

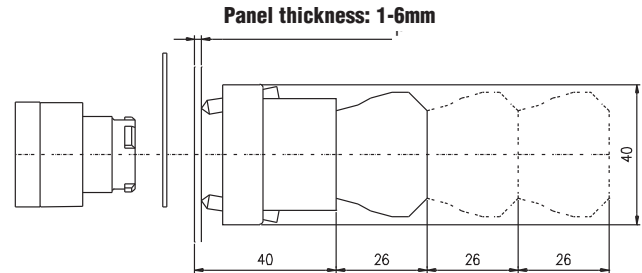
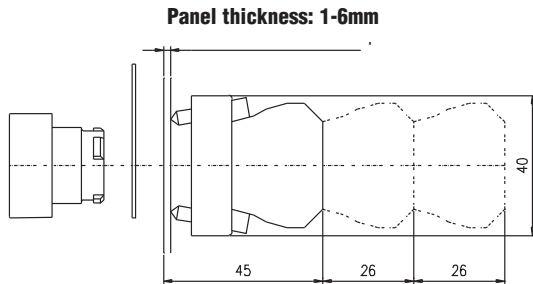
22 mm Plastic Pilot Devices Specifications

Assembly information

These pushbuttons and indicator lights are supplied with the appropriate contact blocks, unless otherwise indicated. Use these drawings as a guide to make sure there is adequate clearance behind the panel.

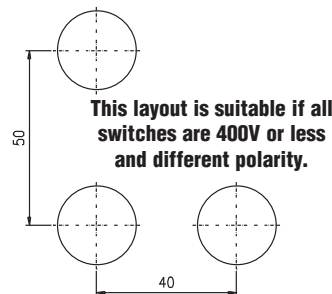
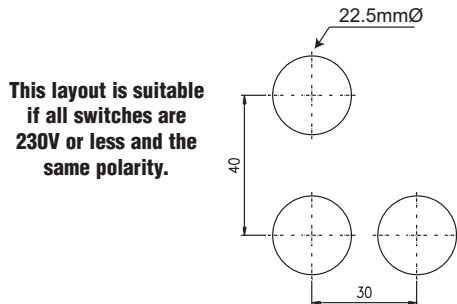
Pushbuttons and selector switches

Lighted pushbuttons and selector switches/pilot lights

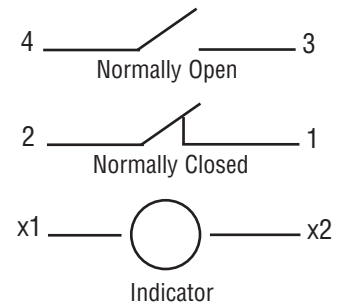


Panel holes

For safe operation, use these mounting hole drawings to ensure that there is adequate space between switches.



Typical Wiring



NOTE: Contact blocks can be arranged up to three deep by two wide.

Specifications

These specifications apply to all the 22 mm plastic pushbuttons and switches.

Physical Specifications	
Standards Reference	CEI EN 60947-5-1, CSA C22-2 n.14
Approvals	CSA, IMQ (where specified), UL File E189258
Enclosure Material	Fiberglass reinforced thermoplastic
Contacts Material	Gold plated silver
Protection Degree	IP 40 for GCX3151-24, GCX3151-120, GCX3153-24 and GCX3153-120. IP 65 for all others. (See Appendix of this catalog for explanation of IP ratings according to IEC 144 CEI 70-1.)
Electric Shock Protection	IEC 536, Class II
Temperature Ratings	Storage: -40° -to 80°C (-40° to 176° F) Operating: -25° to +70°C (-13° to 158° F)
Working Positions	All working positions are allowed
Mechanical Life	Pushbuttons, selector switches, joy stick switches: 1,000,000 operations Emergency mushrooms and push-push pushbuttons: 300,000 operations
Positive Opening Operation	(according to IEC 947-5-1) All functions incorporating an NC contact are positive opening operation

Electrical Specifications	
Rated Thermal Current (contact block)	A300, Q300 (Refer to page e25-51 for further information)
Rated Insulation Voltage	Ui 660V according to CEI EN 60947-5-1, 300V according to CSA C22-2 n.14 and UL 508
Dielectric Strength	3KV (1 second)
Insulation Resistance	2MΩ min. (500VDC)
Initial Contact Resistance	≤25mΩ
Short-Circuit Protection*	Cartridge fuses gl 10 A-500V 10, 3x381/ 100 KA
Terminal Markings	According to CENELEC EN 50013
Connections	Single screw with non-loosening plate clamp, 14AWG max., Tighten to 0.8Nm max
Contacts Operation	Self-cleaning types EN01 (N.C.) EN 10 (N.O.) slow action, positive opening
Operation Frequency	3600 operations per hour max.
Utilization Category	AC15 (Control of AC electromagnetic loads) 24 volts AC at 10 amps 130 volts AC at 6.5 amps DC13 (Control of DC electromagnetic loads) 24 volts DC at 1.5 amps 110 volts DC at 0.5 amps

*Note: Recommended, not supplied

22 mm Plastic Illuminated Selector Switches

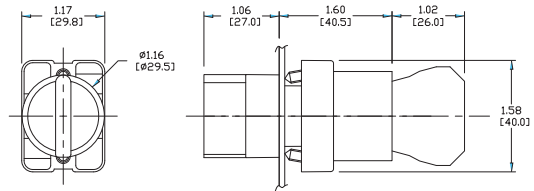
Illuminated two-position selector switches

20 models available:

- 24V and 120V with incandescent bulb in five colors
- 24V and 120V with LED bulb in five colors
- Available in spring return and maintained styles
- 24V and 120V LED lamps can be ordered separately
- Replacement knobs are available



GCX3245-24



Note: For contact closure sequence, refer to page e25-14.

Spring Return

Part Number	Lamp Color	Price	Description	Replacement Incandescent Bulb	Replacement LED Bulb
Incandescent					
GCX3241-24	Red	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Spring-return from right. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pkg 80mA	ECX1911-2 2/pkg 26mA
GCX3241-120	Red	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Spring-return from right. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pkg 20mA	ECX1921-2 2/pkg 5mA
GCX3242-24	Green	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Spring-return from right. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pkg 80mA	ECX1912-2 2/pkg 26mA
GCX3242-120	Green	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Spring-return from right. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pkg 20mA	ECX1922-2 2/pkg 5mA
GCX3243-24	Yellow	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Spring-return from right. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pkg 80mA	ECX1913-2 2/pkg 26mA
GCX3243-120	Yellow	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Spring-return from right. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pkg 20mA	ECX1923-2 2/pkg 5mA
GCX3244-24	Blue	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Spring-return from right. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pkg 80mA	ECX1914-2 2/pkg 26mA
GCX3244-120	Blue	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Spring-return from right. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pkg 20mA	ECX1924-2 2/pkg 5mA
GCX3245-24	Clear	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Spring-return from right. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pkg 80mA	ECX1915-2 2/pkg 26mA
GCX3245-120	Clear	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Spring-return from right. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pkg 20mA	ECX1925-2 2/pkg 5mA
LED					
GCX3241-24L	Red	<--->	22 mm plastic LED illuminated 2-position selector switch. Spring-return from right. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pkg 80mA	ECX1911-2 2/pkg 26mA
GCX3241-120L	Red	<--->	22 mm plastic LED illuminated 2-position selector switch. Spring-return from right. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pkg 20mA	ECX1921-2 2/pkg 5mA
GCX3242-24L	Green	<--->	22 mm plastic LED illuminated 2-position selector switch. Spring-return from right. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pkg 80mA	ECX1912-2 2/pkg 26mA
GCX3242-120L	Green	<--->	22 mm plastic LED illuminated 2-position selector switch. Spring-return from right. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pkg 20mA	ECX1922-2 2/pkg 5mA
GCX3243-24L	Yellow	<--->	22 mm plastic LED illuminated 2-position selector switch. Spring-return from right. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pkg 80mA	ECX1913-2 2/pkg 26mA
GCX3243-120L	Yellow	<--->	22 mm plastic LED illuminated 2-position selector switch. Spring-return from right. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pkg 20mA	ECX1923-2 2/pkg 5mA
GCX3244-24L	Blue	<--->	22 mm plastic LED illuminated 2-position selector switch. Spring-return from right. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pkg 80mA	ECX1914-2 2/pkg 26mA
GCX3244-120L	Blue	<--->	22 mm plastic LED illuminated 2-position selector switch. Spring-return from right. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pkg 20mA	ECX1924-2 2/pkg 5mA
GCX3245-24L	Clear	<--->	22 mm plastic LED illuminated 2-position selector switch. Spring-return from right. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pkg 80mA	ECX1915-2 2/pkg 26mA
GCX3245-120L	Clear	<--->	22 mm plastic LED illuminated 2-position selector switch. Spring-return from right. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pkg 20mA	ECX1925-2 2/pkg 5mA

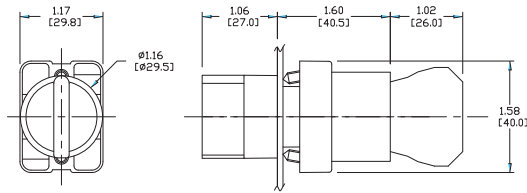
Note: Find our extensive line of accessories on pages 25-21 to 25-23.

Note: All dimensions are in inches [millimeters].

22 mm Plastic Illuminated Selector Switches



GCX3251-24



Note: For contact closure sequence, refer to page e25-14.

Illuminated two-position selector switches

- 20 models available:
- 24V and 120V with incandescent bulb in five colors
 - 24V and 120V with LED bulb in five colors
 - Available in spring return and maintained styles
 - 24V and 120V LED lamps can be ordered separately
 - Replacement knobs are available

Maintained

Part Number	Lamp Color	Price	Description	Replacement Incandescent Bulb	Replacement LED Lamp
Incandescent					
GCX3251-24	Red	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Maintained. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pk 80mA	ECX1911-2 2/pk 26mA
GCX3251-120	Red	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Maintained. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pk 20mA	ECX1921-2 2/pk 5mA
GCX3252-24	Green	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Maintained. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pk 80mA	ECX1912-2 2/pk 26mA
GCX3252-120	Green	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Maintained. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pk 20mA	ECX1922-2 2/pk 5mA
GCX3253-24	Yellow	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Maintained. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pk 80mA	ECX1913-2 2/pk 26mA
GCX3253-120	Yellow	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Maintained. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pk 20mA	ECX1923-2 2/pk 5mA
GCX3254-24	Blue	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Maintained. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pk 80mA	ECX1914-2 2/pk 26mA
GCX3254-120	Blue	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Maintained. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pk 20mA	ECX1924-2 2/pk 5mA
GCX3255-24	Clear	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Maintained. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pk 80mA	ECX1915-2 2/pk 26mA
GCX3255-120	Clear	<--->	22 mm plastic incandescent illuminated 2-position selector switch. Maintained. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pk 20mA	ECX1925-2 2/pk 5mA
LED					
GCX3251-24L	Red	<--->	22 mm plastic LED illuminated 2-position selector switch. Maintained. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pk 80mA	ECX1911-2 2/pk 26mA
GCX3251-120L	Red	<--->	22 mm plastic LED illuminated 2-position selector switch. Maintained. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pk 20mA	ECX1921-2 2/pk 5mA
GCX3252-24L	Green	<--->	22 mm plastic LED illuminated 2-position selector switch. Maintained. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pk 80mA	ECX1912-2 2/pk 26mA
GCX3252-120L	Green	<--->	22 mm plastic LED illuminated 2-position selector switch. Maintained. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pk 20mA	ECX1922-2 2/pk 5mA
GCX3253-24L	Yellow	<--->	22 mm plastic LED illuminated 2-position selector switch. Maintained. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pk 80mA	ECX1913-2 2/pk 26mA
GCX3253-120L	Yellow	<--->	22 mm plastic LED illuminated 2-position selector switch. Maintained. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pk 20mA	ECX1923-2 2/pk 5mA
GCX3254-24L	Blue	<--->	22 mm plastic LED illuminated 2-position selector switch. Maintained. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pk 80mA	ECX1914-2 2/pk 26mA
GCX3254-120L	Blue	<--->	22 mm plastic LED illuminated 2-position selector switch. Maintained. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pk 20mA	ECX1924-2 2/pk 5mA
GCX3255-24L	Clear	<--->	22 mm plastic LED illuminated 2-position selector switch. Maintained. 24VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1902-5 5/pk 80mA	ECX1915-2 2/pk 26mA
GCX3255-120L	Clear	<--->	22 mm plastic LED illuminated 2-position selector switch. Maintained. 120VDC/VAC. One N.O. contact block. Illuminated colored knob.	ECX1904-5 5/pk 20mA	ECX1925-2 2/pk 5mA

Note: Find our extensive line of accessories on pages 25-21 to 25-23.

Note: All dimensions are in inches (millimeters).

22 mm Pilot Device Accessories

Replacement incandescent bulbs



ECX1902-5

Part Number	Quantity	Price	Rating	Description
ECX1900-5	Pkg of 5 bulbs	<-->	6V@ 200mA, 1.2 watts	6V replacement bulb for 22 mm switches and indicators. Miniature bayonet base T31/4
ECX1902-5	Pkg of 5 bulbs	<-->	24V@ 80mA 2 watts	24V replacement bulb for 22 mm switches and indicators. Miniature bayonet base T31/4
ECX1904-5	Pkg of 5 bulbs	<-->	130V@20mA 2.6 watts	120V replacement bulb for 22 mm switches and indicators. Miniature bayonet base T31/4

Note: Bulb removal tool available. Order part number HT8LAMPTOOL.

Replacement LED bulbs



ECX1915-2

Part Number	Color	Quantity	Price	Rating	Description
ECX1911-2	Red	Pkg of 2 LED lamps	<-->	24V@26mA 0.6 watts	LED replacement lamp for miniature bayonet bases
ECX1912-2	Green		<-->		
ECX1913-2	Yellow		<-->		
ECX1914-2	Blue		<-->		
ECX1915-2	White		<-->		
ECX1921-2	Red		<-->	120V@5mA 0.6 watts	Works with 22 mm metal and non-metal switches and indicators, but illumination will not be as even when used with 22 mm indicators Note: Will not replace sealed C-H monoblock LED indicators.
ECX1922-2	Green		<-->		
ECX1923-2	Yellow		<-->		
ECX1924-2	Blue		<-->		
ECX1925-2	White		<-->		

Note: LED modules have very low current draw and should not be used with triac output devices like PLC triac output modules. It is recommended that dry contact outputs be used to switch 120 volt AC LED modules.

Hole plug



ECX1490

Part Number	Color	Price	Description
ECX1490	Black	<-->	Plastic hole plug for 22.5 mm openings in panels and enclosures; supplied with O-ring and mounting screw. Two plugs per package.

Protective covers for pushbuttons



ECX1703-5

Part Number	Color	Quantity	Price	Description
ECX1700-5	Black	Pkg of 5 protective caps	<-->	Silicone protective covers for use with 22 mm plastic standard-size flush pushbuttons. Will not work with C-H pushbuttons, 22 mm plastic illuminated or extended pushbuttons, or 22 mm plastic pushbuttons with 40 mm actuator face.
ECX1701-5	Red		<-->	
ECX1702-5	Green		<-->	
ECX1703-5	Yellow		<-->	
ECX1704-5	Blue		<-->	
ECX1705-5	Clear		<-->	
ECX1706-5	Clear	<-->	Clear silicone protective covers for use with 22 mm plastic illuminated and extended pushbuttons only . Will not work with C-H pushbuttons, 22 mm plastic pushbuttons with 40 mm actuator face, or 22 mm plastic lighted mushroom pushbuttons.	

Knockout Punches



109225

Ruko's knockout punch hole-cutting tool includes punch, die and draw bolt (without ball bearing). Use for sheet steel, stainless-steel sheets, non-ferrous and light metals, and plastics up to 0.16" (8 ga.) thick. Replacement bolts are offered in three of the most popular sizes.

Note: Part number 109225 is recommended when punching holes for 22mm pilot devices.

Replacement keys



ECX1067-2

Part Number	Quantity	Price	Description
ECX1067-2	Pkg of 2	<-->	Replacement keys for all key-actuated 22 mm plastic selector switches only. Will not work with Cutler-Hammer 22 mm keyed switches sold by AutomationDirect

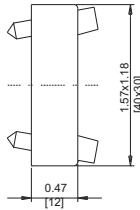
Note: All key-actuated 22mm plastic selector switches are keyed alike.

22 mm Pilot Device Accessories

Replacement 22 mm support base



ECX3029-2

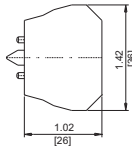


Part Number	Quantity	Price	Description
ECX3029-2	Pkg of 1	<--->	22 mm plastic support base Note: This item is supplied as a replacement part and is not required with any switch assembly. Will not work with Cutler-Hammer 22 mm switches sold by AUTOMATIONDIRECT

Replacement contact blocks



ECX1030-2



Part Number	Quantity	Price	Contacts	Description
ECX1030-2	Pkg of 2	<--->	Red, normally-closed (N.C.)	Replacement contact block for 22 mm plastic push-buttons and selector switches.
ECX1030-5	Pkg of 5	<--->		Tightening Torque, terminal screw: 0.8Nm max mounting screw: 0.5Nm max
ECX1040-2	Pkg of 2	<--->	Green, normally-open (N.O.)	Note: Will not work with Cutler-Hammer 22 mm switches sold by AUTOMATIONDIRECT
ECX1040-5	Pkg of 5	<--->		
ECX1042-2	Pkg of 2	<--->	Brown, normally-open (N.O.), push-push	Use on lighted Push-push button only

Note: See electrical specifications on page 25-6.

EMERGENCY STOP legend plate



ECX1651

Part Number	Quantity	Price	Description
ECX1651	pkg. of 1	<--->	Oversize yellow circular EMERGENCY STOP legend plate for 22 mm E-stop type mushroom pushbuttons, 60 mm outside diameter.

Two-position short lever operator



GR1172PR-5

Short Lever Replacement Operator				
Part Number	Lamp Color	Price	2-Position	Use with
GR1172PR-5	Red	<--->	22 mm 2-position selector switch illuminated short lever replacement operator, 5/pk	Part numbers starting with GCX124, GCX125 GCX324, GCX325
GR1172PV-5	Green	<--->	22 mm 2-position selector switch illuminated short lever replacement operator, 5/pk	
GR1172PG-5	Yellow	<--->	22 mm 2-position selector switch illuminated short lever replacement operator, 5/pk	
GR1172PB-5	Blue	<--->	22 mm 2-position selector switch illuminated short lever replacement operator, 5/pk	
GR1172PN-5	Clear	<--->	22 mm 2-position selector switch illuminated short lever replacement operator, 5/pk	

22 mm Pilot Device Accessories

Three-position short lever operator



GR1288PR-5

Short Lever Replacement Operator				
Part Number	Lamp Color	Price	3-Position	Use with
GR1288PR-5	Red	<--->	22 mm 3-position selector switch illuminated short lever replacement operator, 5/pk	Part numbers starting with GCX126, GCX128 GCX326, GVX328
GR1288PV-5	Green	<--->	22 mm 3-position selector switch illuminated short lever replacement operator, 5/pk	
GR1288PG-5	Yellow	<--->	22 mm 3-position selector switch illuminated short lever replacement operator, 5/pk	
GR1288PB-5	Blue	<--->	22 mm 3-position selector switch illuminated short lever replacement operator, 5/pk	
GR1288PN-5	Clear	<--->	22 mm 3-position selector switch illuminated short lever replacement operator, 5/pk	

Mushroom switch replacement operator



PL1298P-5

Mushroom Switch Replacement Operator				
Part Number	Lamp Color	Price	Description	Use with
PL1171PR-5	Red	<--->	22 mm, illuminated momentary Mushroom switch replacement operator, red, 5/pk	Part numbers starting with GCX1221, GCX3221 mushroom-style illuminated pushbuttons
PL1298P-5	Red	<--->	22 mm illuminated twist-to-release mushroom switch replacement operator, red, 5/pk	Part numbers starting with GCX1226, GCX3226 mushroom-style illuminated pushbuttons

Flush pushbutton replacement operator



GR1168PR-5

Flush Pushbutton Replacement Operator				
Part Number	Lamp Color	Price	Description	Use with
GR1168PR-5	Red	<--->	22 mm illuminated flush pushbutton replacement operator, 5/pk	Part numbers starting with GCX119, GCX120 GCX319, GCX320
GR1168PV-5	Green	<--->	22 mm illuminated flush pushbutton replacement operator, 5/pk	
GR1168PG-5	Yellow	<--->	22 mm illuminated flush pushbutton replacement operator, 5/pk	
GR1168PB-5	Blue	<--->	22 mm illuminated flush pushbutton replacement operator, 5/pk	
GR1168PN-5	Clear	<--->	22 mm illuminated flush pushbutton replacement operator, 5/pk	
GR1168PW-5	White	<--->	22 mm illuminated flush pushbutton replacement operator, 5/pk	

Extended pushbutton replacement operator



PL1308PR-5

Extended Pushbutton Replacement Operator				
Part Number	Lamp Color	Price	Description	Use with
PL1308PR-5	Red	<--->	22 mm illuminated extended pushbutton, replacement operator, 5/pk	Part numbers starting with GCX121, GCX321
PL1308PV-5	Green	<--->	22 mm illuminated extended pushbutton, replacement operator, 5/pk	
PL1308PG-5	Yellow	<--->	22 mm illuminated extended pushbutton, replacement operator, 5/pk	
PL1308PB-5	Blue	<--->	22 mm illuminated extended pushbutton, replacement operator, 5/pk	
PL1308PN-5	Clear	<--->	22 mm illuminated extended pushbutton, replacement operator, 5/pk	
PL1308PW-5	White	<--->	22 mm illuminated extended pushbutton, replacement operator, 5/pk	