

CR104P Heavy-Duty Nonilluminated Push Buttons

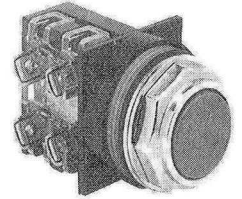
600 Volts Maximum AC/DC
10 Amperes Continuous

Common Forms

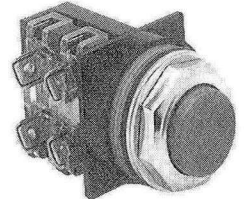
One-step selection and pricing of common assembled forms.

Units are supplied factory-assembled when ordered with contact blocks, except 2 3/8" diameter mushroom-head, which is unattached. Refer to pages 9-29 to 9-31 for Accessories.

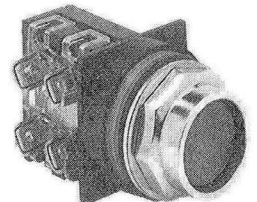
Contacts	Color	Catalog Number CR104P			List Price, GO-10P1	Catalog Number CR104P			List Price, GO-10P1	Push-to-latch, turn-to-release mushroom-head	List Price, GO-10P1
		Flush	Extended	Recessed		(35mm) 1 1/8" mushroom-head	1 5/8" @ mushroom-head	(60mm) 2 3/8" mushroom-head			
Operator Only (Select contact blocks from p. 9-28.)	Black	BG00B1	BG00B2	BG00B3	\$16.20	BM00B5	BM00B7	BM00B6	\$34.20	—	—
	Red	BG00R1	BG00R2	BG00R3	16.20	BM00R5	BM00R7	BM00R6	34.20	TR20A0R	\$52.20
	Green	BG00G1	BG00G2	BG00G3	16.20	BM00G5	BM00G7	BM00G6	34.20	—	—
	Comb. 1 Ⓛ	BG00U1	BG00U2	BG00U3	16.20	—	—	—	—	—	—
	Comb. 2 Ⓜ	BG00V1	BG00V2	BG00V3	16.20	—	—	—	—	—	—
	Other Ⓞ	BG00*1	BG00*2	BG00*3	15.90	BM00*5	BM00*7	BM00*6	28.20	—	—
1NO-1NC	Black	BG91B1	BG91B2	BG91B3	34.20	BM91B5	BM91B7	BM91B6	52.20	—	—
	Red	BG91R1	BG91R2	BG91R3	34.20	BM91R5	BM91R7	BM91R6	52.20	TR20A0R91	70.20
	Green	BG91G1	BG91G2	BG91G3	34.20	BM91G5	BM91G7	BM91G6	52.20	—	—
	Comb. 1 Ⓛ	BG91U1	BG91U2	BG91U3	34.20	—	—	—	—	—	—
	Comb. 2 Ⓜ	BG91V1	BG91V2	BG91V3	34.20	—	—	—	—	—	—
	Other Ⓞ	BG91*1	BG91*2	BG91*3	33.90	BM91*5	BM91*7	BM91*6	46.20	—	—
2NO-2NC	Black	BG92B1	BG92B2	BG92B3	52.20	BM92B5	BM92B7	BM92B6	70.20	—	—
	Red	BG92R1	BG92R2	BG92R3	52.20	BM92R5	BM92R7	BM92R6	70.20	TR20A0R92	88.20
	Green	BG92G1	BG92G2	BG92G3	52.20	BM92G5	BM92G7	BM92G6	70.20	—	—
	Comb. 1 Ⓛ	BG92U1	BG92U2	BG92U3	52.20	—	—	—	—	—	—
	Comb. 2 Ⓜ	BG92V1	BG92V2	BG92V3	52.20	—	—	—	—	—	—
	Other Ⓞ	BG92*1	BG92*2	BG92*3	51.90	BM92*5	BM92*7	BM92*6	64.20	—	—
1NO	Black	BG10B1	BG10B2	BG10B3	25.20	BM10B5	BM10B7	BM10B6	43.20	—	—
	Red	BG10R1	BG10R2	BG10R3	25.20	BM10R5	BM10R7	BM10R6	43.20	TR20A0R1	61.20
	Green	BG10G1	BG10G2	BG10G3	25.20	BM10G5	BM10G7	BM10G6	43.20	—	—
	Comb. 1 Ⓛ	BG10U1	BG10U2	BG10U3	25.20	—	—	—	—	—	—
	Comb. 2 Ⓜ	BG10V1	BG10V2	BG10V3	25.20	—	—	—	—	—	—
	Other Ⓞ	BG10*1	BG10*2	BG10*3	24.90	BM10*5	BM10*7	BM10*6	37.20	—	—
1NC	Black	BG01B1	BG01B2	BG01B3	25.20	BM01B5	BM01B7	BM01B6	43.20	—	—
	Red	BG01R1	BG01R2	BG01R3	25.20	BM01R5	BM01R7	BM01R6	43.20	TR20A0R01	61.20
	Green	BG01G1	BG01G2	BG01G3	25.20	BM01G5	BM01G7	BM01G6	43.20	—	—
	Comb. 1 Ⓛ	BG01U1	BG01U2	BG01U3	25.20	—	—	—	—	—	—
	Comb. 2 Ⓜ	BG01V1	BG01V2	BG01V3	25.20	—	—	—	—	—	—
	Other Ⓞ	BG01*1	BG01*2	BG01*3	24.90	BM01*5	BM01*7	BM01*6	37.20	—	—



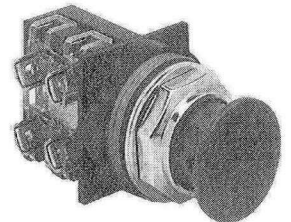
Flush



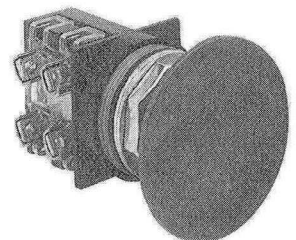
Extended



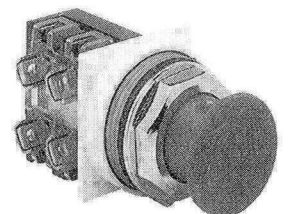
Recessed



1 1/8" Mushroom Head



2 3/8" Mushroom Head



Push-to-Latch, Turn-to-Release

9 PUSH BUTTONS

- ① Supplied with 4 caps: red, green, yellow, and black.
- ② Supplied with 4 caps: brown, blue, orange, and white.
- ③ To order assembled units with a different color, substitute the letter below in place of the asterisk in the part number above and add the required adder to the list price.
- ④ Special order—nonstock.

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 Type 4X applications, protective caps will improve corrosion resistance.

Nameplates & Legend

Inserts pages 9-33, 9-34
 Technical Data pages 9-3 to 9-5
 Drilling Plan and Dimensions page 9-4

* Cap colors available

Color	Insert in place of asterisk (*)	List Price Adder, GO-10P1	
		Push Buttons	Mushroom Heads
Yellow	E	\$0.30	\$6.00
Blue	L	0.30	6.00
Orange	M	0.30	6.00
Brown	N	0.30	6.00
White	W	0.30	6.00
No Cap	A	—	—



Section 9

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.



Heavy-Duty 30mm Push Buttons, Selector Switches, Indicating Lights, Accessories (CR104P Series)	9-2 to 9-36
Light Tower Status Indicating Lights (SL Series)	9-37 to 9-47
C-2000™ 22mm Global Push Buttons (P9 Series)	9-48 to 9-100
Standard-Duty Push Button Control Stations (CR2943 and CR2941 Series)	9-101 to 9-103
Palm Switches	9-104

References:
See Publication Index, Section 18.

9 PUSH BUTTONS

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	<u>Operating</u> -25° to +70°C -13° to +158°F		<u>Storage</u> -40° to +70°C -40° to +158°F
Climate suitability/humidity	<u>Climate Type</u> Temperate Wet Hot Wet Variable Wet	<u>Temperature</u> 74°F (23°C) 74°F (23°C) 104°F (40°C) 74° to 104°F (23° to 40°C)	<u>Relative Humidity</u> 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		<u>Standard recessed push buttons</u> Without contact blocks 1.625 lb./f. With 1 NO contact block 2.5 lb./f. With 2 NO contact blocks 3.5 lb./f. With 3 NO contact blocks 4.0 lb./f.	<u>Standard flush push buttons</u> 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	<u>Characteristic</u> Thermal current Insulation voltage Protection from electrical shock Insulation category Dielectric strength Short-circuit protection	10A per IEC 947-5-1 Ui = 660 Vac/dc Class I per IEC 536 for metal operators; Class II (double insulation) per IEC 536 for plastic operators Group C per VDE 0110 2500 V 10A time-delay fuse gG per IEC 269.1 & 269.3	<u>Value</u>	
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 Ⓞ	
			Make	Break
	600	10	7200	720
Ⓞ 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		2-30 Vdc	
	Continuous current (maximum)		.001-.15A	
	Resistive, watts (VA)		4.5 VA maximum	
Power supply resistor values	Input	Resistor value		
		750 ohms ±5%, 5 watts, 2 resistors in series 2700 ohms ±5%, 5 watts, 2 resistors in series		

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