

## SERIES 19N – MICROSWITCH

### FEATURES

- Insert moulded terminals
  - fully sealed base
- Fully sealed version
  - to IP67
- Wide temperature range –
  - 40°C to +125°C
- Choice of actuators as standard
- Approved product
  - BEAB
- Soldering Information
  - 350° max. for 3 seconds
- Non flammable switch
  - UL94-VO rated

### NON-STANDARD OPTIONS

- Leaf lever available in variable lengths (see ordering information)
- Custom levers/brackets
- Multiple pole 'ganged' versions

## Technical Information

### Series 19N

The miniature microswitch (the standard V4 size) has been designed in line with similar competitive products, but because of automation, offers consistent high quality levels for volume applications, at no extra cost. The switch mechanism used is the well proven spring and blade method, and is offered in a choice of operating forces.

Other standard options include gold or silver contacts; PCB, solder or QC terminals, and integral wire lead versions. All versions have a fully sealed base right up to the bottom opening. In addition, sealed button versions are totally environmentally sealed.

### Mechanical

Overtravel	0,2mm (min) depress to case
Movement differential	0,1mm reference
Mechanical life	10,000,000 cycles
Operating force	See ordering information

### Electrical (at 125°C)

#### Current (max) for silver contact versions (Inductive rating 0,6 PF)

<b>Low operating force:</b>	<b>Standard operating force:</b>
250V a.c. Resistive 2A	250V a.c. Resistive 5A
250V a.c. Inductive 1A	250V a.c. Inductive 1A
28V d.c. Resistive 2,5A	28V d.c. Resistive 3A
28V d.c. Inductive 1A	28V d.c. Inductive 1A

All gold contact versions: 100mA 28 VDC Resistive

<b>Current (min)</b>	
All silver contact versions	10mA 5V d.c. Resistive
All gold contact versions	1mA 5V d.c. Resistive
Life (nominal) – full load	100,000 cycles
Dielectric strength	1000V a.c.
Insulation resistance	1GΩ
Contact resistance (initial)	20mΩ (max) silver, 50mΩ (max) gold
Contact bounce	5ms (max), 1ms per individual pulse

### Environmental & Physical

Ingress protection	
– with unsealed button	IP40
– with sealed button	IP67
Temperature	-40°C to +125°C
Button material	Polyester
Body Material	Nylon 46
Contacts	
– silver versions	Silver nickel alloy
– gold versions	5 microns of gold on copper/nickel
Terminals	
– solder & PCB versions	Tin plated brass
– QC versions	Brass

### Approvals



**Sealed Variants**

This variant is available in two versions, fully sealed and top sealed. The top seal incorporates a rubber seal around the button to stop the ingress of contaminants through this area. If the switch is to be activated by a cam, it would be advisable to do this via a lever, as using a cam directly onto the button can cause damage to the diaphragm seal.

The fully sealed version has the top seal and also has integral leads 'potted' onto the terminals. This version is rated at 125°C. There is also a derated version, to 105°C, available. This has the advantage of being lower cost than the standard version. If you should require more information on this version please contact the Sales Office.

**Mounting Information**

**PCB Terminal version**

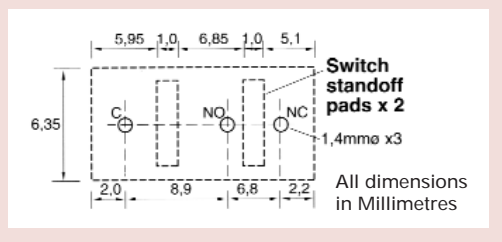
This version mounts directly onto a PCB which has been drilled as illustrated. To ensure a tight fit in the PCB during handling and flow soldering operations, the switch can be inserted into the PCB, and then the terminals may be splayed by 30° in an alternate fashion. The terminals have an in-line rectangular cross section to facilitate this, and to eliminate the reduction of creepage distances in the fitted application.

**Solder, QC and flying lead versions**

These versions have two mounting holes that accept M2,5 screws (with anti-vibration washers if relevant) tightened to a maximum torque of 0,3Nm. One of the mounting holes is slotted, to allow for a tolerance between the screw centres of ±0,15mm. If the switch is being mounted onto a metal surface, a separating insulator is recommended on the solder and QC versions, to ensure bare wires cannot make electrical contact.

**PCB Layout**

(viewed from either side)



**Terminal Style**

Solder	4
PCB	5
QC	6
Integral wire leads	7

**Contact Material**

Silver	0
Gold	1

**Button Op/Release Force**

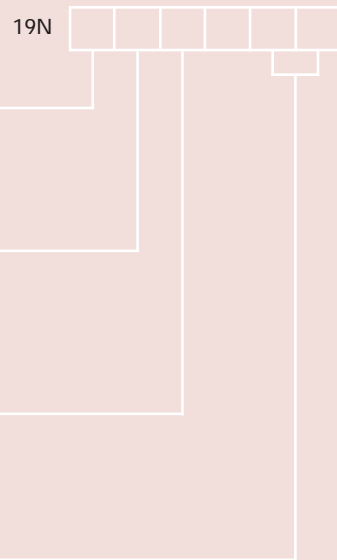
	Op force	Rel force	
Unsealed button	0,5N	0,07N	1
Sealed button	2,0N	0,27N	2
Unsealed button	1,5N	0,27N	3

**Auxiliary Actuator Fitted**

None fitted	(leave blank)
Standard leaf lever	L18
Standard roller lever	R15

**Note**

\* L18 represents that this lever is 18mm long (see product drawing). Non standard leaf lever lengths are available in 1mm increments from 18mm to 63mm. You may specify required lever length from between 18mm to 63mm as a non standard option. If required, please reference the Sales Office.



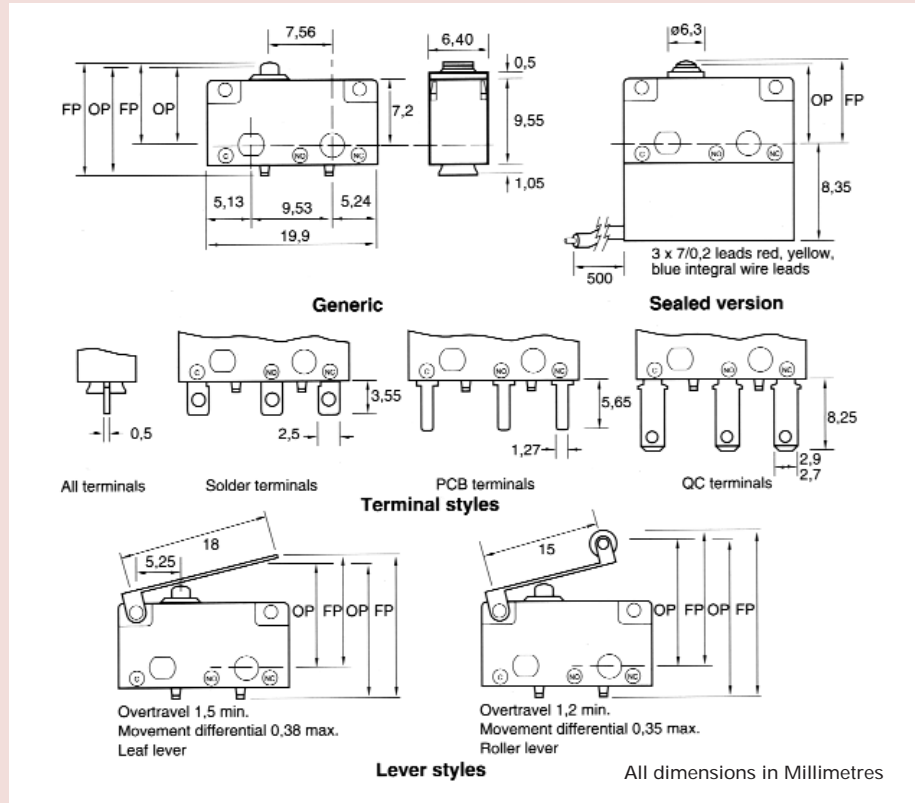
# SERIES 19N Microswitch

## Technical Information

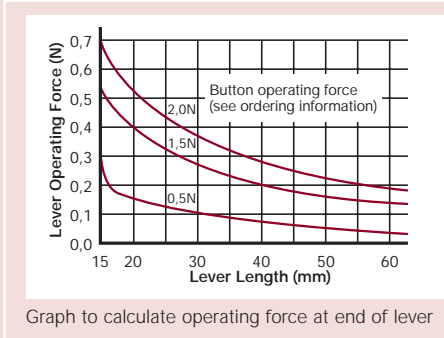
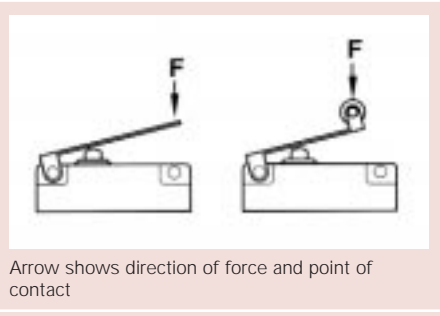
### Product Dimensions

#### Button/lever positions

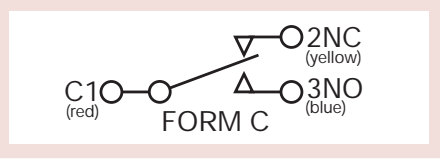
<b>Free position (F.P)</b>	
Standard switch to mounting holes	9,14 max
Standard switch to PCB	12,35 max
Sealed switch to mounting holes	9,35 max
Leaf lever to mounting holes	12,50 max
Leaf lever to PCB	15,70 max
Roller lever to mounting holes	17,20 max
Roller lever to PCB	20,40 max
<b>Operating point (O.P)</b>	
Standard switch to mounting holes	8,40 ±0,40
Standard switch to PCB	11,60 ±0,40
Sealed switch to mounting holes	8,50 ±0,40
Leaf lever to mounting holes	10,15 ±1,37
Leaf lever to PCB	13,38 ±1,37
Roller lever to mounting holes	15,50 ±1,14
Roller lever to PCB	18,25 ±1,14



### Circuit Form



### Application References



- Telephone handsets
- Automotive controls
- Joysticks
- Security/anti-tamper uses
- Small motor limit switches
- Business machines
- Thermostat and sensor controls

### Further Information

For further information on our complete range of switch products, visit our website - [www.itwswitchcon.com](http://www.itwswitchcon.com) or contact our Sales Office.



ITW Switches, Division of ITW Limited, Norway Road, Hilsea, Portsmouth PO3 5HT, UK  
Tel: +44 (0)2392 656200 Fax: +44 (0)2392 666352 Website: [www.itwswitches.co.uk](http://www.itwswitches.co.uk)

Due to our policy of continuous product development, ITW Switches retain the right to change the specification at any time without prior notice. Designed & printed in the UK.