

(SENSITIVE, NON-LOCKING ACTION)

BULGIN 'BASIC' MICRO SWITCHES.

THESE Micro Switches represent the finest of this class of switch. Their action is simple, yet reliable and trouble-free, and their performance is consistent and long-lived. All the internal springs are of the best hardened beryllium-copper alloy, and the heavy contacts are of pure silver. The action is precise and snappy. Operating buttons, and the cases, are of moulded thermo-setting bakelite material, black. Each model is S.P.C.-O., universal for on-off or off-on or C.-O. uses. They can be operated by light pressures (down to about 1.5 oz.) and/or movements as small as 0.015". Yet they are consistent, and can be relied on for 500,000 operations at ratings, or more. Normal Max. and Min. Sinusoidal Rates of Operation (incl. permitted 'pre-travel' and 'over-travel,' for all models on pp. 87, 88):—**FASTEST:** 1 full cycle of total drive-plus-total-retraction in 0.2 Sec. (200 mS.),=all drive in 0.1 Sec.,=5 cycles of movement (total) per Sec. **SLOWEST:** 1 full cycle in 4.0 Secs.,=total drive in 2 Secs.,=1 c/S.

MECHANICAL DATA

	1	2	3	4	5	6	7
	List No.	Approx. figures in INCHES				Approx. figures in OZS.	
		Contact gap	Average Pre-travel	Max. Differential	Over-travel	Average Operating Pressure	Average Maintaining Pressure
Medium Pressure	S.500	0.01	0.015	0.003	0.009	9	6½
	S.501	0.04	0.017	0.010	0.009	12	5½
	S.502	0.07	0.020	0.015	0.006	14	5
Light Pressure	S.503	0.01	0.023	0.005	0.020	3	2
	S.504	0.04	0.030	0.015	0.016	4	1½
	S.505	0.07	0.033	0.020	0.010	5	1½



List Nos. S.500-502

Dimensions:—1½" × ¾" × 1" max. height (50 mm. × 17.5 mm., × 22.75 mm. max. height). Fixing:—2 × 4 B.A. clearance holes @ 1" ± 0.005" crs. (2 × 3.8 mm. Ø holes @ 25.4 mm. ± 0.125 mm. centres).

Notes.—Column 2: Working tolerance, ± 25%. Column 3: Subject to approx. ± 33% variation. 'Pre-travel' is all the movement of the button before the contacts snap over. Column 4: The normal max. figure: 'Differential' is reversed movement to restore the contacts to the unoperated state. Column 5: This is the max. movement allowable to users as further depression of the button after the action has snapped over. Some switches may possess more over-travel, but greater figures are not guaranteed.

ELECTRICAL DATA, 50~ RATINGS

List Nos.	Max. voltage, across open contacts	Max. voltage, to mounting bolts	Max. voltage, contacts to button	Carrying and Peak-breaking Amps @ V. ~				
				up to 125	130-250	260-460	470-600	110-460
S.500, S.503	800 V. (Test) 400V. (working)	1,000V. (Test) 600V. (working)	1,000V. (Test) 600V. (working)	10 A.	5 A.	—	—	—
S.501, S.502, S.504, S.505	2,000V (Test) 600V. (working)	1,000V. (Test) 600V. (working)	1,000V. (Test) 600V. (working)	10 A.	5 A.	3 A.	2 A.	Motors, ½ h.p. max., direct switching

For DRY conditions, at N.T. & P. De-rate for damp & L.P. states.

Notes.—Cols. 2-4, 1-minute test. Cols 5-9, Making-current may be 3 times the carrying-current if initial surge drops to normal within 10 mS. All D.C. ratings must be agreed for specific actual uses, but are 1/30th-1/100th of A.C. ratings, except below 25 or 30 V., or in high-Ω circuits.

The above are the simplest and 'basic' types of Micro-sensitive switches. They are further available, as shown in the following page 87, with 'operator'-leaf attachments, operator-leaf-with-roller attachments, and with one-hole fixing and over-travel plunger drive. In addition Miniature or 'M' models are made—see pp. 89-91.

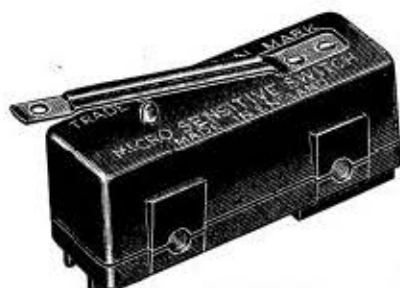


List Nos. S.503-505

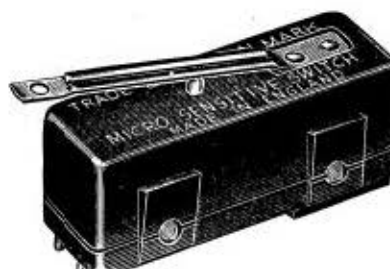
THIS further group of BULGIN Micro Switches covers the basic type (on opposite page) but with added external-leaf-operator. This extra fitment is made in stainless-steel spring alloy, for a working life of normal deflexions equal at least to the normal working life of the basic Switch. Some 500,000 operations is usually assured, under proper working conditions. The leaf-operator, acting as a lever, multiplies the distance of movement for operating the Switch, and slightly lessens the operating force, as well as increasing the permitted overtravel.

Dimensions : $1\frac{1}{8}" \times \frac{3}{8}" \times \frac{3}{4}"$ max. height (50 mm. $\times$ 17.5 mm., $\times$ 25 mm. max. height).

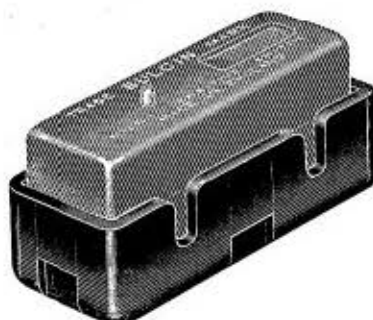
Fixing : 2 $\times$ 4 B.A. clearance holes @ $1" \pm 0.005"$ crs. (2 $\times$ 3.8 mm. $\varnothing$ holes @ 2.5 mm. $\pm$ 0.125 mm. centres).



List Nos. S.506-508



List Nos. S.509-511



Part No. 8541 (shown with List No. S.500 in-fitted but not in-fixed.)



S.735-739
(D.P. Assemblies can be supplied.)

MECHANICAL DATA

MODELS FITTED WITH EXTERNAL BLADE of stainless (spring) steel, to multiply the movement distances when operating upon tip of blade.

	List No.	Approx. figures in INCHES				Approx. figures in OZS.	
		Contact gap	Average Pre-travel	Max. Differential	Over-travel	Average Operating Pressure	Average Maintaining Pressure
Medium Pressure	S.506	0.01	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	4-5	2
	S.507	0.04	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	5-7	2
	S.508	0.07	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	6-8	3
	S.509	0.01	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	1 $\frac{1}{2}$ -3	1
	S.510	0.04	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	1 $\frac{1}{2}$ -3	1
	S.511	0.07	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	3-4	1

Notes.—Column 2 : Working tolerance, $\pm$ 25%. Column 3 : Subject to approx. $\pm$ 33 $\frac{1}{3}$ % variation. 'Pre-travel' is all the movement of the button before the contacts snap over. Column 4 : The normal max. figure ; 'Differential' is reversed movement to restore the contacts to the unoperated state. Column 5 : This is the max. movement allowable to users as further depression of the button after the action has snapped over. Some switches may possess more over-travel, but greater figures are not guaranteed.

ELECTRICAL DATA, 50~ RATINGS, same as for S.500-505, page 86.

BASE COVER AND SURFACE BASE MOUNTING ACCESSORY

FOR STANDARD BULGIN 'BASIC' MICRO-SWITCHES

THIS moulded thermosetting Bakelite Unit covers the rear terminals of standard BULGIN Micro Switches (see pages 86-88 and above), where shrouding is needed, using the same side-fixing 4 B.A. bolts ($\frac{3}{16}"$ longer); or it may itself be base-fixed, the Micro Switch then fixing to this Accessory only. Ample 'knock-outs' for entry of Cables. Intending users may have 'Installation Drg.' print on request, refer to "P/No. 8541."

NEW OPEN-BLADE MICRO-SWITCH

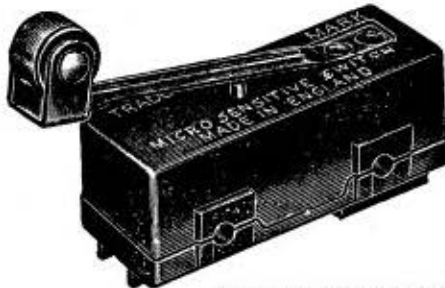
AN entirely new, first-in-U.K., "open-blade" micro-switch, with the famous BULGIN rolling-spring Q.M.Q.B. action, of high electrical-rating and long working life. This open unit, S.P.C.-O., is intended to be built into apparatus, switching-equipment, etc., of all kinds, and thus enclosed. It has snappy action, pure-silver contacts, beryllium-copper springs. O.A. dims.: $1\frac{1}{8}" \times \frac{1}{8}"$. Fixing: 2 holes 6 B.A. clear, at 0.236" crs. Elec. rating (provisional): from 3 A. at 250 V. max., to 6 A. max. at 12 V. and less, down to 0.01 V. (min.), all A.C. (D.C. ratings by agreement, above 28 V.) 500 V. max. test-V. between contacts, and to Earth.

List Nos.	Action
S.735	S.P.C.-O., biased action (self return)
S.736	S.P.C.-O., locking action
S.737	S.P.M.-B., biased, press for "ON"
S.738	S.P.M.-B., biased, press for "OFF"
S.739	S.P.M.-B., locking action

INSTALLATION DRG. OR ADDITIONAL DETAIL DATA UPON REQUEST

WITH ROLLER ATTACHMENTS

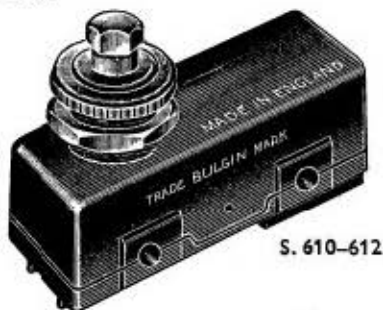
TO increase the already numerous applications of the basic types of Bulgin-Micro-Sensitive-Switches comes this New Roller-attachment, designed to increase the varieties of the external-leaf models, List Nos. S.506-511 (p. 87). These rollers are pivoted and mounted on the leaf-end ready for use. Rollers are fully free running and obtainable in the following materials:—Nickel-plated Brass, Graphite-compound, Tufnol and Stainless-Steel. Please Note ordering details in table.



TYPE OF ROLLER	Add Suffix-Code-letters below to any List No. in the S.506-511 range
Nickel-plated Brass Roller	-/RB.
Graphite-compound Roller	-/RG.
Tufnol type Roller	-/RP.
Stainless-Steel Roller	-/RSS.

MICRO-SWITCHES WITH ONE-HOLE FIXING BUSHES

THIS useful variety of BULGIN Micro-Sensitive-Switches has one-hole fixing bush for $\frac{1}{8}$ " max. panel thickness, bush $\varnothing = \frac{1}{8}$ ", 32. T.P.I., supplied complete with front-of-panel knurled ring-nut, and (essential) rear-of-panel hex.-nut. Plunger normally with nickelled brass head; this is changeable, for special heads in quantity only to any individual requirements. Full S.P.C.O. action, universal for on-off, off-on, or C.-O. elec. ratings as types S.500-502 on page 86. Mechanical data:—



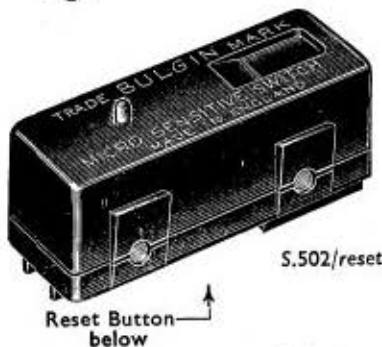
S. 610-612

1	2	3	4	5	6	7	8
List No.	Approx. figures in INCHES				Approx. figures in OZS.		For Elec. data, see p. 84 under Type
	Contact Gap	Average Pre-travel	Max. differential	Total Travel	Average Operating Pressure	Average Pressure for Total Travel	
S.610	0.010	0.015 to 0.030	0.003	$\frac{1}{32}$	9		S.500
S.611	0.040		0.010		12		S.501
S.612	0.070		0.030		14		S.502

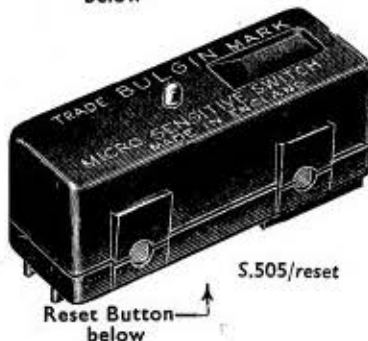
Electrical data:—See types S.500, S.501, S.502, on page 86, to same units-digit in List No.

MICRO-SWITCHES WITH RESET-BUTTON IN BASE

WHILST all foregoing BULGIN Micro-Sensitive Switches have 'biased' or 'non-locking' action (the button and contacts returning to unstressed position as soon as pressure is removed), we can now offer two models with locking action; return of drive button and contacts is effected by a second, "RESET," button, at base. Only after operation of the Reset-button, may the Drive-button again be depressed to re-operate the switch. Mechanical-data as below; elec.-data as types of same List No. (without 'RESET'-suffix) on page 86.



S.502/reset



S.505/reset

1	2	3	4	5	6	7
List No.	Approx. figures in INCHES				Approx. figures in OZS.	
	Contact Gap	Operating-Button: Average Pre-travel	Reset-Button: Max. Total-travel	Operating-Button: Average Total-travel	Average Operating pressure	Average Reset pressure
S.502/Reset	0.07	0.020	$\frac{1}{32}$	0.030	6-9	2½-3½
S.505/Reset	0.07	0.030	$\frac{1}{32}$	0.040	2½-3½	2½-3½

MINIATURE MICRO-SENSITIVE SWITCHES 89

(LIGHT-PRESSURE OR COIN-OPERATION TYPES)

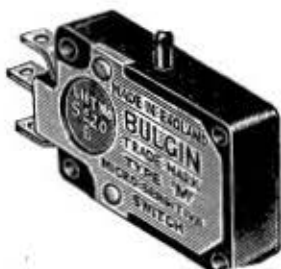
OVER 500,000 OPERATIONS GUARANTEED

BULGIN MINIATURE or 'M'-TYPE MICRO SWITCHES

THE newest additions to the range of BULGIN Micro-sensitive switches are these **MINIATURE** Type- "M" Models. Manufactured to the usual BULGIN superlative quality and high standards and specifications, these switches are made with high grade black moulded 'Bakelite' bodies (with styrene type-colour-code covers), fitted with internal springs of hardened Beryllium-copper alloy and with heavy contacts of pure silver. Operating buttons can be of stainless steel, *specially to quantity order* or are moulded as STANDARD (for high insulation) from 'Bakelite'. The many models now available are augmentable by detachable plates to take different switching operators (see p. 90). The switching action is fully 'snap,' q.m.b., with the unique "C-spring," or rolling spring principle, and solder-tags are provided for connections, firmly anchored against direct pull, ≥ 5 lb. test.



S.520-S.529,
all /A type



S.520-S.529,
all Standard type with
Bakelite Button



S.530, S.532,
all /A type



S.530, S.532,
all Standard type with
Bakelite Button

S.520-S.528 TYPES, SMALL-, MED.-, & LARGE-CONTACT-GAP
CENTRE-BUTTON TYPES, FOR GENERAL USE

S.530-S.532 TYPES, SMALL-CONTACT-GAP & VERY LIGHT PRESSURE
END-BUTTON TYPES (Suitable for coin-operation)

MECHANICAL DATA							
1	1a	2	3	4	5	6	7
List No. with Bakelite Button	List No. with Stainless- Steel Button†	Colour Code	Nom- inal Contact Gap	Aver- age Pre- travel	Max. dif- feren- tial	Over- travel, MAX.	Average Operating Pressure
S.520 S.521 S.522	—	Red Yellow Green	0.01"	$\frac{1}{16}$ "	0.015" 0.015" 0.020"	0.025"	3-6 oz. 6-10 oz. 10-16 oz.
S.524 S.525	—	Yellow Green	0.02"	$\frac{1}{16}$ "	0.015" 0.020"	(For longest life, limit to 0.010")	6-10 oz. 10-16 oz.
S.527 S.528	—	Yellow Green	0.03"	$\frac{1}{16}$ "	0.020" 0.030"		6-10 oz. 10-16 oz.
S.530 S.532	—	Red Green	0.01"	0.055"	0.030"	0.050" preferably 0.025"	gms. 25-50 50-100
							3 oz. 3 oz. 4 oz. 3 oz. 4 oz. 15 gms. 38 gms.

†only made to order, if essential.

MAX. ELECTRICAL DATA, @ 50 ~							
List Nos.		Making, carrying & Peak-breaking A.			R.M.S. Working V.		R.M.S. Proof Test V.*
		Up to 12 V. ~	13 to 125 V. ~	125 to 250 V. ~	Across Con- tacts : Contacts to E.	Contacts to drive means	Between contacts & Con- tacts to E.
S.520 to S.528	/A	6 A.	6 A.	3 A.	250 V.	250 V.	500 V.
S.530 to S.532	STANDARD	4 A.	3 A.	1.5 A.	250 V.	500 V.	1 KV.
	/A						
	STANDARD						

* I.R. is taken @ 500 V. = (i.e., D.C.), for ≤ 100 M Ω dry or recovered.

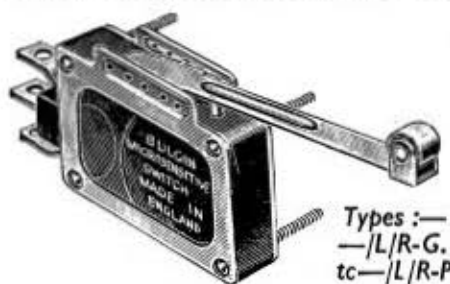
† Specially, to quantity order only. The BAKELITE Button type, with its higher insulation, is now the STANDARD.

Every model has S.P.D.T. contacting, and so is universal for ON-OFF, OFF-ON, or CHANGE-OVER, giving minimum stocking.

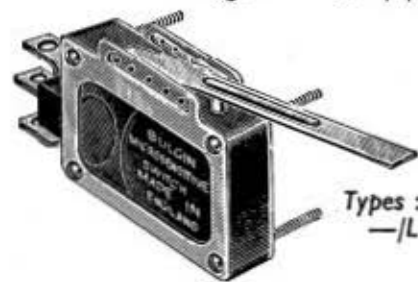
Normal Max. and Min. Sinusoidal Rates of Operation (incl. permitted 'pretravel' and 'overtravel', for all models):—**FASTEST**: 1 full cycle of total-drive-plus-total-retraction in 0.1 Sec. (100ms.),—all drive in 0.05 Sec.,—10 cycles of movement per Sec. **SLOWEST**: 1 full cycle in 4.0 Secs.—total drive in 2 Secs.,— $\frac{1}{2}$ c/S.

90—MINIATURE MICRO-SENSITIVE SWITCHES—

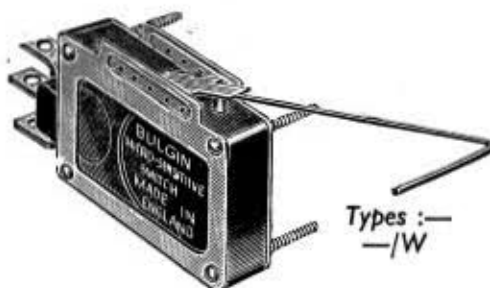
LEVER OPERATORS etc., FOR BULGIN MINIATURE ("M") MICRO-SWITCHES



Types :—
—/L/R-G.
tc—/L/R-P



Types :—
—/L



Types :—
—/W

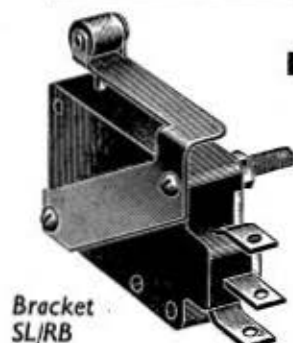
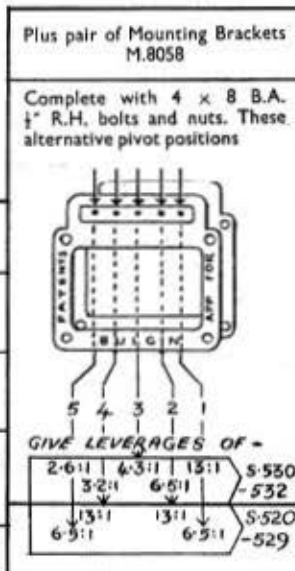
TO INCREASE the utility of the large range of "M" Micro-Switches on p. 89, we now offer six different Operator-Attachments. Each Operator is complete with a pair of side-brackets, and four 8-B.A. bolts and nuts, for the sandwiching assembly and fixing. Each operator-lever can be pivoted, in its brackets, in up to 5 different ways; over 750 possible combinations! Side-brackets of brass, barrelled-nickel-plated; Operators-levers, are nickel-silver-blades. Rollers, wire-extensions, are as tabled. Patents Pending.

Add suffix to List No. of Switch	Description—in every case, 4 bolts and nuts, and pair of brackets (M.8058 x 2) accompany
—/W	Operator-leaf (short) with stainless steel Wire extension, M/SA/2004
—/L	Operator-leaf-Blade, M.8057, Nickel-silver
—L/R-G	Operator-leaf fitted with "u"-bracket, and Graphitic Roller, M/SA/2021
—/L/R-B	Operator-leaf fitted with "u"-bracket, and D.N.P. Brass Roller, M/SA/2021/1
—L/R-SS	Operator-leaf fitted with "u"-bracket, and Stainless Steel Roller, M/SA/2021/2
—L/R-P	Operator-leaf fitted with "u"-bracket, and Tufnol Type Roller, M/SA/2021/3

The operators, freely pivoted, add no forces to the switches, except their own weight. Leverages of from $2\frac{1}{2}$: 1 to 13 : 1 are given—see diagram, right.
Operation-pressures are divided, and operation-distances are multiplied, by the leverage obtained.

Add suffix to List No. of Switches	TO OBTAIN EXTERNAL OPERATOR
Stainless Steel Wire —/W	
Nickel-silver blade —/L	
—/L/R.G.* —/L/R.B.* —/L/R.SS.* —/L/R.P.*	

*Having GRAPHITE, NICKEL-PLATED BRASS, STAINLESS-STEEL, & TUFNOL (PLASTIC), ROLLERS, respectively. Note: Operators may also be reversed to project towards terminal tags.



Bracket
SL/RB

NEW ONE-PIECE SIDE-BRACKET AND LEVER

THIS New one-piece phosphor-bronze bracket, with the free running stainless-steel roller giving positive pressure on the actuating button, is shown here fitted to the S.530-S.532 type Micro-Switch for which it is designed. Speedily fixed by two 8 B.A. nuts and bolts. Order by adding "SL/RB" to List No. of 'M' Micro-switch selected from those on p. 89, types S.530 or S.532 only.

MINIATURE OPEN BLADE MICRO-SWITCHES=91

GANGABLE LILLIPUT-SIZE OPEN-BLADE MICRO-SWITCHES

THESE amazing sub-miniature or Lilliput open Micro-sensitive switches fill a variety of uses. Extremely small—enclosing dims. $\frac{1}{8}$ " long $\times$ $\frac{1}{16}$ " high $\times$ $\frac{1}{16}$ " thick—they can be incorporated into all kinds of equipment and appliances for all manner of electric switchings. Made as a universal S.P. unit, they can switch ON-OFF, OFF-ON, or CHANGE-OVER. High-quality thermo-setting bakelite insulation. The moving blades are of heat-treated Be-Cu., fitted with heavy, pure-silver rivet-contact; the fixed contacts, of Cu., have heavy inlaid-Silver contact faces. Integral soldering tag extensions are provided, finished clean, ready for soldering, not plated. They are not tinned, to avoid possible Tin-deterioration at very low temperatures. Operations of the Switch should be by insulated push—or cam-means, near the end of its long arm. For long-life usage, adhere to operating-data given.

These switches may be ganged-grouped. Fixing:—2 $\times$ 8 B.A. clearance holes at $\frac{3}{8}$ " crs.



List Nos. S.690, 691

(Approx. full size)



List No. S.695

(Nearly full size)

GANGABLE MEDIUM-SIZE OPEN-BLADE MICROSWITCHES

THESE new, larger, open Micro-sensitive Switches fill many applications. With enclosing dimensions of $1\frac{1}{8}$ " $\times$ 1" = 36.5 $\times$ 25.4 mm., approx. $\times$ $\frac{1}{8}$ " thick (= 8 mm.), fixing details as column 8 below, they will incorporate into all kinds of apparatus. Also made as universal S.P.C.O. units, they can be wired as normally-on, or normally-off, as well as for change-over. High quality phenolic (thermo-setting) insulation, Be-Cu. centre-blade, stainless-steel drive-blade, and pure-silver copper-carried fixed contacts. Integral solder-tag extensions. To be operated (Col. 7, below) by insulated drive means. Suitable, also, for gang-grouping.

ELECTRICAL DATA FOR S.690, S.691, S.695 (Provisional)

D.C. Ratings			50~ Ratings			Max. Wkg. P.D. across contacts	Max. Test V., dry or recovered	Max. frequency or speed of operation, at the rate of:
V.	S.690, S.691: A.*	A.695: A*	V.	S.690, S.691: A.*	S.695: A*			
12	3	3	12	3	6	250	1 KV.	10 total operations per Sec. or 1 total op. in 0.1 Sec.
50	1	1	50	2	5			
110	0.25	0.5	110	1.5	4			
250	0.1	0.3	250	1.0	3			

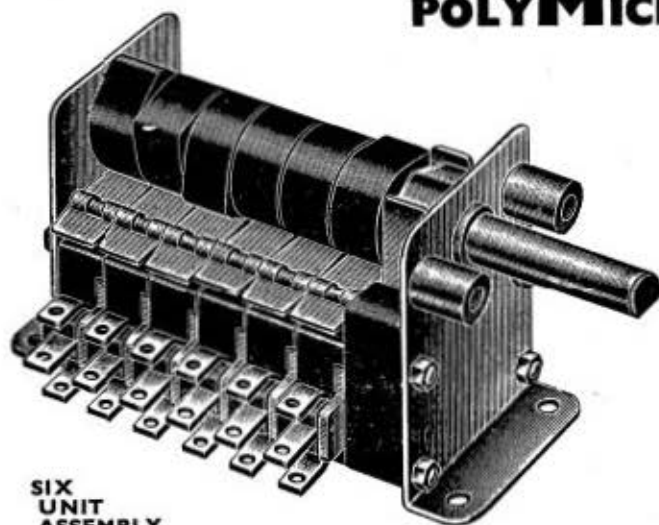
* Peak, if the circuit has any peak-currents which exceed mean-current.

MECHANICAL DATA (Provisional)

List No.	1 Nominal Contact Gap	2 Pre-travel allowable to user for longest life	3 Differential	4 Max. Over-travel, for longest life	5 Drive Force	6 Release Force or holding force	7 Point of Drive, dim. from line of fixing crs.	8 Fixing crs.
S.690	0.0125" (0.32 mm.)	0.015" (0.4 mm.)	0.018" to 0.031" 0.5 (0.8 mm.)	0.015" (0.4 mm.)	$\geq$ 10 ozs. (284 gms.)	2 ozs. (56.8 rms.)	$\frac{1}{8}$ " (15.1 mm.)	2 $\times$ 8 B.A. clear (= 0.090" $\varnothing$) @ $\frac{1}{8}$ " crs. (9.5 mm.)
S.691	Do.	Do.	Do.	Do.	$\geq$ 5 ozs. (142 gms.)	1.5 ozs. 42.5 gms.	Do.	Do.
S.695	0.020" (0.5 mm.)	0.030" (0.75 mm.)	0.025" to 0.040" (say, 1 mm.)	0.025" (0.63 mm.)	$\geq$ 12, $\leq$ 6, oz. 170-340 gm.	Approx. 1/5 of drive	$\frac{3}{8}$ " (19 mm.)	24 $\times$ B.A. clear @ $\frac{1}{8}$ " crs. (17.5 mm.)

Notes to Columns:—(1) Manufacturing variances cover 0.010"—0.020", approx. Top-limit-gap switches have higher differential figs. (2) Relaxed, the pre-travel is much greater. For long operating life, User should limit the pre-travel (= Movement before switch clicks over, upon driving) to figure given; i.e., should not allow the drive-area, upon return action, to relax more than gives 0.015" pre-travel on re-drive. (3) The backwards movement necessary to restore to relaxed switching after drive-switching takes place. (4) If over-travel (= any continued driving movement after switches takes place) is allowed to be 0.031" (absolute max.), total operating life approx. halves. (5) Allow ozs. figure given in tables above, although some switches may seem to operate at less. (6) After switch has operated, the drive force (then, holding 'force') needed lessens. (If the drive-force is springy—e.g., a bimetal-strip—it may then stress into the over-travel zone. (7) The drive should usually be insulated, of course. The figure ($\frac{1}{8}$ ") may be reduced, but not less than $\frac{1}{16}$ "; the forces then increase, and distances (at drive point) then decrease, in ratio.

POLYMICRO—NEW GANGED MAINS ROTARY MICRO-SWITCH



SIX
UNIT
ASSEMBLY

"POLYMICRO." This revolutionary new design in Micro-Switches incorporates the Bulgin S.P.C.O. Miniature "M" type Micro-Sensitive switches, ganged together in a highly-plated metal frame in any number, up to 12 units.

Operated by Polished Bakelite Cams threaded on to a hexagon shaft in any number of different positions at $\pm 60^\circ$, up to six, and actuated either manually or automatically.

Each individual switch is basically S.P.C.O. for S.P.M.B. or S.P.B.M. and can be stacked to give many different switching arrangements. Dimension of 6-unit switch— $2\frac{5}{8}$ " long $\times$ $1\frac{1}{4}$ " high $\times$ $1\frac{1}{4}$ " wide.

SIX UNIT ASSEMBLY

List No.	Description
S.670/6/ *	6 Units, operated 1 per unit-movement of 60° , giving total and unstopped rotation
S.671/6/ *	6 Units, operated 2 per unit-movement of 60° , 3 positions between stops
S.672/6/ *	6 Units, arranged: 1st pos'n, 1 pole; 2nd pos'n, 2 more poles; 3rd pos'n, 3 more poles and STOP
S.673/6/ *	6 Units, arranged as 2×3 pole, 2 positions between stops
S.674/6/ *	6 Units, arranged as 1 pole + 5 poles; 2 positions between stops
S.675/6/ *	6 Units, arranged as 1 pole + 4 poles + 1 pole; 3 positions between stops

Similar Assemblies, with up to six positions selected by control-shaft, are also made up as required. Any "POLYMICRO" Gang can have index-positioning omitted if wanted, and can also be made 'without stops' for continuous rotation. (Then, cams must be positioned for 6 switches per rotation, or lesser-no. of switchings 'staggered' or duplicated).

TWELVE UNIT ASSEMBLY

List No.	Description
S.670/12/ *	12 units operated 2 per unit movement of 60° giving total and unstopped rotation
S.671/12/ *	12 units operated 4 per unit movement of 60° 3 positions between stops
S.672/12/ *	12 units arranged 1st. position=2 pole, 2nd position=4 pole, 3rd position= 6 pole, and stop
S.673/12/ *	12 units arranged as 2×6 pole, 2 positions between stops
S.674/12/ *	12 units arranged as 2 poles + 10 pole, 2 positions between stops
S.675/12/ *	12 units arranged as 2 poles + 8 pole + 2 poles, 3 positions between stops

* User should cite desired List No. of Switch to be used throughout the group, from p. 89, according to Elec.-data desired.

ELECTRICAL DATA

User should select suitable switch(es) Unit(s) from those on p. 89, and cite when citing above List No.(s) of types of Gang assembly.

THESE new special Micro Sensitive Bulgin rolling-spring switches will meet many special needs, and are available by arrangement. They all have the characteristic, particular to our Micro-Sensitive Switches, of biased or non-locking (except List No. S.705, toggle-action type) action, and very long operating and contact life, at rating. Many users achieve $\frac{1}{2}$ -, $\frac{1}{4}$ - or even 1-million operations. Other special types are being evolved, for new needs and uses. The models shown below include: One-hole-fixing toggle-action; roller-headed plunger action without over-travel; over-travel type slender plunger; face mounting model—often used for window and door alarm circuits, etc.; manual-press or bell-push type; and new dual-gang. All are S.P.C.-O, with 250 V. max., 5 A. Max. (A.C.) contacts-rating, and may be proof-stressed at 2 kv., contacts to external metal parts, and worked at 500 V. P.D. thereat. All side-fixing holes shown are 4 B.A.-clear ($\frac{1}{8}$ " $\varnothing$) at 1" nom. crs.



S.705

List No. S.705. One-hole fixing, toggle action, for $\frac{3}{16}$ " diameter panel hole, max. panel-thickness of $\frac{1}{8}$ " ($\frac{1}{4}$ 37) (always retain hex-nut (shown) behind panel). Strong snap action with spring behind dolly, and standard Micro-Sensitive Rolling-Spring action. This is the only model on this page in which the action (and contacting) does not "return", automatically.



S.715

List No. S.715. The depressive plunger has inset roller for best non-weaving co-operation with sliding or rotant surfaces, max. depressability $\frac{1}{32}$ ". Avoid over-travel; operation is averagely effected within 75% of depress figure given. Operating force to be provided as 1 lb. min.



S.730

List No. S.730. The slender piston plunger operates the switch after $\cdot 017$ " average movement; the user may then have up to $\frac{1}{8}$ " over-travel. Operation is best done by axial moving, rather than sliding or rotant surfaces.



S.725

List No. S.725. Face mounting, fix by: 2 x 6 B.A. screws (not provided unless requested) to enter by $\angle 0.1$ ". Operating button is $\cdot 156$ " diameter—allow $\cdot 171$ " diameter hole through fixing surface. Button projects $\frac{1}{8}$ ", average pre-travel $\cdot 017$ ", average over-travel $\cdot 009$ ".



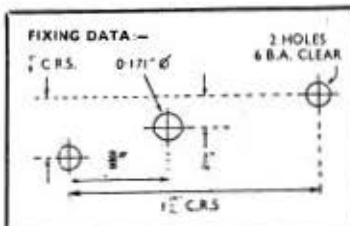
S.720

List No. 720. One-hole fixing, to $\frac{3}{16}$ " diameter hole in panels up to $\frac{1}{8}$ " thick—it is essential to retain hex. nut (shown) behind panel. Fitted with large red-erionoid press button top, for manual operation. Depressional distance = $\frac{1}{8}$ " total, max. depress. force ≥ 2 lb.



S.710/RB etc.

List No. S.710/RB, etc. A useful 2-gang or double pole structure but not intended for simultaneous-poles operation. Useful for double-circuit or successional switching. (User can adjust blades angles.)



We invite enquiries for special micro-sensitive switches required in quantities.

List No.	Description
S.710L/*	Leaf-drive, without Roller
S.710RB/* S.710RG/* S.710RP/* S.710RSS/*	Leaf drive with Roller { Brass, N.P. Graphite-compound Tufnol-type Stainless-steel
*Add List No. (from range "S.500" —"S.505") of BULGIN Micro-Switch required—duplicates must be used.	