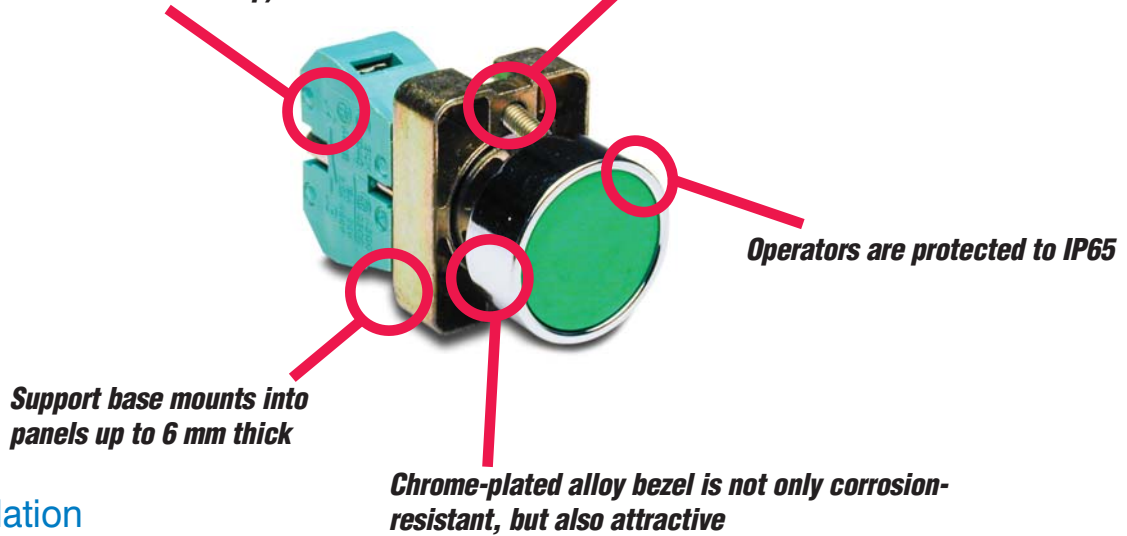


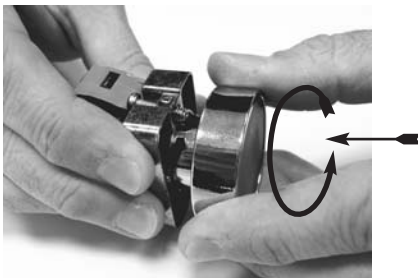
# 22 mm Metal Pilot Devices Features

**Any combination of contact blocks is allowed, up to a total of six (two blocks wide and three blocks deep)**

**Secure mounting method eliminates twisting in mounting hole**



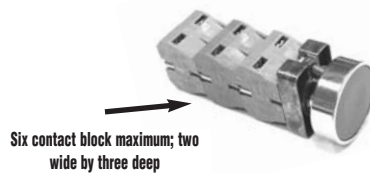
## Easy installation



To remove operator, press toward support base and twist counterclockwise.

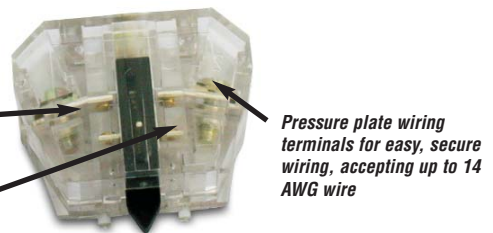


To install switch, place support base against rear of panel (not shown here), insert the operator and twist clockwise until it clicks into place. Carefully tighten the securing screws. Do not over-tighten.



**Self-cleaning gold-plated silver contacts provide reliable, low-energy switching**

**Contacts rated A300**  
(Refer to page



Clear contact block for illustration purposes. Clear contact blocks are not available for sale from AutomationDirect.

**All indicators offer side wire entry with back screw terminals for easy wiring**



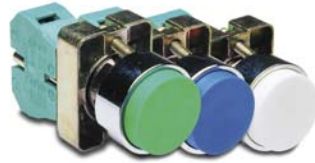
# 22 mm Metal Pilot Devices Selection Guide



## Flush

- Momentary 30 or 40 mm operators
- Available in six colors: black, red, yellow, blue, white and green
- One contact block included
- ON/OFF models also available

**Ours:** \$6.25 (GCX1100)  
**Allen-Bradley:** \$21.04\* (800EM-F2+800E-2LX10)



## Extended

- Momentary 30 mm operators
- Available in six colors: black, red, yellow, blue, white and green
- One contact block included

**Ours:** \$7.00 (GCX1110)  
**Allen-Bradley:** \$23.17\* (800EM-E4+800E-2LX01)



## Two way

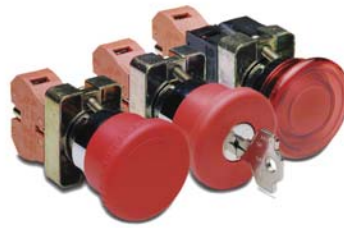
- Two way on/off control
- With or without illuminated indicators
- One NO and one NC contact block included



## Illuminated

- Available in clear, red, yellow, blue, white and green
- Momentary and push-push styles
- Flush or extended operators available
- 24 and 120-volt models
- One contact block included

**Ours:** \$11.75 (GCX1212-24)  
**Allen-Bradley:** \$58.27\* (800EM-LE3+800E-2DL3X10)



## Mushroom

- Available in momentary, twist-to-release, and key release models
- One contact block included
- Also available in incandescent and LED illuminated models

**Ours:** \$12.25 (GCX1131)  
**Allen-Bradley:** \$45.21\* (800EM-MTS34+800E-2LX01)



## Audible annunciators and potentiometers

- Audible annunciators with or without LED indicator
- 5 and 10 K $\Omega$  potentiometers



## Selector switches

- Two and three-position in spring return and maintained, non-illuminated and illuminated
- Contact block included

**Ours:** \$9.50 (GCX1300)  
**Allen-Bradley:** \$26.44\* (800EM-SM22+800E-2LX10)



## Key switches

- Two and three-position
- Contact blocks included

**Ours:** \$17.50 (GCX1420)  
**Allen-Bradley:** \$48.80\* (800EM-KM21+800E-2LX10)



## Joysticks

- Two and four-position, maintained and momentary
- Contact blocks included

**Ours:** \$25.50 (ECX1510)  
**Allen-Bradley:** \$109.32\* (800EM-JR2+800E-2LX20)



## Indicating lights

- Available in six colors: red, green, white, clear, yellow and blue
- 24 and 120-volt models
- Frosted diffuser for even lighting
- Incandescent or LED indicators

**Ours:** \$5.25 (ECX1052-24)  
**Allen-Bradley:** \$6.50\* (800EP-PM3D3)

## Accessories



• One through six-hole enclosures

• Bulbs and LEDs

• Protective actuator caps

PLC Overview

DL05/06 PLC

DL105 PLC

DL205 PLC

DL305 PLC

DL405 PLC

Field I/O

Software

C-more HMIs

Other HMI

AC Drives

Motors

Steppers/Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

**Pushbuttons/Lights**

Process

Relays/Timers

Comm.

TB's & Wiring

Power

Enclosures

Appendix

Part Index

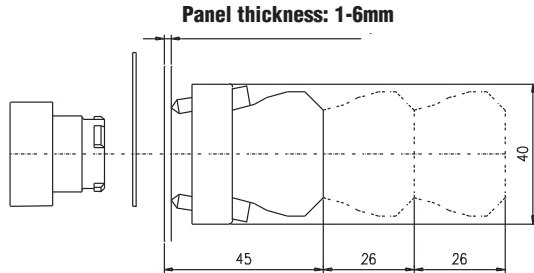
\*All prices are U.S. published prices. AutomationDirect's prices are from October 2007 Price List. Prices and specifications may vary by dealer and configuration. Allen-Bradley industrial control component prices from <http://shop.rockwellautomation.com/7/20/07>.

# 22 mm Metal Pilot Devices Specifications

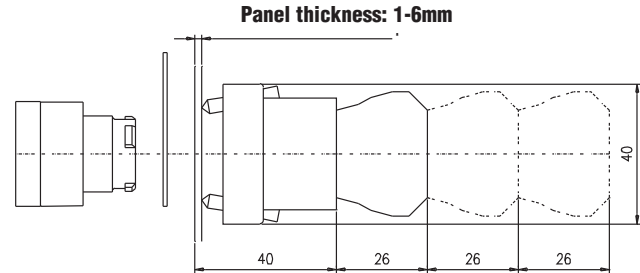
## Assembly information

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

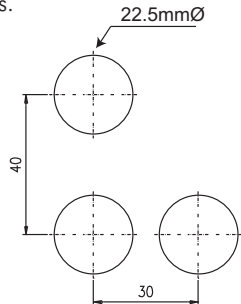


### Lighted pushbuttons and selector switches/pilot lights



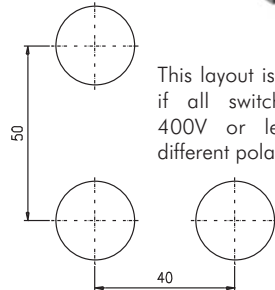
## Panel holes

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



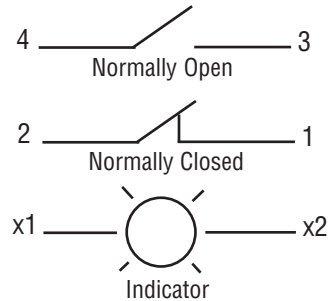
This layout is suitable if all switches are 230V or less and the same polarity.

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>	CEI 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.