CR104P Heavy-Duty Push Button Accessories, Components & Kits

600 Volts Maximum AC/DC
10 Amperes Continuous

One-step selection and pricing.

Description		Cat. No.	List Price, GO-10P1
General	Specific		
Incandescent Lamps			
All-voltage transformer lamp, min. bayonet base	6 V, # 755	CR104PXA16	$ 3.00
Full-voltage lamp, min. bayonet base	6 V, #755	CR104PXA16	3.00
	12 V, #756	CR104PXA12	3.00
	24 V, #1819	CR104PXA14	3.00
	130 V, min. bayonet base	CR104PXA54	3.00
	120V, #120PSB, # 5 telephone slide base*	CR104PXA52 ①	3.00
Resistor lamp	240V, #120PSB, # 5 telephone slide base*	CR104PXA52 ①	3.00
	120 V, # 1835, min. bayonet base	CR104PXA15	3.00
Cluster light, min. screw base	6 V, #1768	CR104PXA26	3.00
	12 V, #373	CR104PXA22	3.00
	24 V, #399	CR104PXA24	3.00
LED Lamps			
LED (Flat Top) Min. bayonet base, replaces lamp 755	6 AC/DC	080BA9S6L*	18.00②
	12 AC/DC	080BA9S12L*	18.00②
	24 AC/DC	080BA9S24L*	18.00②
	48 AC/DC	080BA9S48L*	18.00②
	120 AC/DC	080BA9S120L*	18.00②

LED Colors

Colors	Red	Green	Yellow	Orange	White	Blue
*Color code	R	V	G	A	B	L

Description		Cat. No. CR104P	List Price, GO-10P1
General	Specific		
Neon			
120 V, min. bayonet base, #NE51H-R	N/A	XA19	3.00
Mushroom-Head Caps			
Mushroom-head, 1-3/8″ diameter. Depth (max. projection front of panel) = 1.10″ (27.9mm)	Black	XM03B	6.00
	Red	XM03R	6.00
	Yellow	XM03E	6.00
	Green	XM03G	6.00
	Red, push-turn	XM04R	6.00
Mushroom-head, 2⅜″ diameter. Depth (max. projections front of panel) = 1.10″ (27.9mm)	Black	XM06B	6.00
	Red	XM06R	6.00
	Yellow	XM06E	6.00
	Green	XM06G	6.00
Mushroom-head for illuminated push buttons, 1⅜″ diameter. Depth (max. projection front of panel) = 1.20″ (30.5mm)	Red	XL06R	4.20
	Yellow	XL06E	4.20
	Green	XL06G	4.20
	Blue	XL06L	4.20
	Amber	XL06M	4.20
	White	XL06W	4.20
	Clear	XL06C	4.20

Description		Cat. No. CR104P	List Price, GO-10P1
General	Specific		
Mushroom-Head Caps			
Mushroom-head for key-operated push buttons, 2⅜″ diameter	Red	XM08R	$6.00
Replacement heads for protected mushroom-head push buttons (CR104PTY operators)	Black	TYZ152	6.00
	Red	TYZ153	6.00
	Orange	TYZ154	6.00
	Yellow	TYZ155	6.00
	Green	TYZ156	6.00
	Blue	TYZ157	6.00
	White	TYZ158	6.00
Selector Switch Knobs			
Nonilluminated selector switch knob. Depth. (max. projection front of panel) = 1.16″ (29.5mm)	Black	XM02B	.75
	Red	XM02R	.75
	Yellow	XM02E	.75
	Green	XM02G	.75
	Blue	XM02L	.75
Illuminated selector switch knob. Depth (max. projection front of panel) = 1.11″ (28.2mm)	Red	XL03R	4.20
	Yellow	XL03E	4.20
	Green	XL03G	4.20
	Blue	XL03L	4.20
	Amber	XL03M	4.20
	White	XL03W	4.20
	Clear	XL03C	4.20
Lenses			
Illuminated push button lens. Depth (max. projection front of panel) = 1.20″ (30.5mm)	Red	XL05R	4.20
	Yellow	XL05E	4.20
	Green	XL05G	4.20
	Blue	XL05L	4.20
	Amber	XL05M	4.20
	White	XL05W	4.20
	Clear	XL05C	4.20
Cluster light lens & divider (white)	For 2-lamp unit	XL02W	5.70
	For 4-lamp unit	XL04W	5.70
Indicating light lens. Depth (max. projection front of panel) = 0.92″ (23.4mm)	Red	XL01R	4.20
	Yellow	XL01E	4.20
	Green	XL01G	4.20
	Blue	XL01L	4.20
	Amber	XL01M	4.20
	White	XL01W	4.20
	Clear	XL01C	4.20
Push-to-test indicating light lens. Depth (max. projection front of panel) = 1.20″ (30.5mm)	Red	XL07R	4.20
	Yellow	XL07E	4.20
	Green	XL07G	4.20
	Blue	XL07L	4.20
	Amber	XL07M	4.20
	White	XL07W	4.20
	Clear	XL07C	4.20

① For replacement only **(GO-11GS)**.
② **GO-10GC.**

(left margin) 9 PUSH BUTTONS

The GE push button offering includes a complete line of control units and stations in both full size push buttons (30 mm) and in miniature size devices (22 mm) which are designed to be used in numerous types of industrial applications.

The CR104P full-size, heavy-duty oiltight and watertight line is complete with a variety of accessories and enclosures.

Light Tower Status Indicating Lights provide information at a glance in industrial or commercial environments where you need to transmit and receive information across a distance. Modularity and versatility make them valuable in a broad range of applications.

GE's C-2000™ 22mm Global Push Buttons are designed to be applied in just about any application worldwide. C-2000 push buttons conform to all major world standards and are UL listed and CSA Certified. All devices except the double push button are rated for NEMA 1, 3, 3R, 3S, 4, 4X, 12, 13, and IP66 when mounted in a suitable enclosure. C-2000 push buttons are manufactured in an ISO 9000 facility, assuring you that these products comply with quality standards that are recognized worldwide. Pre-engraved nameplates are available in French, Spanish, Italian, German, and English. The C-2000 push button line is globally available under the same catalog numbers, packaging, and markings anywhere in the world.

An entire listing of CR2943 and CR2941 standard-duty push button control stations is available, suitable for NEMA Type 1, 4, 4X, and 7 and 9 applications.

References:
See Publication Index, Section 18.

PUSH BUTTONS

9

CR104P Heavy-Duty Push Buttons

600 Volts Maximum AC/DC
10 Amperes Continuous

Technical Data
General Specifications

Standards & approvals	**UL listed**—File Number E2403 **CSA Certified**—LR15492, Class 321103 **NEMA**—ICS2 — 1988 **IEC** 947.5.1 **VDE** 0660		
Enclosure ratings	All units are suitable for use in **NEMA Type 1, 3, 3R, 4, 4X, 12, and 13** applications when mounted in enclosures rated for those same applications. For some NEMA 4X applications, protective caps will provide improved corrosion resistance.		
Finger protection at terminals	**IP2X** according to IEC 529 Terminal identification per **CENELEC EN 50013**		
Temperature range	Operating -25° to +70°C -13° to +158°F		Storage -40° to +70°C -40° to +158°F
Climate suitability/ humidity	Climate Type Temperate Wet Hot Wet Variable Wet	Temperature 74°F (23°C) 74°F (23°C) 104°F (40°C) 74° to 104°F (23° to 40°C)	Relative Humidity 50% 83% 92% 83%-92%
Shock and vibration	**Resistance to shock**—50g, 11ms **Frequency range**—1-100 Hz **Vibration amplitude**—1-13.2 Hz—displacement ±1mm 13.2-100 Hz—acceleration ±0.7g		
Operating force		Standard recessed push buttons	Standard flush push buttons
	Without contact blocks With 1NO contact block With 2 NO contact blocks With 3 NO contact blocks	1.625 lb./f. 2.5 lb./f. 3.5 lb./f. 4.0 lb./f.	2.5 lb./f. 2.875 lb./f. 3.5 lb./f. 4.375 lb./f.
Wire size	22-12 AWG stranded or solid copper wire		
Torque requirements	Terminal screws: 10-14 in./lb. Contact block mounting screws: 10-14 in./lb.		

Contacts

Electrical reliability data	With indicating light loads, tested for 5,000,000 operations at 40mA and 115 V resistive loads with no failures observed.		
Electrical characteristics	Characteristic	Value	
	Thermal current	10A per IEC 947-5-1	
	Insulation voltage	Ui = 660 Vac/dc	
	Protection from electrical shock	Class I per IEC 536 for metal operators; Class II (double insulation) per IEC 536 for plastic operators	
	Insulation category	Group C per VDE 0110	
	Dielectric strength	2500 V	
	Short-circuit protection	10A time-delay fuse gG per IEC 269.1 & 269.3	
Finger-safe terminals	Available for silver and gold single- and double-circuit contact blocks, as components and as assembled versions.		
Contact characteristics	NC: slow make, double break (positive opening) NO: slow make, double break Opposite polarity Self-cleaning below 300 volts NO and NC snap action (for use on joysticks)		

AC Ratings, NEMA A600 Heavy Pilot Duty	Maximum AC voltage	Continuous current amperes	AC Voltamperes @ 60/50 Hz ①	
			Make	Break
	600	10	7200	720

① Maximum make and break currents are 60 and 6 amperes respectively for voltages of 120 and below.

DC Ratings, NEMA P600	Maximum make or break amperes		
	125 V	250 V	600 V
	1.1	0.55	0.2

Reed switch block ratings		AC ratings	DC ratings
	Operating voltage	2-120 Vac	2-30 Vdc
	Continuous current (maximum)	.001-.15A	.001-.15A
	Resistive, watts (VA)	8 VA maximum	4.5 VA maximum

| Power supply resistor values | Input
120 Vac/dc
240 Vac/dc | Resistor value
750 ohms ±5%, 5 watts, 2 resistors in series
2700 ohms ±5%, 5 watts, 2 resistors in series | |

9 PUSH BUTTONS

CR104P Heavy-Duty Push Buttons

600 Volts Maximum AC/DC
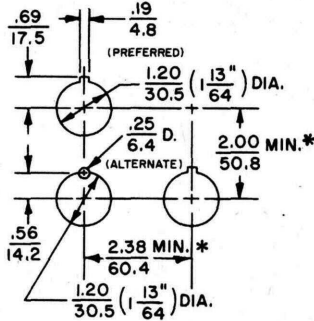10 Amperes Continuous

Technical Data, Dimensions

Mounting

CR104P push buttons are designed for front mounting, with or without nameplates, in 1¹³⁄₆₄″ diameter holes. Operators are provided with an octagonal ring, spacers, and gaskets to ensure an oiltight, uniform front protrusion.

Drilling Plan
Dual Dimensions

Inches / Millimeters

Acceptable panel thickness	0.04 - 0.25 inches (1.02 - 6.35mm)

Mechanical Life Ratings

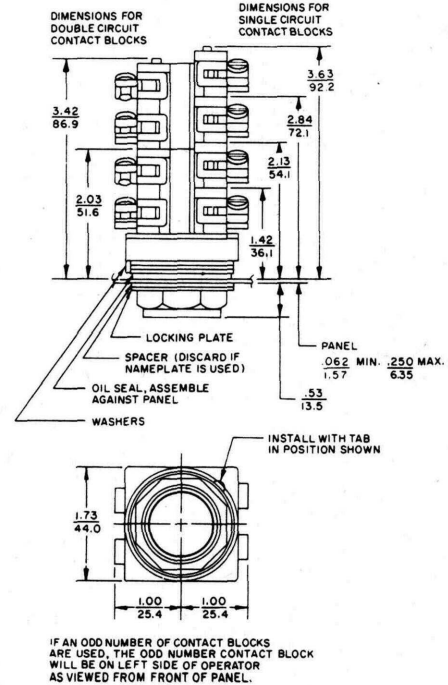| Operator	Number of Operations
Standard push buttons	3,000,000
Illuminated push buttons (including push-on/push-off)	1,000,000
Momentary mushroom-head push buttons	3,000,000
Maintained & push-to-latch, turn-to-release mushroom-head push buttons	500,000
Selector switches (all)	1,000,000
Joysticks	500,000
Toggle switches	500,000
Wobble sticks	1,000,000
Key-operated push buttons	500,000
Selector push buttons	1,000,000
Time-delay push buttons	1,000,000

Electrical Life Ratings

Push buttons—5,000,000 operations
Selector switches—500,000 operations

Maximum Contacts

Operator	Single Circuit		Double Circuit	
	Blocks	Contacts	Blocks	Contacts
Nonilluminated selector switches (excluding 4-position)	6	6	6	12
Combination (push-turn)	6	6	6	12
Nonilluminated momentary push buttons (incl. mushroom-head)	8	8	4	8
Illuminated momentary push buttons	4	4	2	4
Push-to-latch/turn-to-release mushroom-head push buttons	4	4	4	8
Cylinder lock push buttons	4	4	4	8
Illuminated selector switches	4	4	2	4
3-position & 5-position joysticks	4	4	4	8
Push-pull illuminated mushroom-head push buttons	2	2	2	4
Push-pull nonilluminated mushroom-head push buttons	2	2	2	4
Nonilluminated 4-position selector switches	—	—	2	4
Push-push illuminated push buttons	2	2	—	—

Dual Dimensions Inches / Millimeters (For Estimating Only)

For dimensional information on other operators, contact nearest GE Industrial Systems—Electrical Distribution and Control Representative. Manufacturing tolerances apply to all untoleranced dimensions.

Panel thickness (inches)	No. of washers required
.062	3
.093	2
.125	2
.188	1
.25	0

Materials

Component	Material
Cap (nonilluminated)	Unfilled polyacetal
Cap (illuminated)	Polycarbonate
Metal housings	Chromium- or zinc-plated zinc ingot
Plastic housing	Nylon
White plunger	Unfilled polyacetal
Flange	Nylon
Grease	Good for temperatures of -42° to +204°C
Plate spacer	Polycarbonate
Locking plate	Chromium-plated zinc ingot
Locking ring	Chromium-plated zinc ingot
Hexagonal ring	Chromium-plated zinc ingot
Contact block housing	Nylon
Cam	Unfilled Polyacetal
Cam follower	Unfilled Polyacetal
Joystick protective housings	Vinyl nitrile
Terminal screw	#6-32
Gasket	Vinyl nitrile
Contacts	Silver alloy
Push button guards	Chromium-plated zinc ingot
Wobble stick	Aluminum
Key	Brass
Protective caps	Silicon rubber
Locking attachment	Polycarbonate