

# CAM OPERATED **ROTARY SWITCHES**



## SERIES CS PRODUCT PROFILE

c3controls **Cam Switches** are available with up to 6 positions and up to 10 poles, making our Cam Switches the right solution for almost any control and load break switch application. Our spring returned operators are rated Type 1, 3, 3R, 12 and IP65 to withstand the most punishing environments. Our maintained operators share the same ratings with the addition of the 4/4X rating. All switches are suitable for global applications having met UL, CSA, and IEC standards.



### FEATURES AND BENEFITS

- Cam Switches offer the convenience of a single part number, making it easy to find what you need.
- Certified as Manual Motor Controllers per UL standards requirements.
- Rated from 10A to 32A up to 690V AC with various operator types, including key lock, lever, and lockable lever for use in all your applications.
- Available in 45°, 60°, and 90° switching angles, and up to 6 positions for multiple variations.
- Operators and switches conveniently install in a standard, round 22.5mm (7/8") mounting hole that is interchangeable with common pilot devices and other control switches.
- Front plates are available in two different sizes; 32mm x 32mm and 48mm x 48mm, and come in yellow, grey, black, or aluminum.
- Round operator without front plate is available for use with standard and custom legend plates for simple and convenient customization.

### UNIQUE PRODUCT FEATURES

- High-grade engineering plastics like nylon, celcon, and glass filled polyamide provide outstanding mechanical strength and longlife with electrical insulating properties.
- The simple latching mechanism allows the switch to be easily wired outside the control panel and then securely installed on the mounted operator.
- A wide variety of operators can be "mixed-and-matched" with different switch types to reduce inventory requirements and customize the switch appearance.
- Operators can be locked OFF with a padlock or key switch to prevent unauthorized operation of switch.
- Markings are integral to the front plate and protected so they won't wear off over time.
- Switches are available with IP20 guarded terminals to protect against accidental contact with live parts.
- Combination head terminal screws include captive terminal clamps for ease of wiring.
- Clearly marked terminals make wiring fast and easy.

### APPLICATIONS

Our compact, easy to install cam operated rotary switches cover a wide range of applications.

- **On-Off Switches** – Ability to isolate power and connect and disconnect various types of loads and control equipment.
- **Changeover Switches** - Three position switches are used to operate two different circuits such as a normal and standby power supply.
- **Multi-Step Switches** - Multiple position switches are used to connect a variety of loads/circuits to a common electrical supply, or vice-versa, in a defined sequence.
- **Ammeter Switches** - Multi-position switches are used to connect an ammeter directly to an electrical supply or through a current transformer. This measures the current in different phases or circuits with a single switch and a single ammeter.
- **Voltmeter Switches** - Multi-position switches are used to connect a voltmeter directly to an electrical supply to measure voltage between phases or between phase and neutral with a single switch and a single voltmeter.
- **Motor Reversing Switches** - Used to manually control the direction of rotation (forward or reverse) of single phase or three phase motors.



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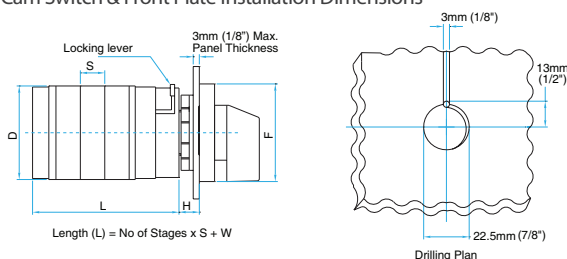
# CAM OPERATED ROTARY SWITCHES

## SPECIFICATIONS

	SWITCH CURRENT RATING CODE				
		G10	G16	G25	G32
	UNITS				
ELECTRICAL UL APPLICATIONS					
Rated Operating Voltage, Ue	VAC	460	600	600	600
Rated Operating Current, Ie	A	10	15	20	30
Rated Three Phase Power, Pe					
@ 240V AC	HP	1	2	5	5
@ 480V AC	HP	2	3	10	10
@ 600V AC	HP	—	5	15	15
Rated Single Phase Power, Pe					
@ 120V AC	HP	1/3	1/3	1	1
@ 240V AC	HP	3/4	1	3	3
Short Circuit Ratings					
With Class J and CC Fuses	kA	1	5	5	5
Maximum Fuse Size	A	10	25	50	50
Electrical Endurance at Maximum Ie	Ops.	10,000	10,000	10,000	10,000
Maximum Operating Rate	Ops./Hr.	120	120	120	120
IEC APPLICATIONS					
Rated Insulation Voltage, Ui	VAC	440	690	690	690
Rated Isolation Voltage, Uiso	VAC	250	415	415	415
Rated Impulse Voltage, Uimp	kV	4	6	6	6
Rated Operating Voltage, Ue	VAC	440	690	690	690
Rated Uninterrupted Current, Ith	A	12	20	32	40
Rated Operating Current, Ie					
AC-21A	A	10	16	25	32
Rated Three Phase Power, AC-23A, Pe					
@ 220 ~ 240V AC	kW	1.8	3	5.5	7.5
@ 380 ~ 440V AC	kW	3	7.5	11	15
@ 500 ~ 690V AC	kW	—	7.5	11	15
Rated Three Phase Power, AC-3, Pe					
@ 220 ~ 240V AC	kW	1.5	2.2	4	5.5
@ 380 ~ 440V AC	kW	3	5.5	7.5	11
@ 500 ~ 690V AC	kW	—	5.5	7.5	11
Short Circuit Ratings					
With Type gG/gM Fuses	kA	3	5	10	10
Maximum Fuse Size	A	10	16	25	32
MECHANICAL					
Mechanical Endurance	Ops.	100,000			
Maximum Operating Rate	Ops./Hr.	300			
ENVIRONMENTAL					
Ambient Operating Temperature	°C / °F	-25 to +55 / -13 to +131			
Altitude	m/ft.	2,000/6,562			
Ingress Protection					
Switch Type					
Code U		IP10			
Code G		IP20			
Operators	—				
Maintained		Type 1, 3, 3R, 4/4X, 12, and IP65			
Spring Return		Type 1, 3, 3R, 12, and IP65			
CONSTRUCTION					
Conductor Size					
UL/CSA	AWG	18 ~ 16	16 ~ 12	16 ~ 12	14 ~ 10
Solid/Multi-Strand	mm²	0.7 ~ 1.5	1.5 ~ 4	1.5 ~ 4	2.5 ~ 6
Fine Strand with Sleeve	mm²	0.7 ~ 1.5	1 ~ 2.5	1 ~ 2.5	1.5 ~ 4
ROHS COMPLIANCE					
For RoHS compliance documentation by product, refer to c3controls.com.					

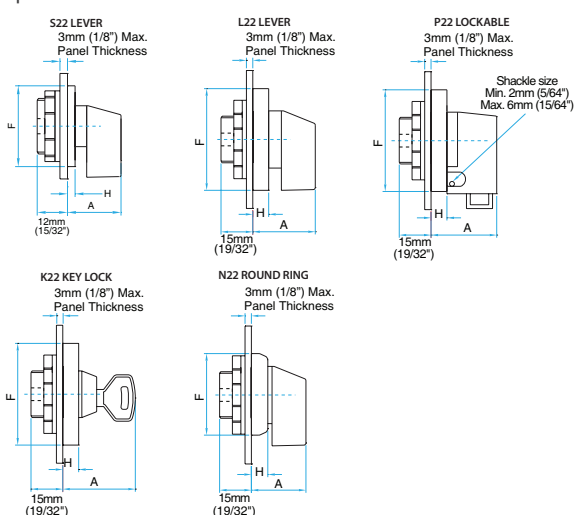
## DIMENSIONS

### Cam Switch & Front Plate Installation Dimensions



SWITCH & FRONT PLATE INSTALLATION DIMENSIONS						
CURRENT RATING CODE	INSTALLATION CODE	S	D	F	H	W
G10 & U10	S22	9.5mm (3/8")	33mm (1-19/64")	32mm (1-17/64")	13mm (33/64")	28.5mm (1-1/8")
G16 & U16	N22, L22, P22, K22	12mm (15/32")	46mm (1-13/16")	48mm (1-57/64")	15mm (19/32")	37mm (1-15/32")
G25	N22, L22, P22, K22	15mm (19/32")	50mm (1-31/32")	48mm (1-57/64")	15mm (19/32")	37mm (1-15/32")
G32	N22, L22, P22, K22	15mm (19/32")	50mm (1-31/32")	48mm (1-57/64")	15mm (19/32")	37mm (1-15/32")

### Operator Dimensions



OPERATOR DIMENSIONS			
INSTALLATION CODE	H	A	F
S22	3.0mm (1/8")	22.0mm (7/8")	32mm (1-17/64")
L22	7.5mm (19/64")	29.5mm (1-5/32")	48mm (1-57/64")
P22	7.5mm (19/64")	31.7mm (1-1/4")	48mm (1-57/64")
K22	7.5mm (19/64")	34.2mm (1-23/64")	48mm (1-57/64")
N22	7.8mm (5/16")	25.8mm (1-1/16")	38.5mm (1-33/64")

## CERTIFICATIONS

### Conformity to Standards:

UL 508  
CSA C22.2 No. 14  
IEC 60947-1, 60947-3, 60947-5-1

### Certifications:

UL File #: E187641 (Guide NLRV, NLRV7)  
CE Marked (per EU Low Voltage Directive 2006/95/EC and RoHS Directive 2011/65/EU)



Visit [c3controls.com](https://c3controls.com) to download product certifications.



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