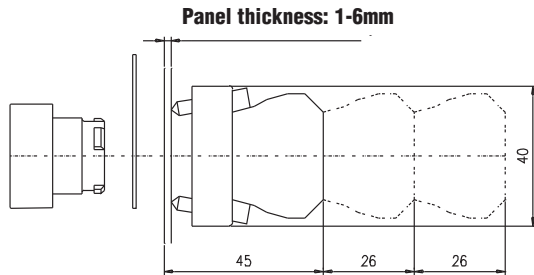


# 22 mm Metal Pilot Devices Specifications

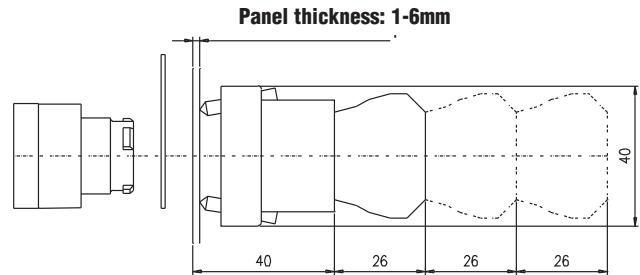
## Assembly information

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

### Pushbuttons and selector switches

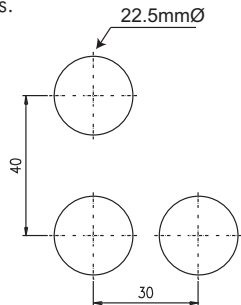


### Lighted pushbuttons and selector switches/pilot lights



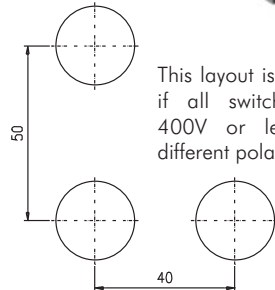
## Panel holes

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



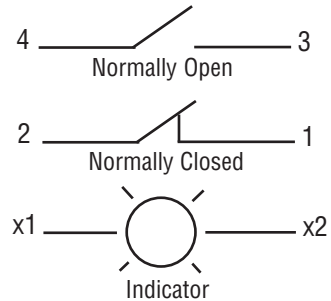
This layout is suitable if all switches are 230V or less and the same polarity.

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



This layout is suitable if all switches are 400V or less and different polarity.

## Typical Wiring



## Specifications

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

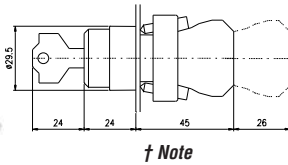
Physical Specifications	
<b>Standards Reference</b>	IEC EN 60947_5_1, CSA C22-2 n.14
<b>Approvals</b>	CSA # 066746-0-000, IMQ (where specified), UL File E189258 (ECX 1030, 1040, 1041, 1042 contact blocks and ECX 1050 lamp holder with support base)
<b>Enclosure Material</b>	Zn + Al + Mg alloy, chromium plated
<b>Contacts Material</b>	Silver
<b>Protection Degree</b>	IP 65 according to IEC 144 CEI 70-1, unless otherwise stated (see page 31-10 for explanation of IP 65)
<b>Temperature Ratings</b>	Storage: -40° to 80°C (-40° to 176° F) Operating: -25° to +70°C (-13° to 158° F)
<b>Working Positions</b>	All working positions are allowed
<b>Mechanical Life</b>	Pushbuttons, selector switches, joy stick switches: 1,000,000 operations Mushroom pushbuttons: 300,000 operations

Electrical Specifications	
<b>Rated Thermal Current (contact block)</b>	A300, Q300 (Refer to page 23-30 for more information.)
<b>Rated Insulation Voltage</b>	Ui 660V according to CEI EN 60947-5-1, 300V according to CSA C22-2 n.14 and UL 508
<b>Dielectric Strength</b>	3KV (1 second)
<b>Insulation Resistance</b>	2MΩ min. (500V DC)
<b>Initial Contact Resistance</b>	≤25mΩ
<b>Short-Circuit Protection (Recommended, not supplied)</b>	Cartridge fuses gI 10 A-500V AC 10,3x38I1 100 KA
<b>Terminal Markings</b>	According to CENELEC EN 50013
<b>Connections</b>	Single screw with non-loosening plate clamp, 14AWG max.
<b>Contacts Operation</b>	Self-cleaning types EN01 (N.C.) EN 10 (N.O.) slow action, positive opening
<b>Operation Frequency</b>	3600 operations per hour max.
<b>Utilization Category (rated operation current)</b>	<b>AC15</b> (Control of AC electromagnetic loads) 24 V AC at 10 amps 130 V AC at 6.5 amps 400 V AC at 4 amps <b>DC13</b> (Control of DC electromagnetic loads) 24 V DC at 2.8 amps 110 V DC at 0.5 amps 250 V DC at 0.27 amps

† Note: All dimensions are in millimeters. 25.4mm = 1 inch.  
For example, 30 mm in inches = 30/25.4 = 1.181 inches.

# 22 mm Indicator Lights and Metal Key Switches

## Key-operated selector switches



**GCX1420**

(2-position maintained)



Part Number	Description	Price
<b>GCX1420</b>	22 mm metal selector switch, key-operated, <b>two-position maintained</b> , key can be removed in all positions. <b>One N.O.</b> contact block. Replacement keys available	<--->
<b>GCX1430</b>	22 mm metal selector switch, key-operated, <b>two-position spring-return from right</b> . <b>One N.O.</b> contact block. Replacement keys available	<--->
<b>GCX1470-22</b>	22 mm metal selector switch, key-operated, <b>three-position maintained</b> , key can be removed in all positions. <b>Two N.O.</b> and <b>two N.C.</b> contact blocks. Replacement keys available	<--->

**Note:** Keyed switches come with two keys. All metal 22 mm keyed switches are keyed the same. Replacement keys are available. Order part no. ECX1067-2 (pkg. of 2). Keys for metal 22 mm keyed switches are not compatible with Cutler-Hammer key switches.

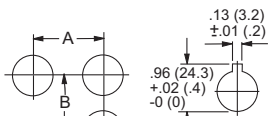
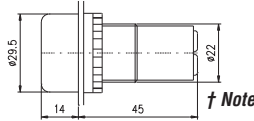
**Note:** When using switches having two-deep contact blocks (such as, Model GCX1470-22) with the 22 mm plastic enclosures, be sure to use enclosures that are 74 mm deep. 51 mm-deep enclosures are too shallow and the switch body will not fit.

**Note:** For contact closure sequence, refer to page A22-14.

## Incandescent indicator lights (non-metal)



**ECX1051-24**



.89 (22.5)  
+.02 (.4)  
Diameter

Minimum Spacing - Inches (mm)

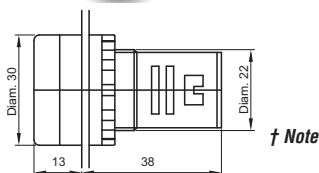
**Note:** These indicators have a key to prevent rotation when mounted.

12 models available:

- 24V and 120V with incandescent lamp in six colors
- Replacement incandescent bulbs are available.
- 24V and 120V LED lamps can be ordered separately and installed for longer life
- Note:** When using LED replacement bulbs with these indicators, it may be necessary to remove the frosted diffuser for enhanced illumination.
- Monoblock design for easy mounting
- Side wire entry with back screw terminals for easy wiring and maintenance
- IP20 rated before installation
- IP65 rated after installation

Part Number	Lamp Color	Price	Description	Replacement Incandescent Bulb	Replacement LED
<b>ECX1051-24</b>	Red	<--->	22 mm monoblock incandescent indicator light, 24VDC/VAC	ECX1902-5 5/pk 80mA	ECX1911-2 2/pk 26mA
<b>ECX1051-120</b>	Red	<--->	22 mm monoblock incandescent indicator light, 120VDC/VAC	ECX1904-5 5/pk 20mA	ECX1921-2 2/pk 5mA
<b>ECX1052-24</b>	Green	<--->	22 mm monoblock incandescent indicator light, 24VDC/VAC	ECX1902-5 5/pk 80mA	ECX1912-2 2/pk 26mA
<b>ECX1052-120</b>	Green	<--->	22 mm monoblock incandescent indicator light, 120VDC/VAC	ECX1904-5 5/pk 20mA	ECX1922-2 2/pk 5mA
<b>ECX1053-24</b>	Yellow	<--->	22 mm monoblock incandescent indicator light, 24VDC/VAC	ECX1902-5 5/pk 80mA	ECX1913-2 2/pk 26mA
<b>ECX1053-120</b>	Yellow	<--->	22 mm monoblock incandescent indicator light, 120VDC/VAC	ECX1904-5 5/pk 20mA	ECX1923-2 2/pk 5mA
<b>ECX1054-24</b>	Blue	<--->	22 mm monoblock incandescent indicator light, 24VDC/VAC	ECX1902-5 5/pk 80mA	ECX1914-2 2/pk 26mA
<b>ECX1054-120</b>	Blue	<--->	22 mm monoblock incandescent indicator light, 120VDC/VAC	ECX1904-5 5/pk 20mA	ECX1924-2 2/pk 5mA
<b>ECX1055-24</b>	Clear	<--->	22 mm monoblock incandescent indicator light, 24VDC/VAC	ECX1902-5 5/pk 80mA	ECX1915-2 2/pk 26mA
<b>ECX1055-120</b>	Clear	<--->	22 mm monoblock incandescent indicator light, 120VDC/VAC	ECX1904-5 5/pk 20mA	ECX1925-2 2/pk 5mA
<b>ECX1056-24</b>	White	<--->	22 mm monoblock incandescent indicator light, 24VDC/VAC	ECX1902-5 5/pk 80mA	ECX1915-2 2/pk 26mA
<b>ECX1056-120</b>	White	<--->	22 mm monoblock incandescent indicator light, 120VDC/VAC	ECX1904-5 5/pk 20mA	ECX1925-2 2/pk 5mA

## LED indicator lights (non-metal)



10 models available:

- 24V and 120V with LED lamp in five colors
- Replacement bulbs are not available for these models.
- IP20 rated before installation
- IP65 rated after installation
- 12 mA @ 120V, 65 mA @ 24V

Part Number	Lamp Color	Price	Description
<b>ECX2051-24L</b>	Red	<--->	22 mm non-metal monoblock LED indicator light, 24VDC/VAC
<b>ECX2051-127L</b>	Red	<--->	22 mm non-metal monoblock LED indicator light, 120VDC/VAC
<b>ECX2052-24L</b>	Green	<--->	22 mm non-metal monoblock LED indicator light, 24VDC/VAC
<b>ECX2052-127L</b>	Green	<--->	22 mm non-metal monoblock LED indicator light, 120VDC/VAC
<b>ECX2053-24L</b>	Yellow	<--->	22 mm non-metal monoblock LED indicator light, 24VDC/VAC
<b>ECX2053-127L</b>	Yellow	<--->	22 mm non-metal monoblock LED indicator light, 120VDC/VAC
<b>ECX2054-24L</b>	Blue	<--->	22 mm non-metal monoblock LED indicator light, 24VDC/VAC
<b>ECX2054-127L</b>	Blue	<--->	22 mm non-metal monoblock LED indicator light, 120VDC/VAC
<b>ECX2055-24L</b>	Clear	<--->	22 mm non-metal monoblock LED indicator light, 24VDC/VAC
<b>ECX2055-127L</b>	Clear	<--->	22 mm non-metal monoblock LED indicator light, 120VDC/VAC

**Note:** You will find our extensive line of accessories on pages A22-22 through A22-24, and A22-33.

**† Note:** All dimensions are in millimeters. 25.4mm = 1 inch. For example, 30 mm in inches = 30/25.4 = 1.181 inches.