Color	Catalog Number	\$ Price
Complete unit, includes: 1 lens unit 1 base unit (direct or tube mounting)	Bulb (10 W max) not included 250 V max	Green	XVBL33	76.00
		Red	XVBL34	
		Amber	XVBL35	
		Blue	XVBL36	
		Clear	XVBL37	
		Yellow	XVBL38	

Table 19.309: XVB Beacons with Flashing Light

Description	Light Source and Voltage	Color	Catalog Number	\$ Price	
Complete unit, includes: 1 lens unit 1 base unit (direct or tube mounting)	Bulb (10 W max) not included 24 Vac 24–48 Vdc	Green	XVBL4B3	129.00	
		Red	XVBL4B4		
		Amber	XVBL4B5		
		Blue	XVBL4B6		
		Clear	XVBL4B7		
		Yellow	XVBL4B8		
		Bulb (10 W max) not included 48–230 Vac	Green		XVBL4M3
			Red		XVBL4M4
	Amber		XVBL4M5		
	Blue		XVBL4M6		
	Clear		XVBL4M7		
	Yellow		XVBL4M8		

Note: For bulbs, see page 19-108.

Table 19.310: XVB Beacons with 10 Joule Strobe (2.75 in./70 mm diameter) ▲

Description	Light Source and Voltage	Color	Catalog Number ■	\$ Price	
Complete unit, includes: 1 lens unit 1 base unit (direct or tube mounting)	Strobe 24 Vac/Vdc	Green	XVBL8B3	244.00	
		Red	XVBL8B4		
		Amber	XVBL8B5		
		Blue	XVBL8B6		
		Clear	XVBL8B7		
		Yellow	XVBL8B8		
		Strobe 120 Vac	Green		XVBL8G3
			Red		XVBL8G4
	Amber		XVBL8G5		
	Blue		XVBL8G6		
	Clear		XVBL8G7		
	Yellow		XVBL8G8		

- ▲ **Important:** Discharge tube elements are not suitable for continuous-operation signaling due to temperature rise caused by the discharge tube.
- For 5 Joule units, specify XVBL6••, instead of XVBL8•• (\$190.00).

NOTE: There are no replacement lenses for strobes.

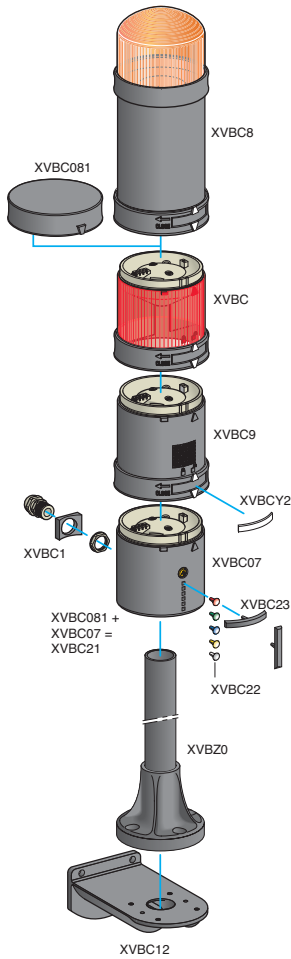


Table 19.311: XVB Lens Units for Steady Light

Description	Light Source and Voltage	Color	Catalog Number	\$ Price
Illuminated lens unit	Bulb (10 W max) not included 250 Vac/Vdc max	Green	XVBC33	40.40
		Red	XVBC34	
		Orange	XVBC35	
		Blue	XVBC36	
		Clear	XVBC37	
		Yellow	XVBC38	

Table 19.312: XVB Lens Unit for Flashing Light

Description	Light Source and Voltage	Color	Catalog Number	\$ Price	
Illuminated lens unit	Bulb (10 W max) not included 24 Vac 24–48 Vdc	Green	XVBC4B3	94.00	
		Red	XVBC4B4		
		Orange	XVBC4B5		
		Blue	XVBC4B6		
		Clear	XVBC4B7		
		Yellow	XVBC4B8		
		Bulb (10 W max) not included 48–230 Vac	Green		XVBC4M3
			Red		XVBC4M4
	Orange		XVBC4M5		
	Blue		XVBC4M6		
	Clear		XVBC4M7		
	Yellow		XVBC4M8		

Note: For bulbs, see page 19-108.

Table 19.313: XVB Lens Units with 10 Joule Strobe

Description	Light Source and Voltage	Color	Catalog Number ▲	\$ Price	
Lens unit with integral 10 Joule strobe	Strobe 24 Vac/Vdc (separate bulb not required)	Green	XVBC8B3	209.00	
		Red	XVBC8B4		
		Orange	XVBC8B5		
		Blue	XVBC8B6		
		Clear	XVBC8B7		
		Yellow	XVBC8B8		
		Strobe 120 Vac (separate bulb not required)	Green		XVBC8G3
			Red		XVBC8G4
	Orange		XVBC8G5		
	Blue		XVBC8G6		
	Clear		XVBC8G7		
	Yellow		XVBC8G8		

▲ For 5 Joule units, specify XVBC6**, instead of XVBC8** (\$155.00).
Note: There are no replacement lenses units for the XVBC strobe.

Table 19.314: Audible Sounder Units

Description	Supply Voltage	Catalog Number	\$ Price
Sounder unit 90 dB at 1 m Adjustable from 75–90 dB Continuous or intermittent modes	12–48 Vac/Vdc	XVBC9B	145.00
	120–230 Vac	XVBC9M	228.00

Table 19.315: Base Units + Cover

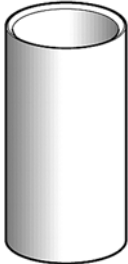
Description	Catalog Number	\$ Price
Base unit + cover for direct or tube mounting, bottom or side cable entry (includes gasket)	XVBC21	40.40

Table 19.316: XVB Accessories

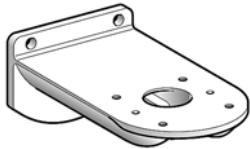
Description	Characteristics		Catalog Number		\$ Price
	in.	mm			
Black tube with integral black plastic mounting base (includes gasket)	4.72	120	XVBZ02	XVBZ02A ▲	12.50
	15.75	400	XVBZ03	XVBZ03A ▲	25.00
	31.50	800	XVBZ04	XVBZ04A ▲	50.00
Support tube concealment cover	3.94	100	XVBC020		7.80
	15.75	400	XVBC030		23.00
	31.50	800	XVBC040		41.40
Wall mount bracket	For direct mounting on base unit or with tulip XVBC11 + tube XVBC0*		XVBC12		32.30
Incandescent bulbs bayonet type BA 15d, 10 W	12 Vac/Vdc		DL1BLJ		5.40
	24 Vac/Vdc		DL1BLB		
	48 Vac/Vdc		DL1BLE		
	120 Vac/Vdc		DL1BLG		
	230 Vac/Vdc		DL1BLM		
Incandescent bulbs bayonet type BA 15d, 7 W	12 Vac/Vdc		DL1BEJ		5.40
	24 Vac/Vdc		DL1BEB		
	48 Vac/Vdc		DL1BEE		
	120 Vac/Vdc		DL1BEG		
	230 Vac/Vdc		DL1BEM		
Steady-On LEDs bayonet type BA 15d (sold as single)	24 Vac/Vdc	White	DL1BDB1		72.00
		Green	DL1BDB3		
		Red	DL1BDB4		
		Blue	DL1BDB6		
		Yellow	DL1BDB8		
	Amber	DL1BDB5			
	120 Vac	White	DL1BDG1		
		Green	DL1BDG3		
		Red	DL1BDG4		
		Blue	DL1BDG6		
Yellow		DL1BDG8			
Amber	DL1BDG5				
Flashing LEDs	24 Vac/Vdc	White	DL1BKB1		93.00
		Green	DL1BKB3		
		Red	DL1BKB4		
		Amber	DL1BKB5		
		Blue	DL1BKB6		
	Yellow	DL1BKB8			
	120 Vac	White	DL1BKG1		
		Green	DL1BKG3		
		Red	DL1BKG4		
		Amber	DL1BKG5		
Blue		DL1BKG6			
Yellow	DL1BKG8				
Adapter for side entry through base unit	With CM12 (p. 13.5) cable gland, for cable size of 0.4 to 0.55 in. (10 to 14 mm) diameter		XVBC14		5.20
Conduit adapter	1/2 in. NPT (for customer supplied tubing)		XVBC00		2.10



XVBZ0



XVBC020



XVBC12

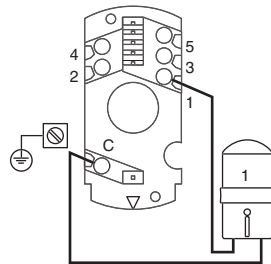


Table 19.317: XVB Accessories

Description	Characteristics	Catalog Number	\$ Price
Set of colored markers	6 colors	XVBC22	2.10
Set of 5 legend holders	Identification of stacked units on base	XVBC23	8.30

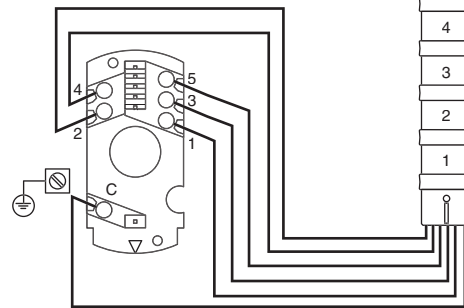
Wiring Diagrams, Base Units

Screw terminals
Torque to 4.4 in-lb (0.5 N•m)



XVB L

2 x 16 AWG (1.5 mm²)
1 x 14 AWG (2.5 mm²)



XVB C

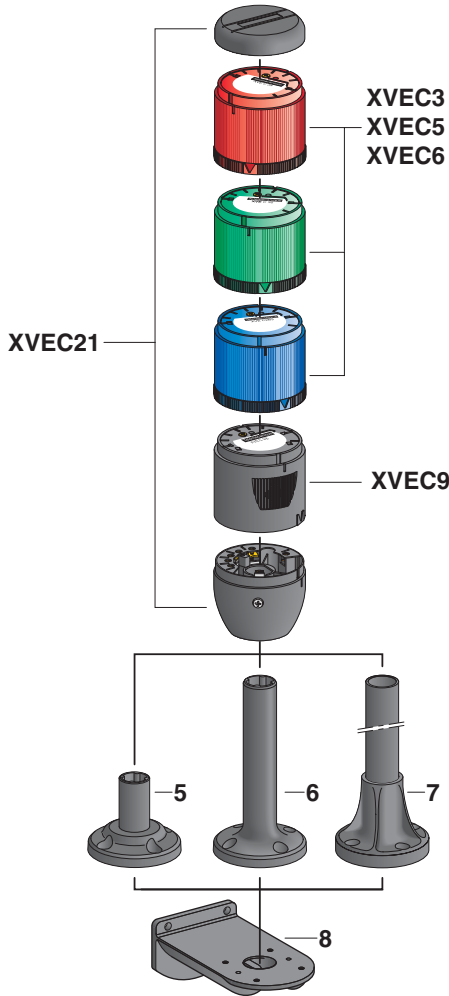


Table 19.318: XVE Lens Units with Steady Light

Description	Light source	Supply voltage	Color of lens	Catalog Number	\$ Price
Lens units only for BA 15d base fitting bulb	Bulb, not included, 5 W max.	230/ 240 Vac/Vdc	Green	XVEC33	16.00
			Red	XVEC34	
			Orange	XVEC35	
			Blue	XVEC36	
			Clear	XVEC37	
Illuminated units	Integral LED (separate bulb not requires)	24 Vac/Vdc	Green	XVEC2B3	40.00
			Red	XVEC2B4	
			Orange	XVEC2B5	
			Blue	XVEC2B6	
			Clear	XVEC2B7	
	120 Vac	Green	XVEC2G3		
		Red	XVEC2G4		
		Orange	XVEC2G5		
		Blue	XVEC2G6		
		Clear	XVEC2G7		

Table 19.319: XVE Lens Units with Flashing LED

Illuminated units	Integral LED	24 Vac/Vdc	Green	XVEC5B3	60.00
			Red	XVEC5B4	
			Orange	XVEC5B5	
			Blue	XVEC5B6	
			Clear	XVEC5B7	
		120 Vac	Green	XVEC5G3	
			Red	XVEC5G4	
			Orange	XVEC5G5	
			Blue	XVEC5G6	
			Clear	XVEC5G7	

Table 19.320: XVE Lens Units with Strobe Light

Lens units with integral 1 Joule strobe light	Discharge tube, 1 Joule	24 Vac/Vdc	Green	XVEC6B3	70.00
			Red	XVEC6B4	
			Orange	XVEC6B5	
			Blue	XVEC6B6	
			Clear	XVEC6B7	
		120 Vac	Green	XVEC6G3	
			Red	XVEC6G4	
			Orange	XVEC6G5	
			Blue	XVEC6G6	
			Clear	XVEC6G7	

Table 19.321: XVE Audible Sounder Units

Description	Supply Voltage	Catalog Number	Price
Audible Sounder Units 85dB	24 Vac/Vdc	XVEC9B	60.00
	120 Vac	XVEC9G	
	230/240 Vac	XVEC9M	

Table 19.322: XVB Base Units and Covers

Description	Catalog Number	Price
Base unit + snap on cover for NEMA and UL Type 12, IP42 rating	XVEC21	16.00
Base unit + screw mounting cover for IP54 rating (includes 5 O-ring seals for lens units and 1 gasket for base unit)	XVEC21P	20.00

Table 19.323: XVB Accessories

Description	Height under base unit in. (mm)	Color	Catalog Number	Price
Plastic mounting bases	0.78 (20)	Black	XVEZ13	8.00
	3.93 (100)	Black	XVDC02	10.00
Mounting bases comprising: Ø 25 mm aluminium support tube + black plastic mounting support	3.15 (80)	Black aluminium	XVBZ02	12.50
		Aluminium	XVBZ02A	
	15.7 (400)	Black aluminium	XVBZ03	25.00
		Aluminium	XVBZ03A	
31.5 (800)	Black aluminium	XVBZ04	50.00	
	Aluminium	XVBZ04A		
Description	Electrical characteristics			
Clear incandescent bulbs with BA 15d base fitting for lens units type XVE C3p	5 W, z 24 Vac/Vdc		DL1BEBS	4.10
	5 W, z 120 Vac/Vdc		DL1BEGS	
	5 W, z 230 Vac/Vdc		DL1BEMS	

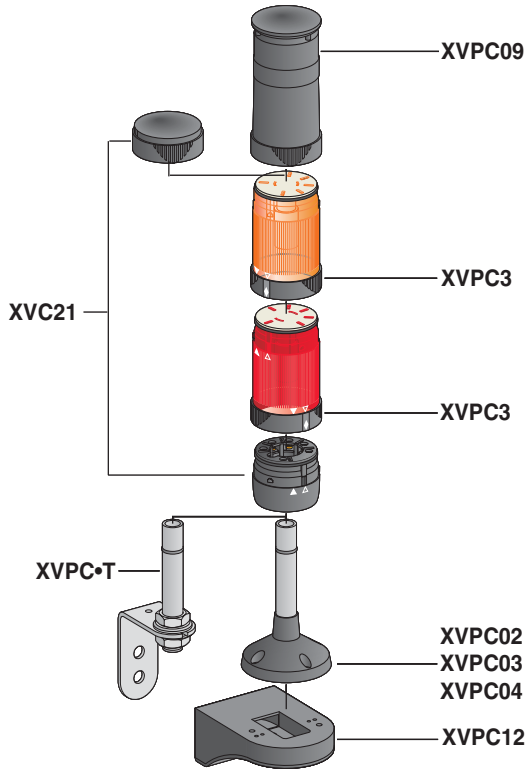


Table 19.324: Base Units + Covers

Description	Color	Catalog Number	\$ Price
Base unit and cover	Black	XVPC21	32.00
Base unit and cover	Off-white	XVPC21W	
Base unit and cover (with ring-tongue compatible terminal)	Off-white	XVPC21WR	

Table 19.325: XVP Lens Units

Description	Ring Color	Light Source and Voltage	Lens Color	Catalog Number	\$ Price
Steady or Flashing					
50 mm steady lens unit (See Table 19.327 on page 19-111 and Table 19.328 on page 19-111 for LEDs and incandescent bulbs)	Black	Bulb (7 W max) not included 250 V max	Green Red Amber Blue Clear Yellow	XVPC33 XVPC34 XVPC35 XVPC36 XVPC37 XVPC38	29.00
	Off-white	Bulb (7 W max) not included 250 V max	Green Red Amber Blue Clear Yellow	XVPC33W XVPC34W XVPC35W XVPC36W XVPC37W XVPC38W	
Strobe					
Lens unit with integral strobe	Black	Strobe 24 Vdc 0.3 Joule	Green Red Amber Blue Clear Yellow	XVPC6B3 XVPC6B4 XVPC6B5 XVPC6B6 XVPC6B7 XVPC6B8	124.00
		Strobe 120 Vac 0.6 Joule	Green Red Amber Blue Clear Yellow	XVPC6G3 XVPC6G4 XVPC6G5 XVPC6G6 XVPC6G7 XVPC6G8	
	Off-white	Strobe 24 Vdc 0.3 Joule	Green Red Amber Blue Clear Yellow	XVPC6B3W XVPC6B4W XVPC6B5W XVPC6B6W XVPC6B7W XVPC6B8W	
		Strobe 120 Vac 0.6 Joule	Green Red Amber Blue Clear Yellow	XVPC6G3W XVPC6G4W XVPC6G5W XVPC6G6W XVPC6G7W XVPC6G8W	

Table 19.326: XVP Audible Sounder Units

Description	Ring Color	Supply Voltage	Catalog Number	\$ Price
50 mm sounder unit (IP40 NEMA 1)	Black	24 Vdc	XVPC09B	104.00
		120 Vac	XVPC09G	
230 Vac		XVPC09M		
Ten tone selections, 75–85 dB at 1 m	Off-white	24 Vdc	XVPC09BW	
		120 Vac	XVPC09GW	
		230 Vac	XVPC09MW	

Table 19.327: XVP LED Bulbs



DL1BEJ

DL1BDB1

Description	Voltage	Color	Catalog Number	\$ Price
Steady-On LEDs Protected LED	24 Vac/Vdc	White Green Red Amber Blue Yellow	DL1BDB1 DL1BDB3 DL1BDB4 DL1BDB5 DL1BDB6 DL1BDB8	72.00
	120 Vac	White Green Red Amber Blue Yellow	DL1BDG1 DL1BDG3 DL1BDG4 DL1BDG5 DL1BDG6 DL1BDG8	
Flashing LEDs Protected LED	24 Vac/Vdc	White Green Red Amber Blue Yellow	DL1BKB1 DL1BKB3 DL1BKB4 DL1BKB5 DL1BKB6 DL1BKB8	93.00
	120 Vac	White Green Red Amber Blue Yellow	DL1BKG1 DL1BKG3 DL1BKG4 DL1BKG5 DL1BKG6 DL1BKG8	
Bayonet type BA 15d, 7 W	12 Vac/Vdc 24 Vac/Vdc 48 Vac/Vdc 120 Vac/Vdc 230 Vac/Vdc		DL1BEJ DL1BEB DL1BEE DL1BEG DL1BEM	5.40



XVPC03T

Table 19.328: XVP Accessories



XVPC02

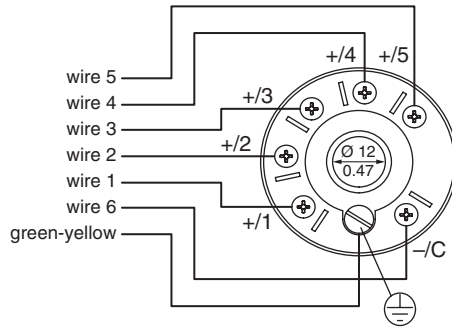
Description	Color	Characteristics		Catalog Number	\$ Price
		IN	mm		
Mounting tube with bracket	Silver	4	100	XVPC02T	21.70
		10	250	XVPC03T	26.90
		16	400	XVPC04T	32.00
Mounting tube with tulip base	Black	4	100	XVPC02	21.70
		10	250	XVPC03	32.00
		16	400	XVPC04	32.00
	Off-white	4	100	XVPC02W	26.90
		10	250	XVPC03W	26.90
		16	400	XVPC04W	32.00
Wall mounting bracket (metal)	Black Off-white	—	—	XVPC12 XVPC12W	10.40
Bulb mounting and removal tool	—	—	—	XVPCX13	5.20



XVPC12

Wiring Diagram

Cable Connections, Supply line maximum: 1.5 mm² (16 AWG)



XVP21



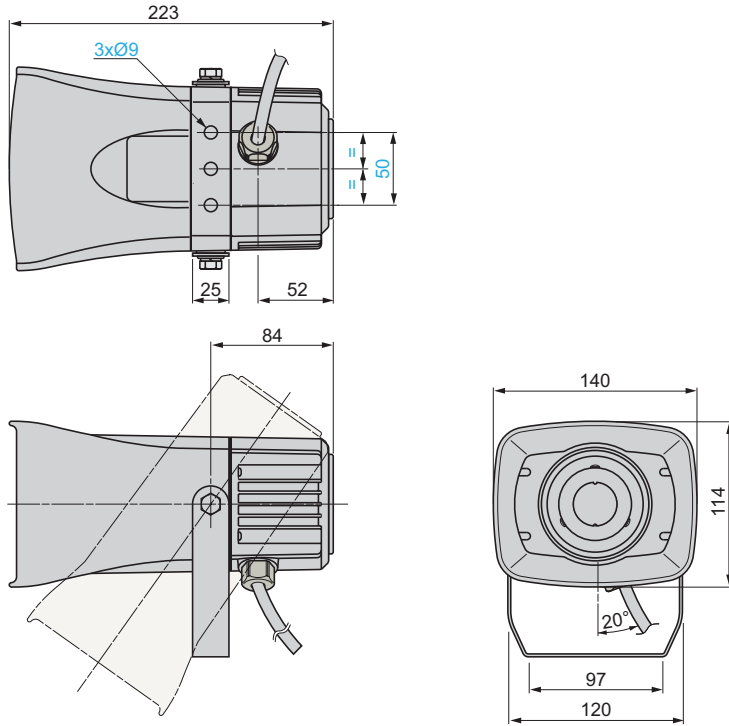
XVS14BMW

Table 19.329: XVS Sirens and Electronic Alarms

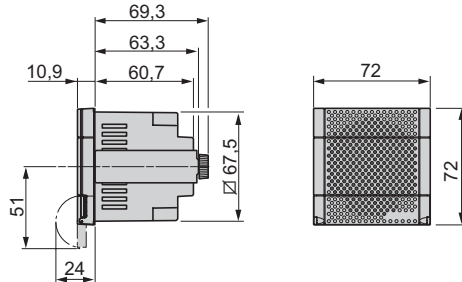
Description	Voltage	Color	Catalog Number	\$ Price
Multisound siren 105 dB, 43 tones	12/24 Vdc	White	XVS 14BMW	240.
Electronic alarms 90 dB, 16 tones Panel Mount DIN72	12/24 Vac/Vdc	PNP, Black	XVS 72BMBP	120.
		PNP, White	XVS 72BMWP	
		NPN, Black	XVS 72BMBN	
		NPN, White	XVS 72BMWN	

Table 19.330: Dimensions (mm)

XVS 14BMW



XVS 72BM●●



XVS72BM

Table 19.331: BW70 and BW80 Pendant Stations



BW70 / BW80

Description	Legend Insert Markings	Mechanical Interlock	Enclosure Color			\$ Price	Contact Symbol	Replacement Interior		
			Yellow	Black	Red			9001 Type	Contact Symbol	\$ Price
Single Speed	Up-Down	Yes	BW72Y	BW72B	BW72R	126.00	146	BOC368	146	90.00
	Forward-Reverse	Yes	BW73Y	BW73B	BW73R		146	BOC368	146	
	On-Off ▲	Yes	BW74Y	BW74B	BW74R	170.00	10	BOC358	147	
	Start-Stop	No	BW75Y	BW75B	BW75R	126.00	145	BOC359	25	
	Start-Stop ▲	Yes	BW76Y	BW76B	BW76R	170.00	10	BOC358	147	
	On-Off ▲	No	BW77Y	BW77B	BW77R	126.00	146	BOC359	25	
	Up-Down	Yes	BW78Y	BW78B	—	137.00	100	—	—	
	without Inserts	Yes	BW70YU	BW70BU	BW70RU	120.00	147	BOC366	25	
	without Inserts	No	BW71YU	BW71BU	BW71RU		25	BOC359	25	
	without Inserts ▲	Yes	BW74YU	BW74BU	BW74RU		162.00	147	BOC358	
Two Speed	without Inserts	Yes	BW80YU	BW80BU	BW80RU	185.00	150	BOC367	150	158.00
	Up-Down	Yes	BW82Y	BW82B	BW82R	192.00	150	BOC367	150	

Table 19.332: BW90 and BW100 Pendant Stations – with cord connector and strain relief



BW90 / BW100

Description	Legend Insert Markings	Mechanical Interlock	Enclosure Color			\$ Price	Contact Symbol	Replacement Interior		
			Yellow	Black	Red			9001 Type	Contact Symbol	\$ Price
Single Speed	Up-Down	Yes	BW92Y	BW92B	BW92R	136.00	146	BOC368	146	90.00
	Forward-Reverse	Yes	BW93Y	BW93B	BW93R		146	BOC368	146	
	On-Off ▲	Yes	BW94Y	BW94B	BW94R	180.00	10	BOC358	147	
	Start-Stop	No	BW95Y	BW95B	BW95R	136.00	145	BOC359	25	
	Start-Stop ▲	Yes	BW96Y	BW96B	BW96R	180.00	10	BOC358	147	
	On-Off ▲	No	BW97Y	BW97B	BW97R	136.00	146	BOC359	25	
	Up-Down	Yes	BW98Y	BW98B	—	147.00	100	—	—	
	without Inserts	Yes	BW90YU	BW90BU	BW90RU	130.00	147	BOC366	25	
	without Inserts	No	BW91YU	BW91BU	BW91RU		25	BOC359	25	
	without Inserts ▲	Yes	BW94YU	BW94BU	BW94RU		172.00	147	BOC358	
Two Speed	without Inserts	Yes	BW100YU	BW100BU	BW100RU	195.00	150	BOC367	150	158.00
	Up-Down	Yes	BW102Y	BW100B	BW102R	202.00	150	BOC367	150	

▲ Maintained Contact

Table 19.333: Hanger Brackets

Description	Form	Price
External Bracket (cannot be field installed)	Y236	10.50
Bracket and Seal Kit	B350	7.20



Y236



B350

Table 19.335: Replacement Enclosures

Description	Color	Type	Price
Box & Cover with 4 screws	Yellow	BWRY	54.00
	Red	BWRR	
	Black	BWRB	

Table 19.334: Interchangeable Legend Inserts ■

Marking	Type	Price
Start	B259	3.60
Stop	B260	
Forward	B255	
Reverse	B256	
Open	B263	
Close	B264	
Raise	B261	
Lower	B262	
Up	B253	
Down	B254	
On	B257	
Off	B258	
Blank - black	B251	
Blank - red	B252	

■ Order must specify a quantity of 10 or multiples of 10.



XACA201



XACA06



XACA03
with
operators

Table 19.336: Pistol Grip Stations

Description	Speeds	Function 1 speed/2 speed	Catalog Number	\$ Price
1 N.O. contact per operator 2 Mechanically interlocked operators	1	↑ ↓	XACA201▲	150.00
2 N.O. (staggered) contacts per operator 2 Mechanically interlocked operators	2	↑ ↓	XACA207▲	222.00
1 N.O. + 1 N.C. 2 Mechanically interlocked operators	1	↑ ↓	XACA205▲	187.00
1 N.O. contact per direction 1 Mechanically interlocked 2 way toggle	1	↑ ↓	XACD21A0101■	167.00
1 N.O. + 1 N.O. staggered 1 Mechanically interlocked 2 way toggle	2	↑ ↓	XACD21A1231■	451.00
1 N.O. & 1 N.C. contact per direction 1 Mechanically interlocked 2 way toggle	1	↑ ↓	XACD21A0105■	202.00
1 N.C. + 1 N.O. + 1 N.O. staggered 1 Mechanically interlocked 2 way toggle	2	↑ ↓	XACD21A1241■	480.00

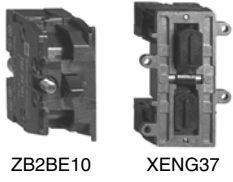
- ▲ These units are available with factory installed E-stops. Add a "3" to the end of the catalog number for standard E-stop or add a "4" for a trigger action E-stop. Consult your local Schneider Electric sales office for price adder.
- These units are available with a factory installed E-stop. Use XACD22*** for a standard E-stop or XACD24*** for a trigger action E-stop.

Table 19.337: General Purpose Pendants◆★

Enclosures	Catalog Number	\$ Price
2 hole enclosure	XACA02	192.00
3 hole enclosure	XACA03	220.00
4 hole enclosure	XACA04	250.00
6 hole enclosure	XACA06	306.00
8 hole enclosure	XACA08	382.00
12 hole enclosure	XACA12	478.00

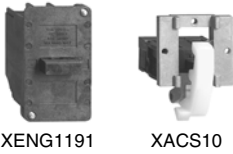
- ◆ Standard enclosures include internal mounting plate, cable sleeve for 8 to 26 mm, internal cable clamp, suspension ring and cable tie.
- ★ For ordering information on custom built XACA pendants, visit our website at www.Schneider-Electric.us.

Table 19.338: Contact Blocks for Operators in Cover



Description	Wiring Diagram	Catalog Number	\$ Price
1 N.O./spring return/1 speed	—	ZB2BE101	16.40
1 N.C./spring return/1 speed	—	XZB2BE102	
1 N.O. early close & 1 N.C. & 1 N.O./spring return/2 speed	Figure 1	XENG1191	49.00
1 N.C. & 2 N.O./spring return/1 speed	Figure 2	XENG1491	
1 N.O. & 1 N.O. latching/1 speed/interlocked	Figure 3	XENG3781	
1 N.O. & 1 N.C. latching/1 speed/interlocked	Figure 4	XENG3791	
3 N.C.—all ⊖ direct acting	Figure 5	XENT1192	

Table 19.339: Contact Blocks for Operators in Base of Enclosure ▲



1 N.O./1 speed	XACS101	28.60
1 N.C./1 speed	XACS102	
2 N.O./1 speed	XACS103	38.20
2 N.C./1 speed	XACS104	
1 N.O. & 1 N.C./1 speed	XACS105	

▲ Cannot be used with XACA03 pendant.

Wiring Diagrams

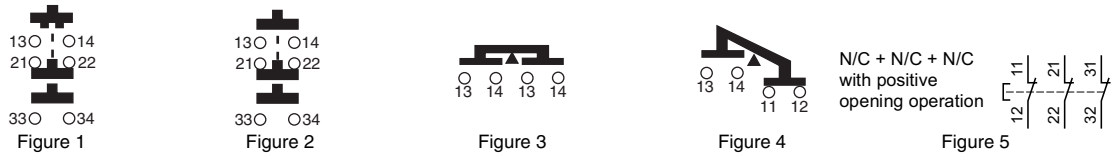


Table 19.340: Operators ■



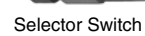
Description	Color	Catalog Number	\$ Price
Booted push button	White	XACA9411	8.20
	Black	XACA9412	
	Green	XACA9413	
	Red	XACA9414	
	Yellow	XACA9415	
	Blue	XACA9416	
	Brown	XACA9419	

Table 19.341: Mushroom Operators



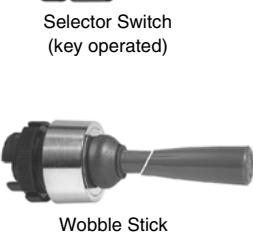
Description	Mushroom Size	Color	Catalog Number	\$ Price
Mushroom head, momentary	30 mm	Black	ZA2BC24	36.80
Mushroom head, momentary	40 mm	Red	ZA2BC44	
Mushroom head, push to maintain/turn-to-release	30 mm	Black	ZA2BC2	79.00
Mushroom head, push to maintain/turn-to-release	40 mm	Red	ZA2BC4	
Mushroom head, push to maintain/turn-to-release (trigger action) ◆	30 mm	Red	ZA2BS44	112.00
Mushroom head, push to maintain/turn-to-release (trigger action) ◆	40 mm	Red	ZA2BS54	
Mushroom head, push to maintain/key turn-to-release	30 mm	Red	ZA2BS834	112.00
Mushroom head, push to maintain/key turn-to-release	40 mm	Red	ZA2BS844	
Mushroom head, push to maintain/key turn-to-release (trigger action) ◆	30 mm	Red	ZA2BS74	112.00
Mushroom head, push to maintain/key turn-to-release (trigger action) ◆	40 mm	Red	ZA2BS14	
Mushroom head, push to maintain/key turn-to-release (trigger action) ◆	40 mm	Red	ZA2BS944	102.00

Table 19.342: Selector Switches and Wobble Stick



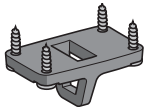
Description	Color	Catalog Number	\$ Price
Selector switch/2 position—maintained★	Black	ZA2BD2	30.00
Selector switch/3 position—maintained★	Black	ZA2BD3	
Selector switch/2 position—maintained key operated—key removal from LT or RT position★	NA	ZA2BG4	112.00
Selector switch/3 position—maintained key operated—key removal from LT or RT position★	NA	ZA2BG5	
Wobble stick (bottom mounting recommended)	Black	ZA2BB2	102.00
	Red	ZA2BB4	

Table 19.343: Pilot Light Components

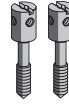


Description	Color	Catalog Number	\$ Price
Direct supply base/without lamp (for 6 to 120 V applications) (AC/DC) ▼	—	ZB2BV006	24.60
Resistor supply base/with 130 V lamp (for 220–240 V applications) (AC/DC)	—	ZB2BV007	52.00
Pilot light operators for incandescent lamps	Green	ZA2BV03	9.60
	Red	ZA2BV04	
	Amber	ZA2BV05	
	Blue	ZA2BV06	
	Clear	ZA2BV07	
Pilot light operators for LED lamps	Green	ZA2BV033	9.60
	Red	ZA2BV043	
	Amber	ZA2BV053	

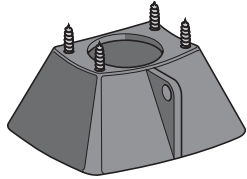
- Booted push buttons are for cover mounting only. All other operators can be mounted on cover or bottom.
- ◆ Trigger action mushroom heads are tamper proof in that a change of contact state is not possible by teasing or floating the operator.
- ★ Not for use with XEN G contact blocks.
- ▼ For lamps, see page 19-116.



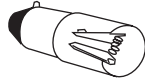
XACA971



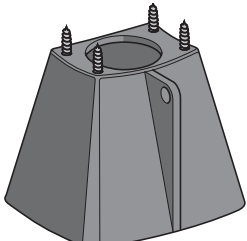
XACB961



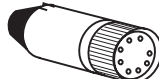
XACA982



DL1CE0**
(Incandescent)



XACA983



DL1CJUS***
(LED)

Table 19.344: Enclosure Accessories

Description	Catalog Number	\$ Price
Blank hole plug	ZB2S23	13.60
Mechanical interlock (momentary). For use with XAC booted operators only	XACA009	8.20
Screw adapter for self-supporting cable	XACB961	6.80
Low suspension ring for single row station	XACA971	19.20
Protective guard for bottom mounted mushroom head	XACA982	
Protective guard for bottom mounted selector switch or key switch	XACA983	27.40

Table 19.345: Lamps

Type	Voltage	Watts	Catalog Number	\$ Price
Replacement bulbs (Type BA9s) Incandescent	6 Vac/Vdc	1.2	DL1CB006	11.00
	12 Vac/Vdc	2.0	DL1CE012	
	24 Vac/Vdc	2.0	DL1CE024	
	48 Vac/Vdc	2.4	DL1CE048	
	130 Vac/Vdc	2.6	DL1CE130	
Neon (use with direct supply light module)	120 Vac/Vdc	—	NE51HRT120V	15.20
	220 Vac/Vdc	—	NE51HRT220V	
	380 Vac/Vdc	—	NE51HRT380V	

Table 19.346: LED, BA9s Base

Type	Color	Voltage	Catalog Number	\$ Price
LED, BA9s base for Direct Supply blocks	Green	6 Vac/Vdc	DL1CJUS0063	25.00
	Red	6 Vac/Vdc	DL1CJUS0064	
	Amber	6 Vac/Vdc	DL1CJUS0065	
	Green	12 Vac/Vdc	DL1CJUS0123	
	Red	12 Vac/Vdc	DL1CJUS0124	
	Amber	12 Vac/Vdc	DL1CJUS0125	
	Green	24 Vac/Vdc	DL1CJUS0243	
	Red	24 Vac/Vdc	DL1CJUS0244	
	Amber	24 Vac/Vdc	DL1CJUS0245	
	Green	120 Vac/Vdc	DL1CJUS1203	
	Red	120 Vac/Vdc	DL1CJUS1204	
	Amber	120 Vac/Vdc	DL1CJUS1205	

Table 19.347: PVC Standard Legend Plates 30 x 40 mm

Text▲	Catalog Number	\$ Price	Text▲	Catalog Number	\$ Price	Text▲	Catalog Number	\$ Price		
Bridge Forward	ZB2BY2343	4.20	Left	ZB2BY2310	4.20	Stop	ZB2BY2304	4.20		
Bridge Reverse	ZB2BY2344		Low	ZB2BY2336		Stop Start	ZB2BY2366			
Close	ZB2BY2314		Lower	ZB2BY2337		Trolley Right	ZB2BY2345			
Down	ZB2BY2308		Man Auto	ZB2BY2372		Trolley Left	ZB2BY2346			
Emergency Stop	ZB2BY2330		Off	ZB2BY2312		Up	ZB2BY2307			
Fast	ZB2BY2328		On	ZB2BY2311		Up Down	ZB2BY2370			
Forward	ZB2BY2305		Off On	ZB2BY2367		Up-O-Down	ZB2BY2389			
For Rev	ZB2BY2371		Open	ZB2BY2313		North	6516002379			
For-O-Rev	ZB2BY2384		Open Close	ZB2BY2376					South	6516002380
Hand Off Auto	ZB2BY2387		Open-O-Close	ZB2BY2388					East	6516002381
High	ZB2BY2338		Out	ZB2BY2339		West	6516002382			
High Low	ZB2BY2369		Power On	ZB2BY2326		Trolley North	6516002383			
Hoist Down	ZB2BY2342		Raise	ZB2BY2335		Trolley South	6516002384			
Hoist Up	ZB2BY2341		Reset▲	ZB2BY2323		Trolley East	6516002385			
In	ZB2BY2503		Reverse	ZB2BY2306		Trolley West	6516002386			
Inch	ZB2BY2321		Right	ZB2BY2309		Bridge North	6516002387			
Jog For	ZB2BY2381		Run	ZB2BY2334		Bridge South	6516002388			
Jog Rev	ZB2BY2380		Slow	ZB2BY2327		Bridge East	6516002389			
Jog Run	ZB2BY2365		Start	ZB2BY2303		Bridge West	6516002390			

▲ All nameplates are black with white lettering except "Stop", "Emergency Stop" and "Reset" which are red with white lettering. For black "Reset" change final digit of catalog number to 2.

Type	Description	Catalog Number	\$ Price
PVC blank legend	Blank	ZB2BY2101	4.20
	Blank	ZB2BY4101	
PVC custom engraved	Special engraving■	ZB2BY2002	17.80
	Special engraving■	ZB2BY2004	
	Special engraving■	ZB2BY4001	
	Special engraving■	ZB2BY4005	

■ Please specify lettering when ordering. Two lines with 11 characters (including spaces) maximum on each plate.

This line of pendant stations consists of polymeric enclosures (2 through 10 units), push button units (1 through 5 speed) and laminated legend plates. All enclosures have an extra single unit space near the top which permits the installation of a toggle switch, a Type SK operator or pilot light, or a warning label. All enclosures come with a stainless steel hanger bracket and internal strain relief post. Enclosures are yellow and have a threaded opening in the top. The complete line is UL Listed and CSA Certified with NEMA Type environmental ratings 1, 3, 4, 4X and 13.

NOTE: To order, add prefix **9001** to the catalog number.

Table 19.348: Enclosure Catalog Numbers

Number of Buttons	Conduit Entrance Size	Enclosure Only▲	\$ Price	Enclosure For Assembled Station■	\$ Price
		Cat. No.		Cat. No.	
2	3/4"-14 NPT	SKYP2	189.00	SKYP20	
4	3/4"-14 NPT	SKYP4	239.00	SKYP40	
6	1"-11 1/2 NPT	SKYP6	287.00	SKYP60	
8	1 1/4"-11 1/2 NPT	SKYP8	356.00	SKYP80	
10	1 1/4"-11 1/2 NPT	SKYP10	428.00	SKYP100	

- ▲ Class 9001 SK push-to-test pilot lights and remote test pilot lights will not fit in these enclosures.
- Assembled pendant stations consist of an enclosure, operators and legend plates. All custom orders must include the pendant key sheet available as shown on page 19-118.
- ◆ The price of an assembled pendant SKYP station includes the enclosure and components plus a 10% assembly charge. (Example: 9001 SKYP2 (\$189) + SKRU1 (\$129) + SKN201 (\$8.60) = \$326.60 + 10% = \$360.

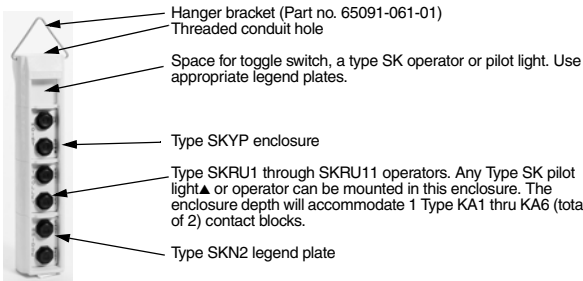


Table 19.349: Push Button Units

Number of Buttons per Unit	Description	Contact Symbol – See Below	Cat. No.★	\$ Price
	Single Speed – Momentary Interlocked	7	SKRU1	129.00
	Single Speed – Momentary Non-Interlocked	5	SKRU10	107.00
	Single Speed – Maintained Interlock	10	SKRU11	149.00
	Two Speed – Momentary Interlocked	87	SKRU2	270.00
	Three Speed – Momentary Interlocked	88	SKRU3	320.00
	Four Speed – Momentary Interlocked	89	SKRU4	341.00
	Five Speed – Momentary Interlocked	90	SKRU5	356.00

★ Types SKRU 1, 10 and 11 use Type KA contact blocks. Types SKRU 2 thru 5 are factory enclosed contact blocks.

Figure 19.1: Multispeed Contact Symbols (X = Contact Closed)

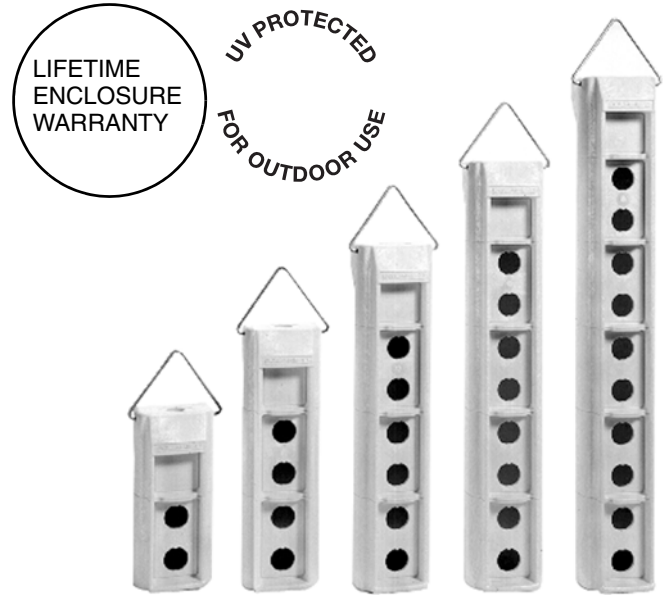
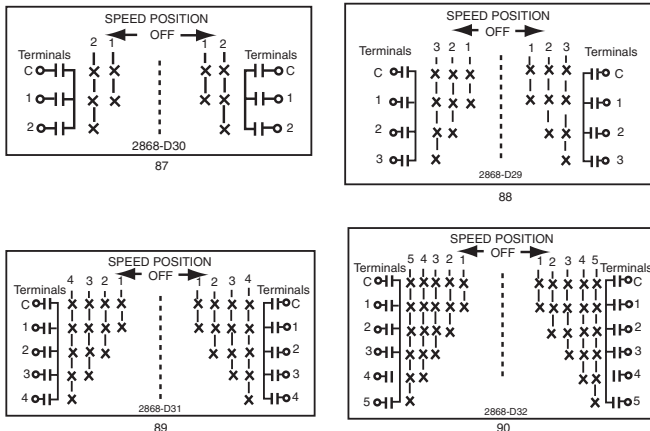


Table 19.350: Legend Plate Catalog Numbers

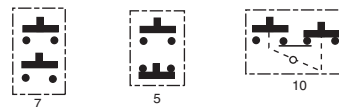
Where Used	Marking	Cat. No.	\$ Price
For SKRU1 through SKRU11	Blank-Blank Hoist: Up-Down Trolley: East-West Trolley: Fwd.-Rev. Trolley: North-South Bridge: Fwd.-Rev. Bridge: East-West Bridge: North-South Start-Stop Reset-Stop Aux Hoist: Up-Down Power: On-Off	SKN200★ SKN201 SKN202 SKN203 SKN204 SKN205 SKN206 SKN207 SKN208 SKN209 SKN210 SKN211	8.60
	Specify Marking	SKN299★	37.20
With toggle switch▼ in top space of enclosure	Blank Off-On On-Off	SKN500□ SKN544□ SKN545□	12.90
	Specify Marking	SKN599□	27.00
With 9001SK▲ operator or pilot light in top space of enclosure	Blank On Off Emerg. Stop Run Power On Off-On	SKN100◆ SKN103 SKN104 SKN105 SKN124 SKN138 SKN144	4.40
	Specify Marking	SKN199◆	18.50

- ▼ Can be supplied by Square D as Class 9001 Type SKSTS1- includes boot for NEMA Type 4X.
- ▲ See 9001SK on pages 19-73 thru 19-80.
- Includes legend plate, gasket and ground plate to be used with toggle switch.
- ◆ Tri-laminated legend plate having a yellow or red background on a black core.
- ★ 19 characters each side max.

Table 19.351: Closing Plate Catalog Number

Cat. No.	\$ Price
SK52	14.30

Figure 19.2: Single Speed Contact Symbols



Key Sheet for Custom Assembled Pendant Page 19-118

Control Products	KEY SHEET FOR ORDERING CLASS 9001 TYPE SKYP ASSEMBLED PENDANT CONTROL STATIONS		
CUSTOMER	CUSTOMER ORDER NO.		Class 9001 Type SKYP - _____
DATE	LIST PRICE EACH, CP1	QUANTITY	

1. Operator or Closing Plate.
Example - SKRU1
2. Legend Plate Type Number
Example - SKN201
3. Legend Plate Marking ▲
- Used Only if Special Marking is Required
Example:
Line 2 - SKN299
Line 3 - A.) Hoist
 B.) FWD
 C.) REV

When operator and legend plate use 2 adjacent holes - specify same in both locations. Example:



- | | |
|---|--------|
| 1 | SKRU1 |
| 2 | SKN201 |
| 3 | |
-
- | | |
|---|--------|
| 1 | SKRU1 |
| 2 | SKN201 |
| 3 | |

ENCLOSURES - NEMA 4X, 13

Size	Conduit Entrance Size	Enclosure for Assembled Station ▲
		Type
2 Button	3/4" -14 NPT	SKYP20
4 Button	3/4" -14 NPT	SKYP40
6 Button	1" -14 NPT	SKYP60
8 Button	1 1/4" -11 1/2	SKYP80
10 Button	1 1/4" -11 1/2	SKYP100

▲ Assembled pendant stations consist of an enclosure, operators, and legend plates.

TYPE NUMBER KEY

Space for toggle switch ①, a Type SK operator or pilot light, or a warning label. Use SKN-5 or SKN-1 legend plates.

1	
2	
3	

1	
2	
3	A)
	B)
	C)

1	
2	
3	A)
	B)
	C)

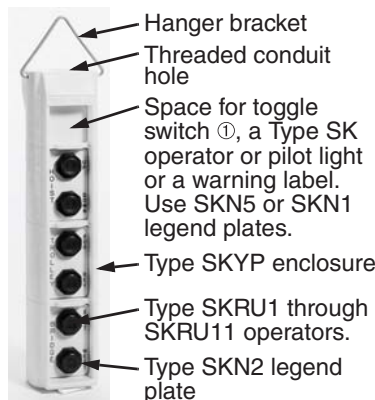
1	
2	
3	A)
	B)
	C)

1	
2	
3	A)
	B)
	C)

1	
2	
3	A)
	B)
	C)

1	
2	
3	A)
	B)
	C)

1	
2	
3	A)
	B)
	C)



PUSH BUTTON UNITS - NEMA / UL 4X, 13

Number of Buttons per Unit	Description	Contact Symbol	Type
2	Single Speed - Momentary Interlocked	7	SKRU1
2	Single Speed - Momentary Non-Interlocked	5	SKRU10
2	Single Speed - Maintained Interlocked	10	SKRU11
2	Two Speed - Momentary Interlocked	87	SKRU2
2	Three Speed - Momentary Interlocked	88	SKRU3
2	Four Speed - Momentary Interlocked	89	SKRU4
2	Five Speed - Momentary Interlocked	90	SKRU5

LEGEND PLATES - NEMA / UL 4X, 13

Where Used	Marking	Type
For SKRU1 through SKRU11	Blank-Blank	SKN200 ④
	Hoist: Up-Down	SKN201
	Trolley: East-West	SKN202
	Trolley: Fwd.-Rev.	SKN203
	Trolley: North-South	SKN204
	Bridge: Fwd.-Rev.	SKN205
	Bridge: East-West	SKN206
	Bridge: North-South	SKN207
	Start-Stop	SKN208
	Reset-Stop	SKN209
Specify Marking	SKN299 ④	
With Toggle Switch ① in Top Space of Enclosure	Blank	SKN500 ②
	Off-On	SKN544 ②
	On-Off	SKN545 ②
	Specify Marking	SKN599 ②
	Blank	SKN100 ③
With Type SK Operator ▲ or Pilot Light in Top Space of Enclosure	On	SKN103
	Off	SKN104
	Emerg. Stop	SKN105
	Run	SKN124
	Power On	SKN138
	Off-On	SKN144
	Specify Marking	SKN199 ③
	Specify Marking	SKN199R ③
	(Red Background)	

- ① Can be supplied by Square D as 9001SKSTS1
- ② Includes legend plate, gasket and ground plate to be used with toggle switch.
- ③ Tri-laminated legend plate having a yellow or red background on a black core.
- ④ 19 characters each sides.
- ▲ Class 9001 Type SK Push-To-Test Pilot lights and Remote Test Pilot lights will not fit in these enclosures.

CLOSING PLATE

Type
SK52

Heavy Duty Industrial Foot Switches—Oiltight, Watertight, Dusttight and Driptight Enclosure, NEMA 2, 4 and 13

⚠ DANGER

HAZARDOUS APPLICATIONS

Do not use foot switches on machines without point-of-operation protection.

Failure to follow these instructions will result in death, serious injury, or equipment damage.



Type AW Foot Switch with Top Pedal Shield and Side Shields



Type AW with Oversized Pedal Shield and Side Shields



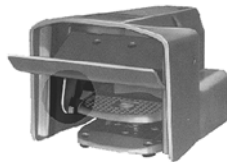
Foot Switch Selection

Foot switches are used to control many industrial processes, while leaving the operator's hands free to perform other functions. The type or model of foot switch suitable for each application will vary depending on factors such as the control function required, degree of protection required, production methods, unusual conditions, government regulations, etc. In some applications more than one foot switch may be required, as when two or more persons are operating a machine. In these cases, safe practice and regulations require that the foot switches be wired in series making it necessary that each operator's foot switch be actuated before the machine will cycle.

Only the user can be aware of all the conditions and factors present during setup, operation and maintenance of the machine; therefore, only the user can determine which foot switch(es) can be properly used. When selecting a foot switch for a particular application, the user should refer to the applicable ANSI standards and OSHA regulations. The National Safety Council's Accident Prevention Manual also provides much useful information.

In some applications, such as power presses, additional operator protection such as point-of-operation guarding must be provided when a foot switch is used as an actuator. This is necessary since the operator's hands and other parts of the body are free to enter the pinch point area and serious injury can occur. The shielding provided on foot switches cannot protect an operator from injury. For this reason the foot switch cannot be substituted for or take the place of point-of-operation protection.

A Trilingual Danger Sign regarding the need for point-of-operation protection is supplied with each foot switch. The sign incorporates three languages: English, Spanish and French. Additional copies of the sign are available by contacting your Square D sales office.



Type AW Fully Shielded Foot Switch with Oversized Pedal Shield, Side Shields and Safety Door. The Safety Door is interlocked with the pedal to prevent operation due to shock or vibration. It prevents accidental pedal operation by requiring a simple but intentional motion to lift the door before inserting the foot.



Type AW Foot Switch without Pedal Shield

Operating Temperature: -30 to +60 °C (-22 to +140 °F)

NOTE: To order, add prefix **9002** to the catalog number.

Table 19.352: Foot Switch Catalog Numbers

Description	Features	Fully Shielded with Oversized Pedal Shield, Side Shields and Safety Door		With Oversized Pedal Shield and Side Shields		With Pedal Shield and Side Shields		UNSHIELDED (See Warning note*)	
		Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price
Single Pole ■ Double Throw	Spring Return With Mechanical Latch	AW117	750.00	AW132	750.00	AW2 AW7	363.00 527.00	AW1	396.00
Two Pole ■ Double Throw	Spring Return With Mechanical Latch	AW124 ▲	903.00	AW133	903.00	AW14 AW15	527.00 692.00	AW13	575.00
Two Stage ■ (One Pole Each Stage) Table 1	Spring Return With Mechanical Latch in 1st Stage With Mechanical Latch in 2nd Stage	AW119	930.00	AW134	930.00	AW6 AW9 AW10	543.00 705.00 705.00	AW5	590.00
Four Stage ■ (One Pole Each Stage) Table 2	Spring Return	AW123	1295.00	—	—	AW22	912.00	AW21	995.00
Single Pole Single Throw	Maintained Contact—Push On/Push Off	—	—	—	—	AW12	527.00	AW11	575.00
Replacement Cover Assembly	—	AC5	363.00	AC7	363.00	AC8 ♦	140.00	AC1	153.00

- ▲ 2 N.O. and 2 N.C. isolated, direct acting contacts.
- A single pole snap switch that contains two double break contact elements (1 N.O. and 1 N.C.) must be used on circuits of same polarity. A double pole snap switch contains two electrically separated sets of contact elements allowing use on circuits of opposite polarity. Each set that contains two double break contact elements (1 N.O. and 1 N.C.) must be used on circuits of same polarity.
- ♦ For replacement cover drilled to accept latch. For Series C foot switches order AC9. Price is \$182.00 No replacement cover available for Series A or B devices drilled to accept latch. AC8 is spring return only.
- ★ **WARNING:** These foot switches must not be used to operate machines or equipment where the possibility of operator injury exists. Typical uses include Emergency Stop functions, "Dead Man" controls, signal functions (lights, bells, etc.).



File CCN

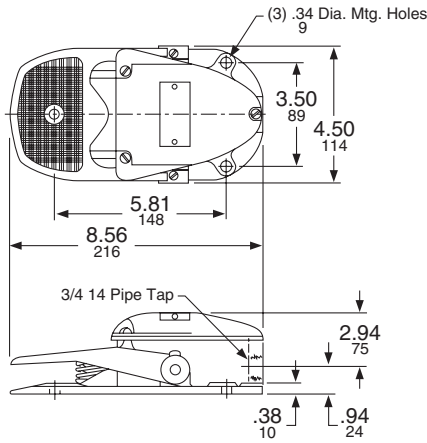
E42259 NKCR



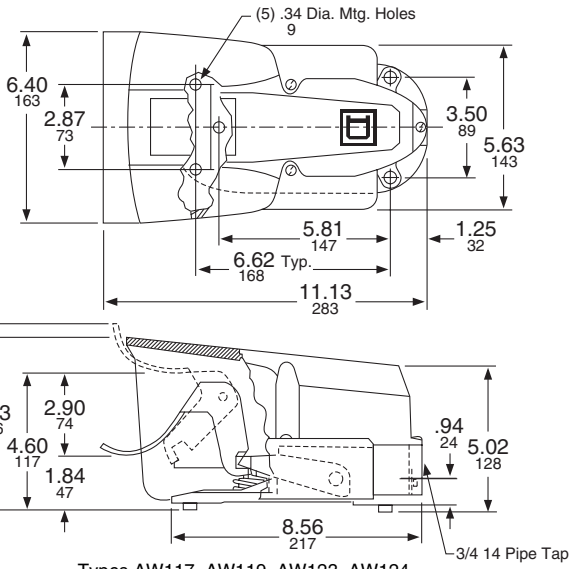
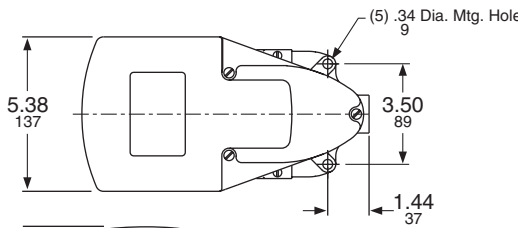
File Class

LR25490 184 N 13.1U

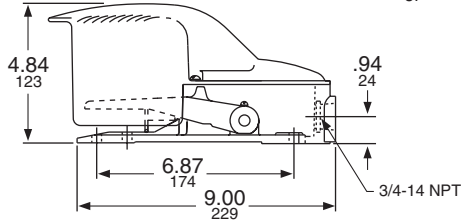
For **replacement parts** for Class 9002 Type AW: See instruction bulletin 65013-010-31.
For **contact symbol tables**, see page 19-120



Types AW1, AW5, AW11, AW13 and AW21



Types AW117, AW119, AW123, AW124
Types AW132, AW133 and AW134 (with safety door)



Types AW2, AW6, AW12, AW14 and AW22

Dual Dimensions: **INCHES**
Millimeters

Approximate Dimensions

Table 19.353: Maximum Current Ratings For Control Circuit Contacts

Type	Volts	AC Amperes			Volts	DC Amperes		
		Inductive 35% Power Factor		Resistive 75% Power Factor		Inductive and Resistive		
		Make	Break			Make, Break and Continuous	Make and Break	
				Single Throw			Double Throw	
AW1 through AW10, AW117, AW119, AW132	120	40	15	15	125	2.0	0.5	15
	240	20	10	10		0.5	0.2	15
	480	10	6	6		0.1	0.02	15
	600	8	5	5				
AW13, AW14, AW15, AW133	120	30	3	3	125	1.0	0.2	10
	240	15	1.5	1.5		0.3	0.1	10
	480	7.5	0.75	0.75		0.1	—	10
	600	6	0.6	0.6		—	—	—
AW11, AW12	115	36	6	—	125	2.2	—	—
	230	18	3	—		1.1	—	—
AW21, AW22, AW123	120	15.0	1.5	10	—	—	—	—
	240	7.5	0.75	10		—	—	—
	480	3.75	0.375	10		—	—	—
	600	3.0	0.3	10		—	—	—
AW124	120	60	6	10	120	1.1	—	10
	240	30	3	10		0.55	—	10
	480	15	1.5	10		0.2	—	10
	600	12	1.2	10		—	—	10

Note: Double throw switches are rated 250 Vdc maximum.

Table 19.354: Contact Symbol—Two Stage

Snap Switch		Pedal		
Unit	Circuit	Up	Half Down	Full Down
1	A1	0	1	1
	B1	1	0	0
2	A2	1	1	0
	B2	0	0	1

Note: 0 = Open 1 = Closed

Table 19.355: Contact Symbol—Four Stage

Snap Switch		Pedal Position				
Unit	Circuit	Up → Down				
1	1A1	0	0	1	1	1
	1B1	1	1	0	0	0
	2A1	0	1	1	1	1
	2B1	1	0	0	0	0
2	1A2	1	1	1	0	0
	1B2	0	0	0	1	1
	2A2	1	1	1	1	0
	2B2	0	0	0	0	1

Table 19.356: Rotary Cam Switches

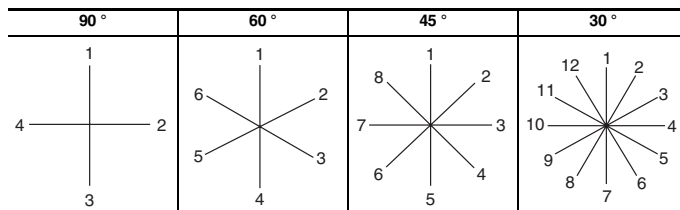
Applications		Used in building control panels and consoles, Type K cam switches allow control of processes and utilities in industry and buildings, and direct control for simple machines.					
							
Functions	Off-On/On-Off switches	1 to 6-pole	1 to 6-pole			-	
	Stepping switches	2 to 12-position, 1 to 4-pole	-			-	
	Changeover switches	1 to 5-pole	1 to 4-pole			-	
	Measurement switches	Voltmeter and ammeter	-			-	
	Reversing switches	2 and 3-pole	2 and 3-pole			-	
	Reversing star-delta switches	Star-delta	Star-delta			-	
	Pole change switches	2 and 3-speed	2-speed			-	
Conventional rated thermal current (Ith)		20 A	32 A	50 A	63 A	115 A	150 A
Rated insulation voltage (UI)		690 V	690 V	690 V	690 V	690 V	690 V
Electrical operating characteristics		AC-3 - 3-phase 230 V - 2.2 kW - 8.3 A	AC-3 - 3-phase 230 V - 5.5 kW	AC-3 - 3-phase 230 V - 7.5 kW	AC-3 - 3-phase 230 V - kW	AC-3 - 3-phase 230 V - 5 kW	AC-3 - 3-phase 230 V - 22 kW
		AC - 15 230 V - 4 A	AC - 15 230 V - 14 A	AC - 15 230 V - 6 A	-	-	-
		IP 40	IP 40			-	
Front plate degree of protection		IP 65 (with seal)	-				
Product composition		Complete switches and custom Adaptable sub-assemblies	Complete switches				
Compatibility		Ø 22 control and signalling units	-				
Mounting	Front mounting	Multi-fixing Single Ø 22 hole	By 4 holes on 48 mm centers			By 4 holes on 68 mm centers	
	Rear mounting	Screw fixing, 4 holes on 36 mm centers	Screw fixing, 4 holes on 48 mm centers			Screw fixing, 4 holes on 68 mm centers	
Front plate dimensions (mm)		45 x 45 60 x 60 (adaptable sub-assemblies)	64 x 64			88 x 88	
Operating heads		Black and red standard and long handles	-				
		Key operator	-				
		Metallic head	Black standard handle				
		Metallic legend with black marking or black legend with white marking	Metallic legend, black marking				
Approvals		UL-CSA EN/IEC 60947-3 EN/IEC 60947-5-1	cULus EN/IEC 60947-3				
Type		Type K2	Type K30-K150				
Cam switch model		Class 9003, K2	K30	K50	K63	K115	K150

Instructions for the Key Sheet on page 19-122

- From the chart below, choose the switching angle as determined on the key sheet (see page 19-122). This identifies the angular location and the position numbers for the various positions of the rotary cam switch. **Zero degrees or straight up is always position 1.** Use these position numbers when completing the target table.
- Terminals on the cam switch have the same numbers as the terminal numbers on the target table. **Contact 1-2 is a single contact.**

NOTE: When indicating a contact closure, place "X" within the square as shown in the contact sequence example.

Table 19.357: Switching Angle Chart



Explanation of the Contact Sequence Example Below

- Contact 1-2 is open in all positions except position 2.
- Contact 3-4 is closed from the 2nd through the 4th position. The contact does not open while switching from one position to another.
- Contacts 5-6 and 7-8 overlap between positions 2 and 3.
- Contact 9-10 is closed in positions 2 and 3. It is open momentarily while switching between positions 2 and 3.
- Contact 11-12 closes momentarily when switching from position 2 to position 3. This contact is not closed in position 2 or position 3.

NOTE: Position 1 is an off position

Figure 19.3: Contact Sequence Example

		Positions			
		1	2	3	4
C o n t a c t s	1-2		X		
	3-4		X	X	X
	5-6			X	X
	7-8		X	X	
	9-10		X		X
	11-12			X	

See Instructions on page 19-121.

Customer			F.O. NO.	
Date	P.O. Number	Qty		

To order custom cam switches:

1. Indicate the contact size at right (9003 K2)
2. Indicate the desired switching angle at right. **If the switching angle is not indicated, the factory will determine the angle from the table to the right.**
3. From the example shown on page 19-121, fill in the target table below.
4. Indicate the operator/handle type.
5. If the operator/handle bezel has a legend and legend marking is desired, indicate the legend marking on the back of this form.
6. If a separate legend is required, indicate the legend type on the right and the marking on the back of this form.

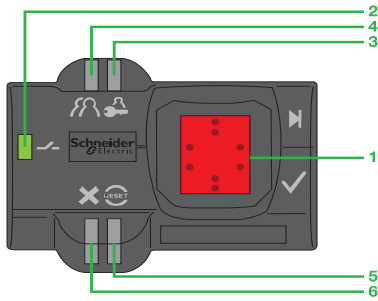
Switching Angle	Maximum Number of Positions	See Ordering Instructions at Left
90 °	4	2-3
60 °	6	4-5
45 °	8	6-7
30 °	12	8-12

Contact size	Class 9003	Type	K <u>2</u>
Switching angle		Type	_____
Operator/Handle type	Class 9003	Type	_____
Separate legend	Class 9003	Type	_____

NOTE: See page 19-121 for target table explanation

← Target Table Positions →

	1	2	3	4	5	6	7	8	9	10	11	12
1-2												
3-4												
5-6												
7-8												
9-10												
11-12												
13-14												
15-16												
17-18												
19-20												
21-22												
23-24												
25-26												
27-28												
29-30												
31-32												
33-34												
35-36												
37-38												
39-40												



XB5 S•B****



ZB5 SZ70



ZB5SZ72

Biometric Switches

The fingerprint-reading biometric switch is designed for use in industry to restrict access to systems or machines. No interface is required to program or operate the switch: it is an independent unit.

Two types of products are available:

- Maintained biometric switches, Type XB5S1B, with two fixed states
- Momentary biometric switches, Type XB5S2B, with pulse output

The biometric switch is aimed at two types of users:

- The administrator who manages the registration and deletion of fingerprints
- The operator who, once registered, uses the product as a control unit

The product is of monolithic design (a single plastic housing) and is mounted by a nut (hand-tightened without the need for tools) in a standard 22 mm diameter hole. It operates on a 24 Vdc supply.

The product connects to the power supply and to the control output (relay or PLC) with a 2 meter cable or with an M12 connector.

It can be installed on a flat, horizontal, or vertical surface.

Two protective covers are available (see table below)

- One to protect the active face of the sensing screen. This cover is attached with a self-adhesive hinge
- One made of 12 gauge stainless steel — designed to cover the entire switch — which protects the entire switch from the outdoor environment (rain, sleet, snow, sunlight, UV protection). It also gives some protection from someone trying to break into the switch

Description

The product consists of a dark gray housing, with the following on its front face:

- A sensing screen (1) that allows the registration of fingerprints and subsequent recognition of the registered fingerprints
- A green LED output state indicator (2), which illuminates when the output is activated (N.O. solid state contact)
- An orange LED (3), indicating an administrator's Registration mode
- An orange LED (4), indicating an operator's Registration mode
- A red Reset LED (5), which indicates in Delete mode that the administrator is deleting all or part of the memory
- A red LED (6) which flashes to indicate an unrecognized fingerprint or incorrect operation

Table 19.358: Complete Units

Description	Output	Connection	Catalog Number	\$ Price
Maintained biometric switch, 24 Vdc	PNP	2 m cable	XB5S1B2L2	580.00
		M12 connector	XB5S1B2M12	595.00
Momentary biometric switch, 24 Vdc with 0.5 s output pulse	PNP	2 m cable	XB5S2B2L2	580.00
		M12 connector	XB5S2B2M12	595.00

Table 19.359: Accessories

Description	Function	Catalog Number	\$ Price
Protective cover, translucent and self-adhesive	Protection of the sensing screen	ZB5SZ70	10.00
Mounting nut, Ø 22 mm	Replacement part	ZB5SZ71	6.00
Legend plate, 28 x 7 mm, self-adhesive, blank, with black background, for engraving		ZBY0101T	1.70
Mounting adapter	Allows this product to mount in a 30 mm mounting hole	ZBZ41	10.40
Stainless-steel protective cover	Protects switch from outside elements and vandalism	ZB5SZ72	220.00

Table 19.360: Biometric Switch Specifications

Biometric Switch, Types XB5S1B**** and XB5S2B****		
Product certifications		UL, CSA, IEC 61000-6-2 / IEC 61000-6-4
Degree of protection	Conforming to EN/IEC 60529	IP 65, NEMA 1, 2, 3, 3R, 12
Ambient air temperature	Storage	-25 to +70°C
	Operation	-5 to +50°C
Vibration resistance	Conforming to IEC 60068-2-6	1 gn, 9 to 500 Hz. Amplitude 3 mm, 5 to 9 Hz
Electric shock resistance	Conforming to IEC60068-2-27	50 gn, duration 11 ms
Connection method	Cable	Length: 2 m, 3-wire, pre-wired
	Connector	M12
Materials	Housing	Polyamide PA66
	Cable	PvR 3 x 0.34 mm ²
Memory capacity		200 records (100 users, operators, or administrators, each registering 2 fingerprints)
Output state indicator		Green LED
Short-circuit protection		By gG fuse, 250 mA
Rated supply voltage		24 Vdc with protection against reverse polarity
Voltage limits (including ripple)		20–30 Vdc
Switching capacity		≤ 200 mA with protection against overloads and short-circuits
Residual voltage, closed state		≤ 1 V
No-load current consumption		≤ 50 mA
Delays	First-up	< 2 s
	Response time	< 1 s
	Recovery time	< 1 s

NOTE: Momentary switch has 0.5 s output pulse.

Figure 19.4: Connections

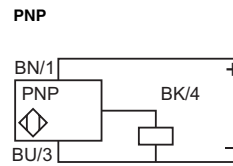
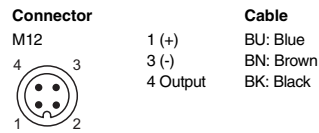
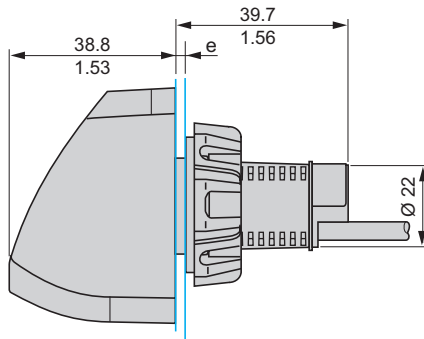
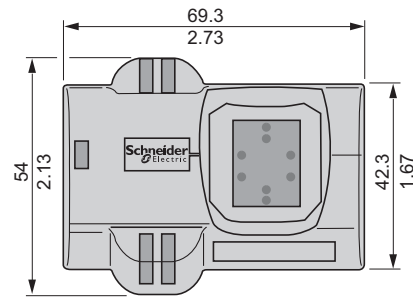


Figure 19.5: Dimensions

XB5 Biometric Switch

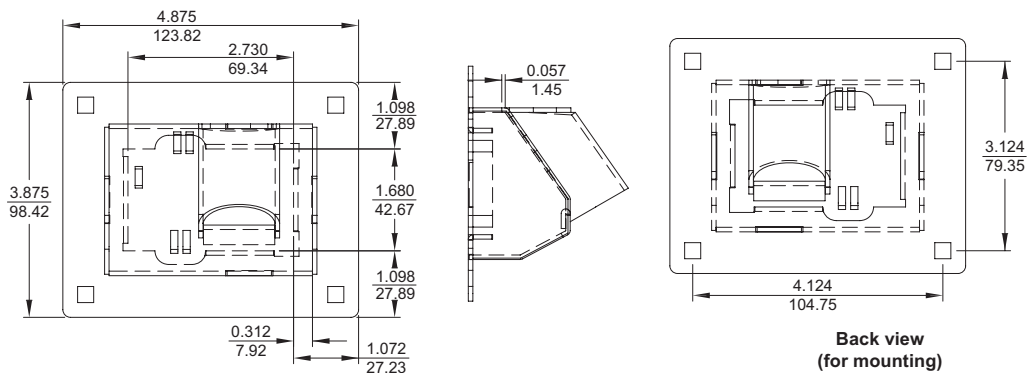


e = 1 to 6 mm
(0.04 to 0.24 in.)



Dim. = $\frac{\text{mm}}{\text{in.}}$

Stainless-Steel Cover



**Back view
(for mounting)**