Hertford CONTROLS

Electrical Components For Safety and Reliability

S800 - SNAP ACTION SWITCHES

FAST ACTION

HIGH PERFORMANCE

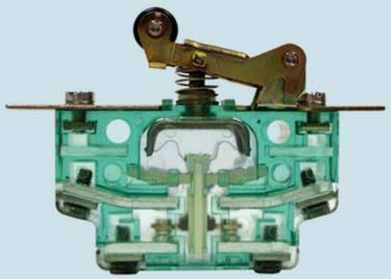
FAIL SAFE CONTACTS

LONG OPERATIONAL LIFE

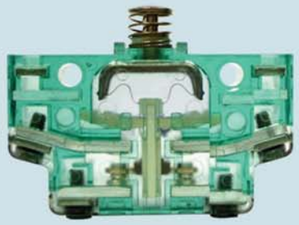
S800
SNAP ACTION SWITCHES

Hertford CONTROLS
Electrical Components For Safety and Reliability

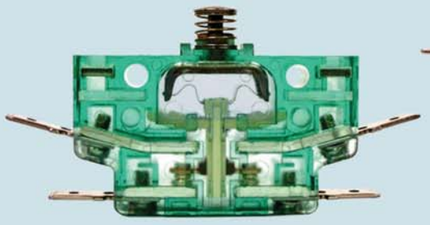
FAST ACTION • HIGH PERFORMANCE • FAIL SAFE CONTACTS • LONG OPERATIONAL LIFE



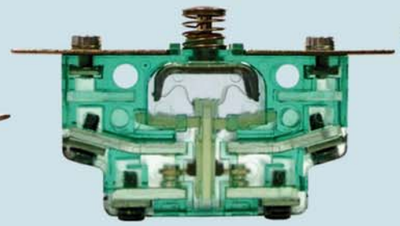
S800a
Type "a" switches have fixing plates and a roller lever for applications where a cam is to be used.



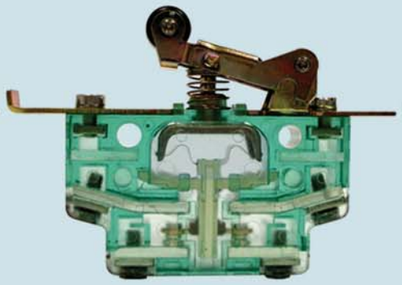
S800b
Type "b" switches are the basic switch with a round head pin for actuation only in the direction of the pin.



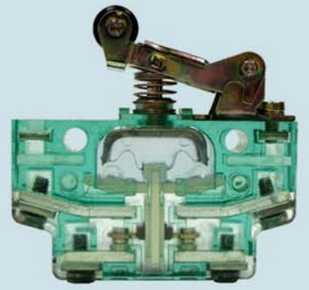
S800b/20
All switches (except S804) can be supplied with blade terminals in place of conventional screws



S800c
Type "c" switches have fixing plates and a round head pin for actuation only in the direction of the pin.



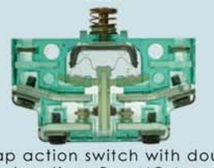
S800d
Type "d" switches have a roller lever and fixing plates with a polarising flange for one-way mounting.



S800e
Type "e" switches are the basic switch with a roller lever for applications where a cam is to be used.

BASIC SWITCH STYLES

S800



Snap action switch with double-break action. One NC & one NO contact sets

S802

Snap action switch with double break action. One NO contact set

S806

Snap action switch with double break action. One NC contact set

COMPACT SWITCH S804b

Compatible with the S800b within a body size of only 36x30mm. Most suitable for encased switches

FIXING STYLES	S800	S802	S806	S804	MECHANISM
With fixing plates and roller lever	S800a	S802a	S806a		
With round-head pin only	S800b	S802b	S806b	S804b	
With fixing plates and round head pin	S800c	S802c	S806c		
With angled fixing plate and roller lever	S800d	S802d	S806d		
With roller lever only	S800e	S802e	S806e		

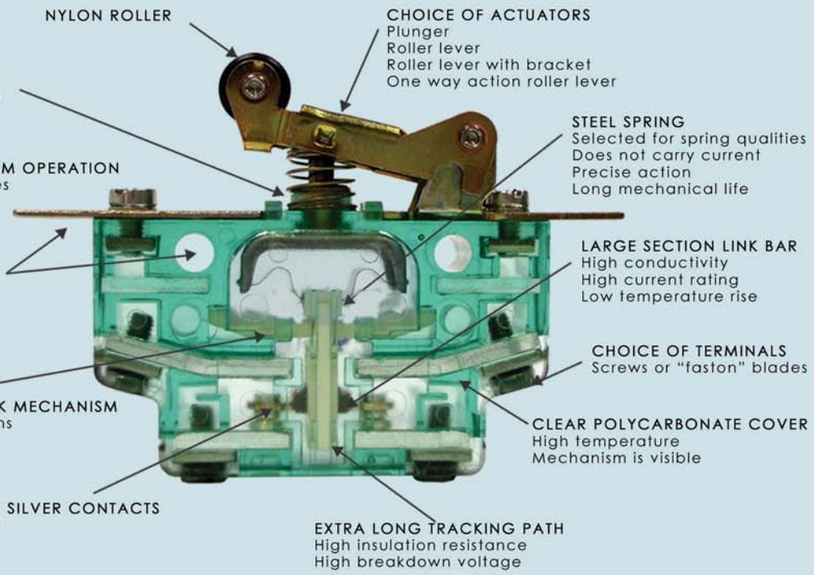
HOW TO ORDER S800 SWITCHES

Typical part number: S800 a /20
- Type of switch
- Fixing/Drive style
- Special type

Protection caps and magnetic blow-out devices must be ordered as separate

The S800 is a slim, fast action switch which has proved to be inherently reliable over a prolonged operational life. The fast action mechanism uses a pre-stressed spring and twin contact bar, giving a double break action with excellent arc dissipation and a high current rating. Isolating the contact bar from the spring mechanism has allowed a heavy section, high conductivity material to be used and enabled the spring to be made from steel to give an optimum action and long life.

A positive mechanical trip has been introduced as a fail-safe device against stuck or welded contacts by providing direct mechanical leverage to break the normally closed contacts. This feature allows the switch to be installed as an emergency device and safely left energised but unoperated for a number of years. A variety of drive mechanisms and mounting styles give versatility to the switch, allowing it to be used in a multitude of applications ranging from fast modern rail transport to earth moving machinery.



TECHNICAL DATA

Current rating:	10A continuous (to VDE 0660)	Switching Frequency (max):	465 operations per minute
Insulation:	for 380V ac, 450V dc	Mechanical life:	at least 10 million operations (to VDE 0660 Pt 2, class E1)
Test Voltage:	2500V rms		
Housing material:	Makrolon (low fire risk)	Working temperature:	-40 to +100°C
Contacts:	Hard silver	Storage temperature:	-50 to +100°C
Contact resistance:	typically 250	Weight:	21 to 41g according to type

APPLICATIONS

Pushbutton switch with standard round actuator

Pushbutton switch with momentary palm-push actuator

S804 switch encased in rugged die-cast housing

Toggle switch with a wide range of switching combinations

PUSH ON TERMINALS

Introduced as a fast replacement style, the blade terminals used in place of the conventional screws allows rapid connection by 0.25" push-on tags.

All switches (except S804) can be supplied in this style - specify by adding the suffix "/20" to the switch part.

SCREW TERMINALS

S800 Switches come with saddle clamps as standard. These are intended for single wire connections but if ring terminals are to be used, the suffix /30 should be added to terminal screws with flat washers.

HEAVY DUTY SPRING

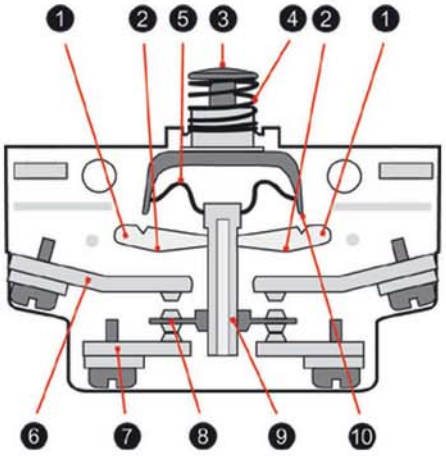
Any switch can be supplied with a strong spring for those applications where severe shock and vibration could be experienced. Specify by adding the suffix "/40" to the part number eg. S800b/40.

SNAP ACTION

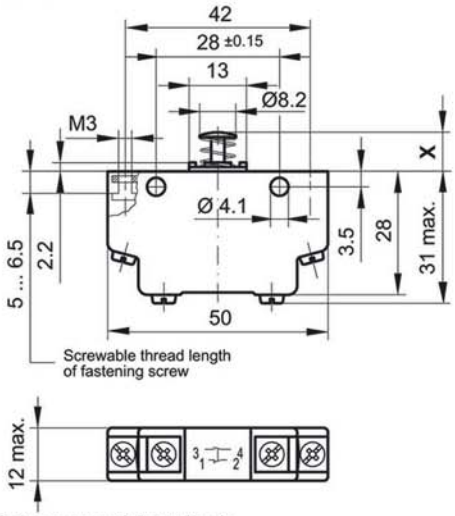
When pushbutton 3) travels beyond the snap-over point of the spring 5) plunger 9) moves the contact bridge 8) breaking the NC circuit 7) and making the NO circuit 6). This happens at a fast and constant speed, totally independant of the actuation speed.

POSITIVE OPENING FEATURE

If the NC contacts 7) and 8) have become welded or the snap spring 5) fails, breakdown would occur at this point in a standard switch. With the S800 the failsafe action comes into play, forcing the contacts apart by direct leverage.
In detail, the downward pressure of the pushbutton yolk 10), 3) rotates the levers 2) about their base, forcing the plunger 9) upward, separating the welded contacts

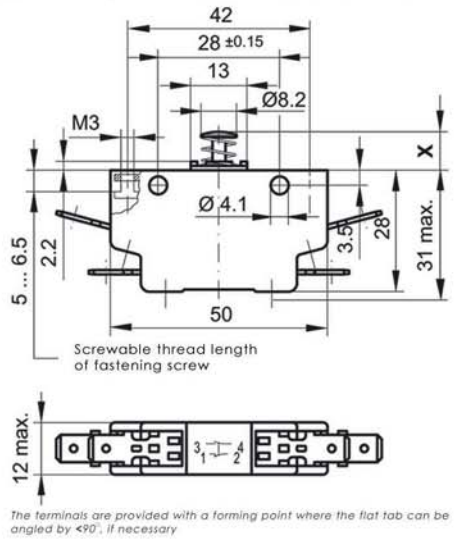


DIMENSIONS



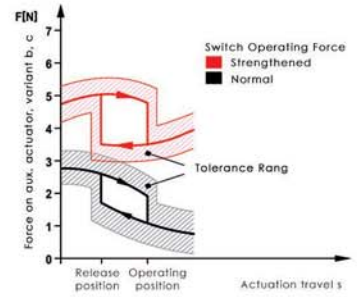
Flat quick-connect terminals

Flat tabs (6.3x0.8 mm) according to DIN 46247 sheet 3, preferably with insulated cable sleeves.

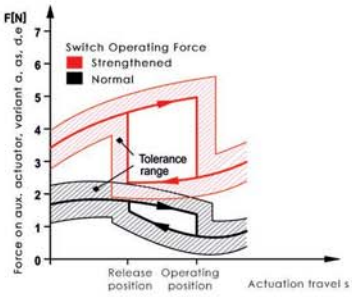


The terminals are provided with a forming point where the flat tab can be angled by <90°, if necessary

SWITCH STYLE	S800a	S800b	S800c	S800d	S800e	S802b	S806b	S804b
OPERATING FORCE (MAX)	2.3	3.3	3.3	2.3	2.3	3.3	3.3	3.3
RELEASE FORCE	0.3	0.2	0.2	0.3	0.3	0.2	0.2	3.3
FREE POSITION	20±0.35	8.85±0.15	8.85±0.15	20±0.35	20±0.35	8.85±0.15	8.85±0.15	13.35±0.15
OPERATING POSITION	16.6±0.5	6.6±0.35	6.6±0.35	16.6±0.5	16.6±0.5	6.6±0.35	6.6±0.35	11.1±0.35
RELEASE POSITION	18.4±0.5	7.8±0.35	7.8±0.35	18.4±0.5	18.4±0.5	7.8±0.35	7.8±0.35	12.3±0.35
TOTAL POSITIVE OPENING TRAVEL	13.6	5.85	5.85	13.6	13.6	5.85	5.85	10.35
TOTAL TRAVEL	13.3	5.65	5.65	13.3	13.3	5.65	5.65	10.15
TYPICAL MOVT. DIFFERENTIAL	2.2	1.3	1.3	2.2	2.2	1.3	1.3	1.3



Force / travel diagram of actuator (pushbutton), style S800b, S800c



Force / travel diagram of auxilliary actuator, style S800a, S800 as, S800d, S800e

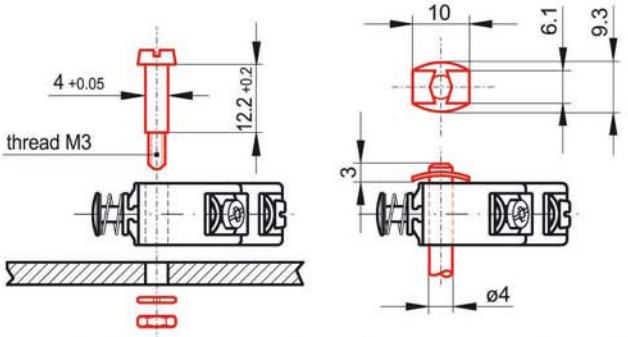
Front Mounting

By way of the nut retainers(M3) which are inserted in the housings of switches that have noauxilliary actuator. Tightening torque 0.9 Nm max.
By way of the mounting brackets that come with the switches with roller levers

Ganging (lateral mounting)

through the two transversal bore holes with 4mm screws or bolts. Tightening torque 1.3 Nm max.
Alternatively, DUO clips or retaining rings can be used.

BOLTS		DUO CLIPS	
BS-ZK	Cylinder head bolts, thread length 10mm	DC-800	To put on bolts BS-ZK
BS-SK	Hexagonal head bolts, thread length 10mm		

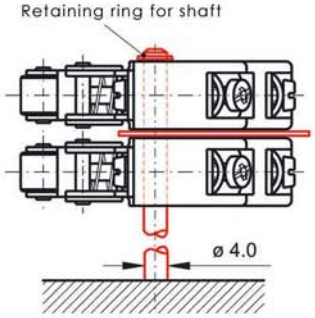


When mounting the switches mechanically make sure to have 2 fixing points

The values for maximum tightening torque must not be exceeded.

Avoid tilting the screw when mounting and keep the housing of the switch free from mechanical tension

In order to safeguard clearance and creepage distances it is necessary to use insulating plates when ganging or mounting switches on uninsulated surfaces.



12.0mm normal pitch
14.5 mm pitch
with protective housing / cap
(SK-100 / SK-200)
12.5mm pitch
with insulation plate 0.5mm

Mounting on bolts with groove and retaining ring.

Hertford CONTROLS
Hertford Controls Ltd, Unit 14 Ermine Point,
Gentlemens Field, Westmill Road, Ware, Hertfordshire, SG12 0EF
Tel: 01920 467578, Fax: 01920 487037, Web: www.hertfordcontrols.co.uk, Email: info@hertfordcontrols.co.uk