

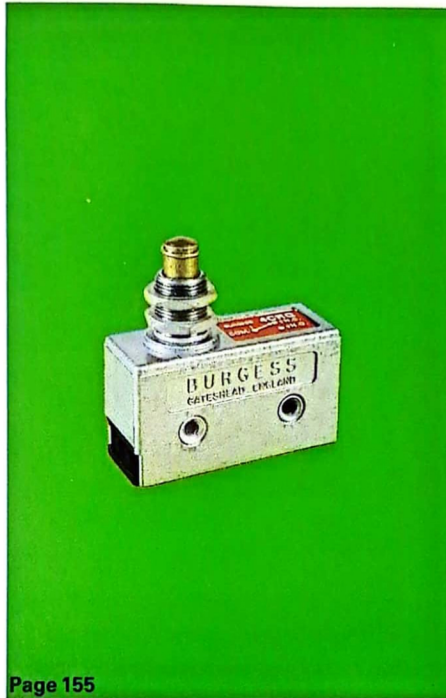
Burgess

Standard Size, Metal Case, Enclosed Terminal Micro Switches

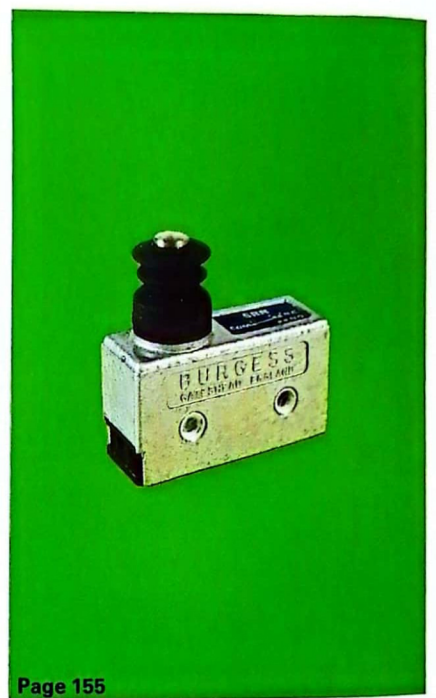
Complementary to, and generally dimensionally interchangeable with, the plunger actuated moulded case micro switches described on the previous two pages, these metal cased models offer increased resistance to physical damage as well as a greater variety of styles. All are single-pole, changeover, snap-action switches with trident spring mechanisms exhibiting repeat accuracy of a very high order.



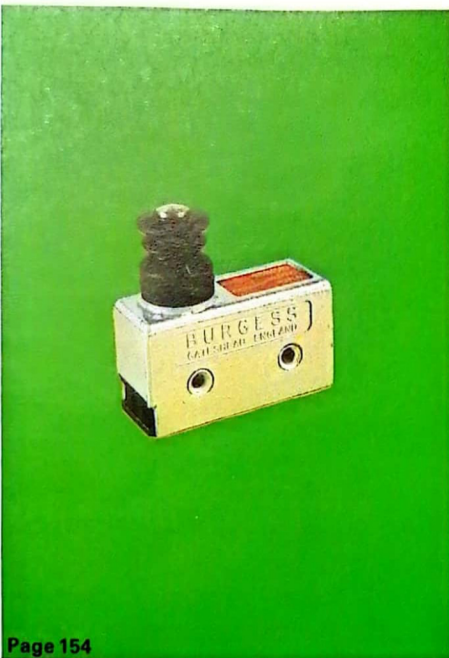
Cowl protected spring plunger actuator models for normal or moist environments



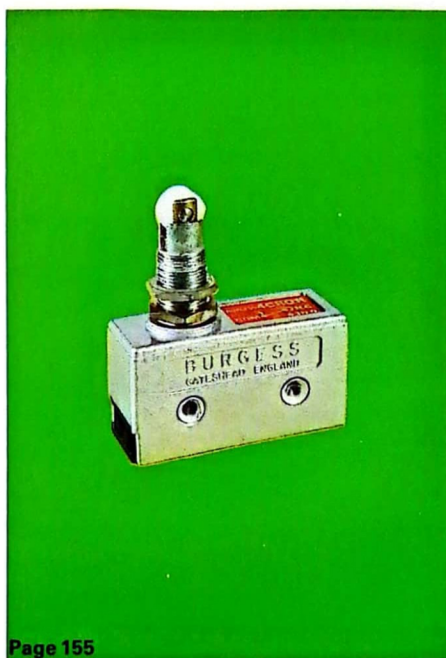
Spring plunger actuator with screwed sleeve for optional single-hole mounting



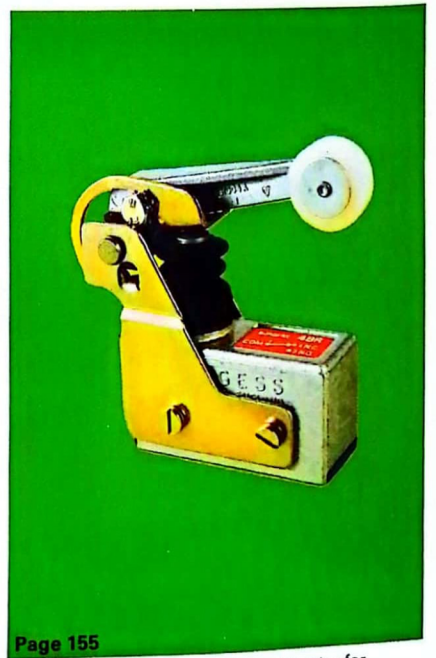
"Split contact" model with two top and two bottom fixed contacts and five terminals



Models with alternate operating characteristics



Spring plunger actuator with in-line roller. Single-hole mounting facilities



Adjustable roller-lever auxiliary actuator for optional use with switches having protected plungers

Individual descriptions of all these models appear on the pages shown.

Construction

Mechanism

Switches with reference prefixed '4': single-pole, changeover, snap-action micro switches using beryllium copper trident spring with silver contacts. Normally closed only or normally open only work is obtained by using just two of the three terminals provided. Switches with references beginning '4CR' have slightly off-set plunger actuators, a feature which affects operating characteristics. All '4B' and '4C' models except 4CR7 have electrical ratings shown in table 1. Switch reference 4CR7 features wide contact separation which improves its DC performance and increases its actuating force; its electrical ratings are shown in table 2.

Switch reference 5BR: this is a 'split contact' model with five silver contacts and five terminals. In the free position the moving contact mates with two top contacts and, after changeover, it mates with the bottom two contacts. This arrangement meets the needs of some industrial applications but a discussion with Burgess Engineers is recommended before use. Frequently it is advantageous to use a double-break switch to provide the same facilities.

Enclosure

Metal case with plastic insulation and base plate. The cowl fitted to protect plungers is synthetic rubber.

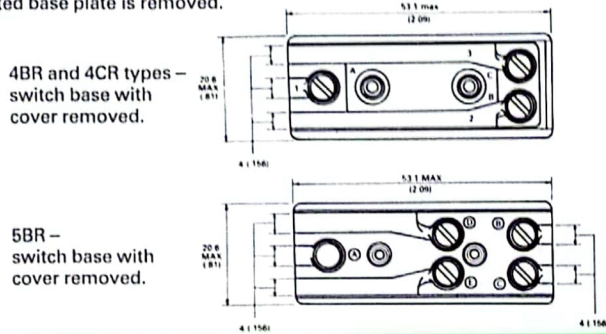
Integral Actuators

Protected plungers: heavy duty steel type with cowl. The return to free position after operation is spring assisted.

Plungers with screwed sleeves: spring assisted, plain or with in-line plastic roller.

Terminals

6BA screws and captive washers set in wiring channels and accessible when the insulated base plate is removed.



4BR and 4CR types – switch base with cover removed.

5BR – switch base with cover removed.

Electrical Ratings

Ratings, in amperes, are recommended maxima. The abbreviations NC and NO mean normally closed and normally open terminals.

Table 1 – Standard Ratings

Voltage	Resistive Load	Tungsten Lamp Load		Inductive Load
		NC	NO	
AC				
125	15	1.5	1.0	5
250	15	0.7	0.5	5
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

Table 2 – Switch Reference 4CR7

Voltage	Resistive Load	Tungsten Lamp Load		Inductive Load
		NC	NO	
AC				
125	15	3	1.5	15
250	15	3	1.5	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

Table 3 – Switch Reference 5BR

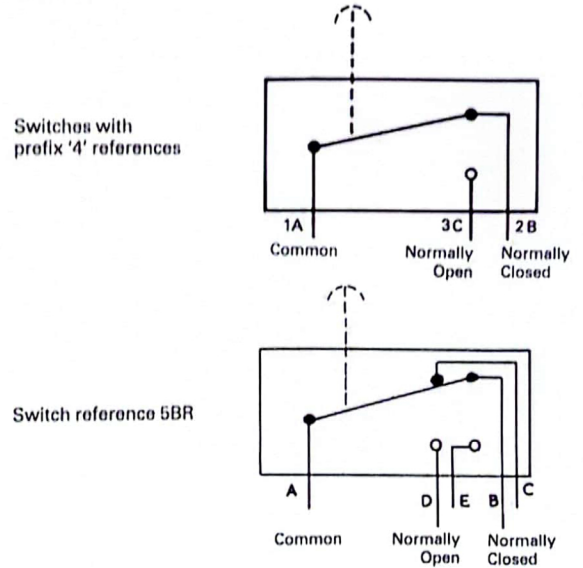
Voltage	Resistive Load	Tungsten Lamp Load		Inductive Load
		NC	NO	
AC				
125	10	1.5	1.0	5
250	5	0.7	0.5	5
DC				
Up to 15	15	3	1.5	8
30	2	3	1.5	1
50	0.7	0.7	0.7	0.5
75	0.6	0.5	0.5	0.2
125	0.5	0.4	0.4	0.03
250	0.25	0.2	0.2	0.02

Installation and Service

Mounting

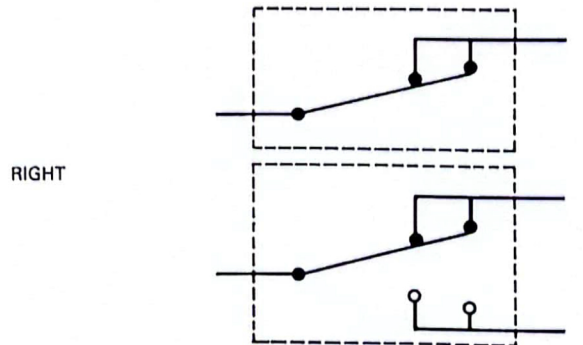
All models are suitable for side-mounting to a flat surface. Use M3.5 or #6 unified thread screws, preferably with lockwashers. Models with screwed sleeves may be single-hole mounted. The recommended clearance hole is 12.7 mm (0.5 in) diameter, or use a tapped hole of 11.9 mm (0.47 in) diameter, 32 TPI Whitworth form. Full installation instructions are provided with each consignment of switches.

Diagram of Connections

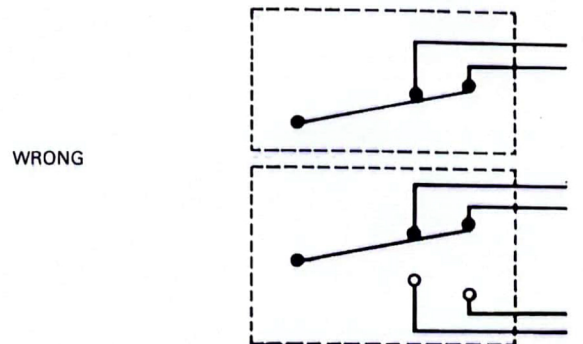


5BR Switch Connections

Split contact switches should be installed with care. If for any reason they are used as normal on-off or changeover switches they should be connected in the following manner:-



Connections made in the manner shown below should be avoided:



Environmental Data

Note one model, reference 4BR/510, page 154, 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.

Cross References

Moulded cased models – pages 50-51 and 151-153.
Double-break models – pages 55 and 157-158.

5BR



Actuator Mechanism Spring plunger with cowl protection
Single-pole, changeover, split contact, the moving contact connecting with two top fixed contacts in the free position and with

Terminals two bottom fixed contacts in the operated position
Five 6BA screws and captive washers behind a removable cover

Electrical Rating Recommended maxima 10A on 125v, 5A on 250 Vac.
Full ratings on page 53 (table 3)

Free Position (max) 40.8 mm 1.6 in
Operating Position 39.3 ±0.4 mm 1.55 in

Movement Differential (max) 0.13 mm 0.005 in
Available Overtravel 4.6 mm 0.18 in
Actuating Force (max) 17.8 N 64 ozf
Release Force (min) 4.4 N 16 ozf

Mechanical Life Between 10,000 and 100,000 operations

Enclosure Mechanism only: IP54
Temperature -10° to +85°C
Weight 100 g max

This model and similar models are described in detail on pages 52-53

