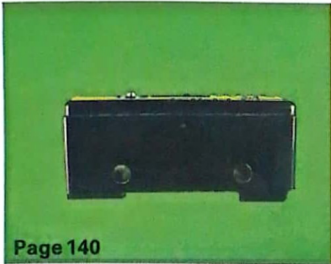


# Burgess

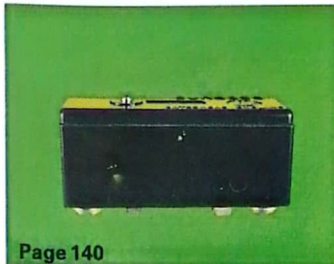
## Standard Size, Moulded Case, Exposed Terminal Micro Switches

Single-pole, changeover snap-action, switches incorporating beryllium copper trident spring mechanisms, silver contacts and accessible terminals. Their quality design and long history of success ensures satisfactory service in a wide variety of applications in domestic appliances, office machinery or laboratory or workshop equipment, especially when small controlled movements and accurate repeat performance are essential requirements.



Page 140

CR1 switch type (see opposite page) with pin plunger actuator



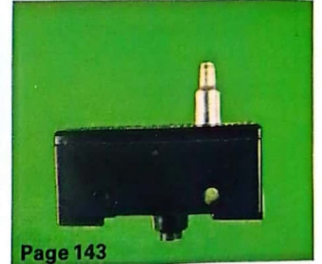
Page 140

WR22 switch type designed for heater loads



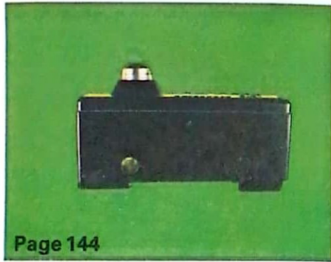
Page 143

CT2 switch type with small diameter spring plunger actuator



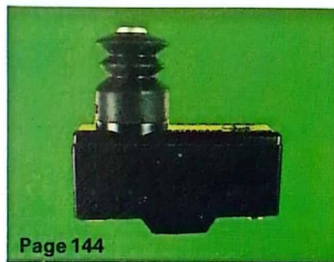
Page 143

CX switch type with non-automatic resetting mechanism



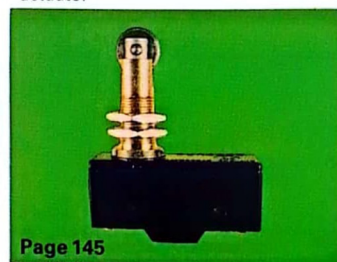
Page 144

Low profile spring plunger actuator



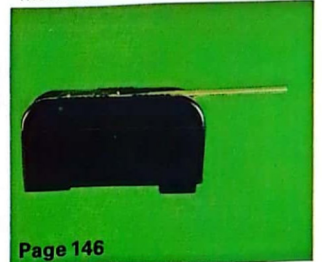
Page 144

Heavy-duty spring plunger actuator



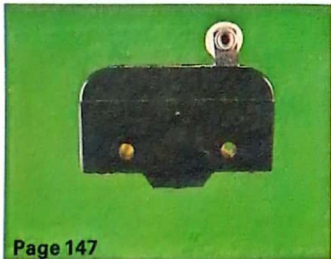
Page 145

Roller-plunger actuator with screwed plunger sleeve for single-hole mounting



Page 146

Normal action plain lever actuator



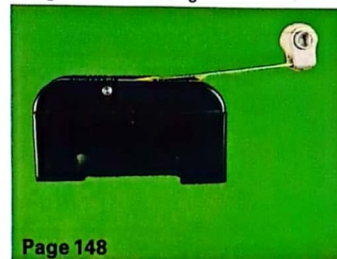
Page 147

Short normal action lever actuator with roller



Page 148

Reverse action plain lever actuator



Page 148

Reverse action lever actuator with roller



Page 149

Reverse action lever actuator with uni-directional roller

A selection from the range of 36 switches which are described individually on pages 140-149

## Accessories

### Auxiliary Actuators

Long plain plunger and roller-plunger auxiliary actuators for use with pin plunger actuated switches – see pages 141-142.

Roller-lever auxiliary actuator for use with small diameter spring plunger actuated switches – see page 143.

### Terminal Covers

Terminal covers, bases and conduit boxes suitable for use with many switch types – see page 150.

## Cross References

Standard-sized switches with enclosed terminals – pages 50-53 and 151-155.

Standard-sized double-break switches – pages 55 and 157-158.

Explosion-proof switches – pages 74-76 and 200.

## Installation and Service

### Mounting

Most models are suitable for side-mounting to a flat surface. Use M3.5 or #6 unified thread screws and add to their security by coating them with epoxy resin. Some models have screwed plunger sleeves for single-pole mounting. Recommended clearance hole diameter 12.7 mm (0.5 in) or tapped hole 11.9 mm (0.47 in) diameter, 32 TPI Whitworth form. Full installation recommendations are provided with each consignment of switches.

### Environmental Protection

Terminals are exposed. Mechanisms generally are protected to IEC Code IP40. One model, reference CR1S/330, page 143, is sealed and pressure tested.

### Service Recommendations

Keep switches reasonably clean, especially around the actuator area. Check periodically for secure mounting and for wear on the actuating medium.

# Switch Types

**CR1** Single-pole, snap-action, changeover micro switches featuring small movements and exceptional repeat accuracy. Case and lid are mouldings. Contacts are silver. Three terminals are solder tags secured by 6BA screws located on a flat base with moulded barriers. Normally open only and normally closed only working can be achieved by using only two terminals.

Table 1

Volts	Resistive Load	Tungsten Lamp Load		Inductive Load
		NC	NO	
AC				
125	15	1.5	1.0	5
250	15	0.7	0.5	5
380	15			3
480	15			2
DC				
Up to 15	15	3	1.5	8
30	2	3	1.5	1
50	0.7	0.7	0.7	0.5
75	0.6	0.5	0.5	0.2
125	0.5	0.4	0.4	0.03
250	0.25	0.2	0.2	0.02

Switches with plunger or normal action lever actuators.

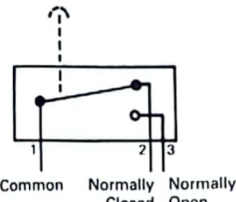
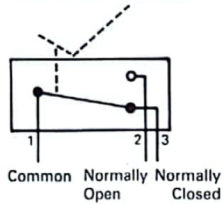


Table 2

Volts	Resistive Load	Tungsten Lamp Load		Inductive Load
		NC	NO	
AC				
125	15	1.0	1.5	5
250	15	0.5	0.7	5
380	15			3
480	15			2
DC				
Up to 15	15	1.5	3	8
30	2	1.5	3	1
50	0.7	0.7	0.7	0.5
75	0.6	0.5	0.5	0.2
125	0.5	0.4	0.4	0.03
250	0.25	0.2	0.2	0.02

Switches with reverse action lever actuators.



**CT2** Differ from CR1 types in two respects – contact separation is greater, adding to efficiency in inductive load circuits while slightly increasing movement differential and actuating force, and terminals are 6-32 UNC screws and cup washers located on a stepped base to achieve maximum creepage distance.

Table 3

Volts	Resistive Load	Tungsten Lamp Load		Inductive Load
		NC	NO	
AC				
125	15	3	1.5	15
250	15	2.5	1.5	15
380	15			5
480	15			4
DC				
Up to 15	15	3	1.5	10
30	5	3	1.5	3
50	1.25	0.7	0.7	0.7
75	0.75	0.5	0.5	0.3
125	0.5	0.4	0.4	0.05
250	0.25	0.2	0.2	0.03

Switches with plunger or normal action lever actuators.

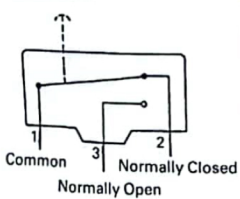
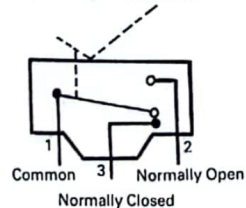


Table 4

Volts	Resistive Load	Tungsten Lamp Load		Inductive Load
		NC	NO	
AC				
125	15	1.5	3	15
250	15	1.5	2.5	15
380	15			5
480	15			4
DC				
Up to 15	15	1.5	3	10
30	5	1.5	3	3
50	1.25	0.7	0.7	0.7
75	0.75	0.5	0.5	0.3
125	0.5	0.4	0.4	0.05
250	0.25	0.2	0.2	0.03

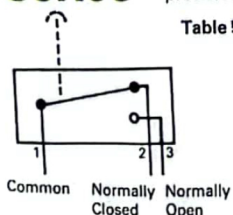
Switches with reverse action lever actuators.



**C6R06** Similar to CR1 type but very sensitive mechanisms of great precision.

Table 5

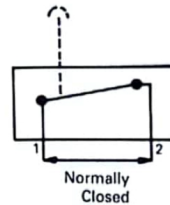
Volts	Resistive Load	Tungsten Lamp Load		Inductive Load
		NC	NO	
AC				
125	5	1	0.5	2
250	5	0.5	0.25	2
Not recommended for use in DC circuits				



**WR22** Single-throw, normally closed only, with two heavy-duty solder tag terminals. Designed primarily for heater loads in thermostat or similar applications where precise movements and fast transit time with high electrical ratings are required.

Table 6

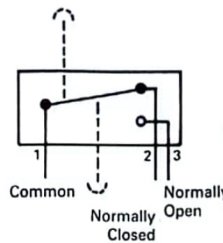
Volts	Resistive Load	Tungsten Lamp Load		Inductive Load
		NC	NO	
AC				
125	15	2		5
250	15	1		5
380	15			3
480	15			2
Not recommended for use in DC Circuits				



**CX** Non-automatic resetting mechanism. Actuation is normal but the mechanism remains in the operated condition when the actuator is released. Manual reset is achieved by pressing a button on the switch base. In other respects similar to CR1 types.

Table 7

Volts	Resistive Load	Tungsten Lamp Load		Inductive Load
		NC	NO	
AC				
125	15	3	1.5	15
250	15	3	1.5	15
380	15			15
480	15			15
DC				
Up to 15	15	5	4	15
30	15	3.5	2	15
50	5	2	1.5	5
75	2.5	1	0.75	2
125	0.75	0.5	0.5	0.5
250	0.5	0.25	0.25	0.25
Reset switches off load				



## Integral Actuators

### Plungers

Use when the means of actuation travels linearly in the same direction as the plunger motion and is amenable to control within the limits of the switch. Side thrust and excessive overtravel should be avoided.

Pin plungers: the insulated end of the small steel rod bears directly on the trident spring mechanism of the switch so movements are small and movement differential is minimal. Switches so fitted exhibit exceptional repeat accuracy and may be used with confidence as sensitive detectors. Individual switch descriptions on pages 140-141.

Spring plungers: the actuator mechanism incorporates a spring which assists the return of the plunger after operation and also has the effect of increasing the amount of available overtravel. Four styles are available – small diameter, low profile, heavy-duty with cowl protection and a larger type with screwed sleeve which offers facilities for single-hole mounting. Individual switch descriptions on pages 142-145. (See also Auxiliary Actuators, pages 141-142.)

### Roller Plungers

Use when the means of actuation exhibits some sliding movement which would create undesirable side thrust on plain plungers. They may be used also on controlled cam applications where great precision is demanded. The rollers are free running and located securely on spring plungers either in line or across the line of the switch. The plunger sleeves are screwed for optional single-hole mounting. Individual switch descriptions on page 145. (See also Auxiliary Actuator, page 142.)

### Normal Action Levers

Switches so fitted contain the letter 'K' in their ordering references. Depression of the lever moves the plunger and operates the switch; the plunger and switch mechanism return to free position when the lever is released. Refer to pages 145-147.

Plain levers: available with or without return spring and suitable for most rotary cam or slide application. Produced in stainless steel.

Roller levers: fitted with return spring and available with long or short levers. The free-running plastic roller reduces friction between a fast moving cam and the lever.

### Reverse-Action Levers

Identified in switch ordering references by the letter 'M'. Depression of the lever against spring action releases the plunger and thus the usual positions of the normally open and normally closed contacts and terminals are reversed. The lever action increases available overtravel, while the terminal configuration has advantages in certain high inrush circuits. See pages 147-149.

Plain levers: suitable for most rotary cam or slide applications.

Roller levers: available with long, medium or short levers. Use to minimise friction on fast moving cams.

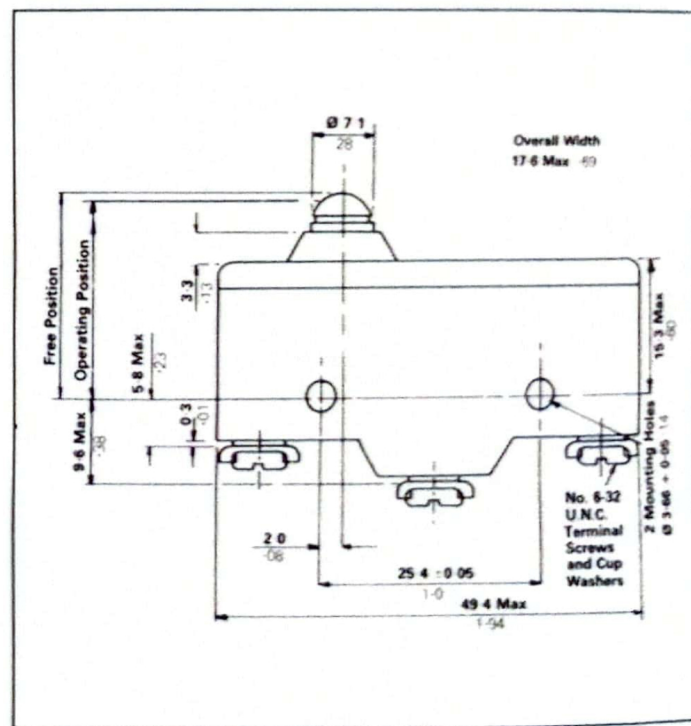
Uni-directional roller levers: the roller will hold firm in one direction of operation and will collapse without actuating the switch in the opposite direction. After collapse, the roller will restore to its normal position under the influence of its own spring.

# CT2D2-A2



<b>Terminals</b>	Three 6-32 UNC screws and cup washers on a stepped base	
<b>Electrical Rating</b>	Recommended maximum 15A on 125 or 250 Vac. Full ratings on page 49 (Table 3)	
<b>Free Position (max)</b>	22.8 mm	0.90 in
<b>Operating Position</b>	22.3	0.88 in
	$\pm 0.4$ mm	
<b>Movement Differential (max)</b>	0.08 mm	0.003 in
<b>Available Overtravel</b>	2.3 mm	0.09 in
<b>Actuating Force (max)</b>	4.2 N	15 ozf
<b>Release Force (min)</b>	1.7 N	6 ozf
<b>Mechanical Life</b>	Between 1 and 10 million operations	
<b>Enclosure</b>	Mechanism only: IP40 Exposed terminals	
<b>Temperature</b>	$-10^{\circ}$ to $+85^{\circ}\text{C}$	
<b>Weight</b>	35 g max	
<b>Approvals*</b>	CSA, SEMKO, SEV, UL, VDE	

*This model and similar models are described in detail on pages 48-49*



**Actuator Mechanism** Low-profile spring plunger  
Single-pole, changeover