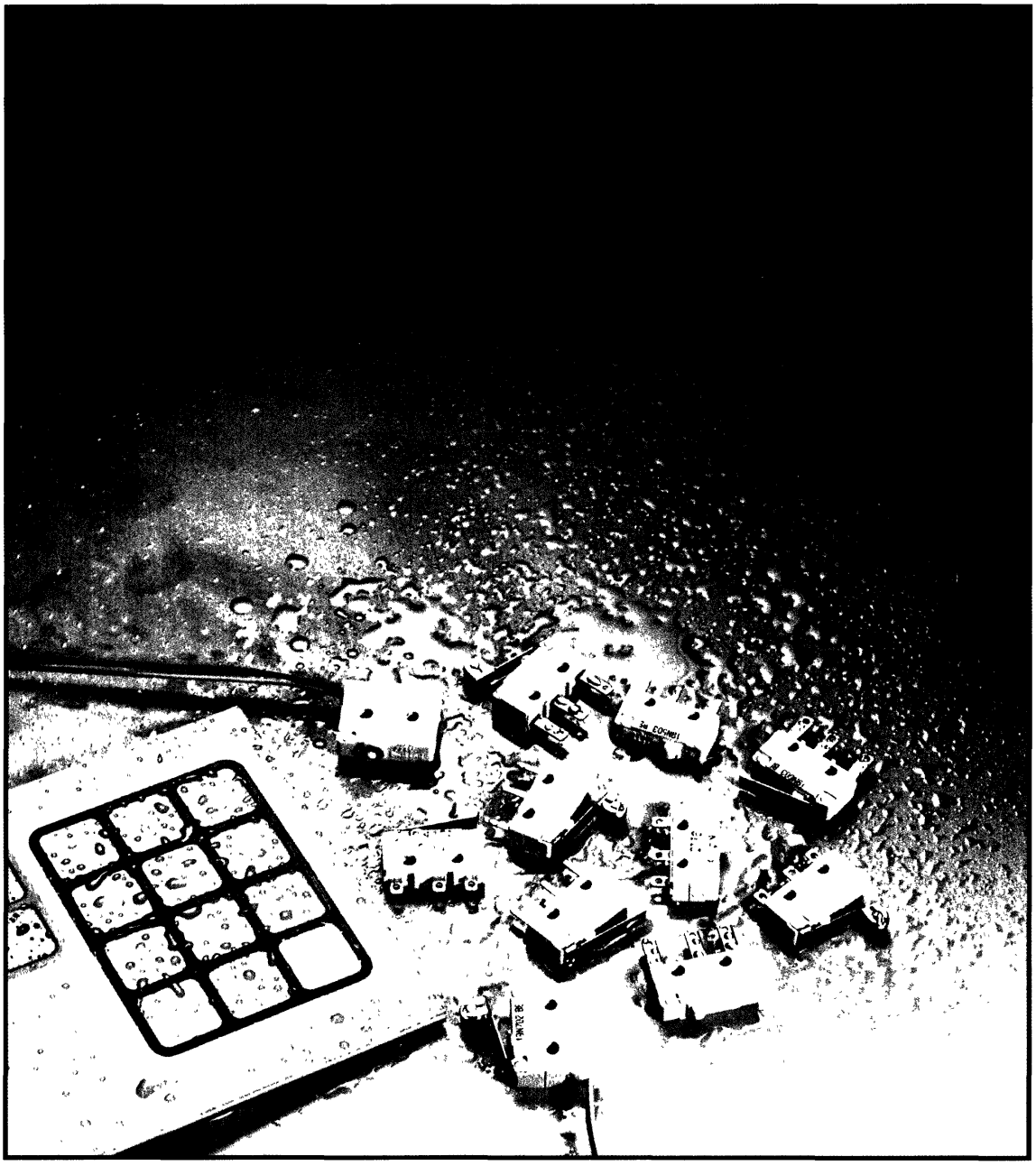
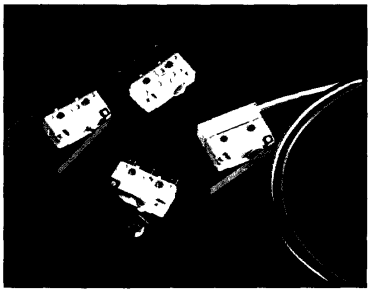
Series 19N

MICROSWITCH



ITW Switches



Series 19N

MICROSWITCH

Description

This 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.

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 – VDE and BEAB
- 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

Specification

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)

Low operating force:	Standard operating force:
250 VAC Resistive 2A	250 VAC Resistive 5A
250 VAC Inductive 1A	250 VAC Inductive 1A
28 VDC Resistive 2,5A	28 VDC Resistive 3A
28 VDC Inductive 1A	28 VDC Inductive 1A

All gold contact versions: 100mA 28 VDC Resistive

Current (min)

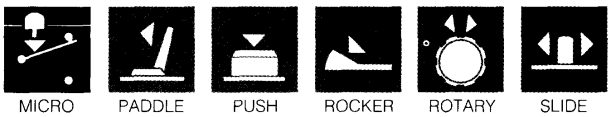
All silver contact versions	10mA 5 VDC Resistive
All gold contact versions	1mA 5 VDC Resistive
Life (nominal) – full load	100,000 cycles
Dielectric strength	1000 VAC
Insulation resistance	1GΩ
Contact resistance (initial)	20mΩ (max) silver, 50mΩ (max) gold
Contact bounce	5ms (max), 1ms per individual 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

VDE BEAB



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

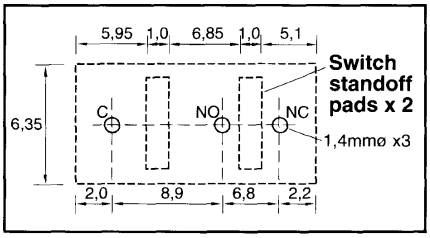
This version mounts directly onto a PCB which has been drilled as illustrated. To ensure a tight fit in the PCB during handling and flow soldering operations, the switch can be inserted into the PCB, and then the terminals may be splayed by 30° in an alternate fashion. The terminals have an in-line rectangular 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

All dimensions in mm



Ordering information

19N

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

* 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

Product dimensions

Button/lever positions

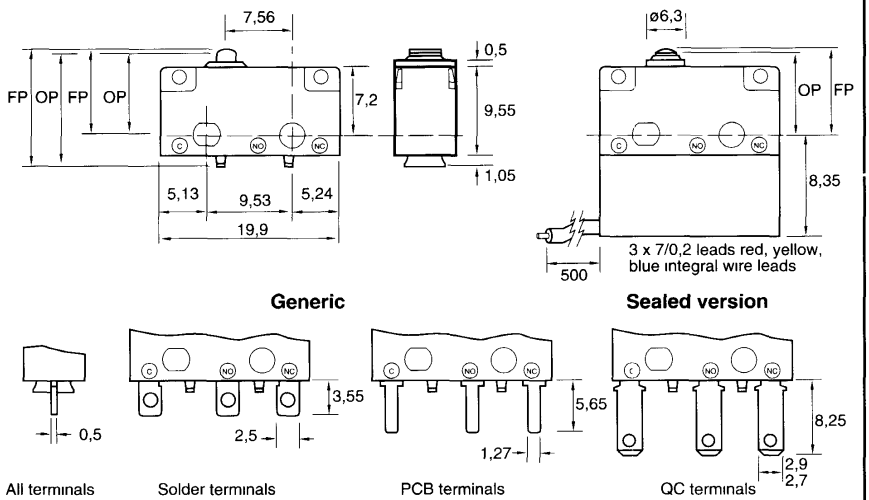
Free position (F.P.)

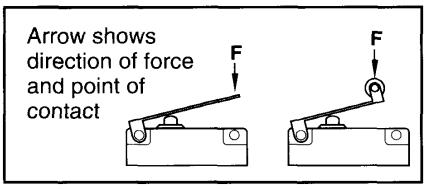
Standard switch to mounting holes	9,14 max
Standard switch to PCB	12,35 max
Sealed switch to mounting holes	9,35 max
Leaf lever to mounting holes	12,50 max
Leaf lever to PCB	15,70 max
Roller lever to mounting holes	17,20 max
Roller lever to PCB	20,40 max

Operating point (O.P.)

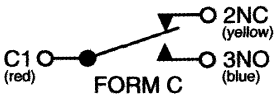
Standard switch to mounting holes	8,40 ±0,40
Standard switch to PCB	11,60 ±0,40
Sealed switch to mounting holes	8,50 ±0,40
Leaf lever to mounting holes	10,15 ±1,37
Leaf lever to PCB	13,38 ±1,37
Roller lever to mounting holes	15,50 ±1,14
Roller lever to PCB	18,25 ±1,14

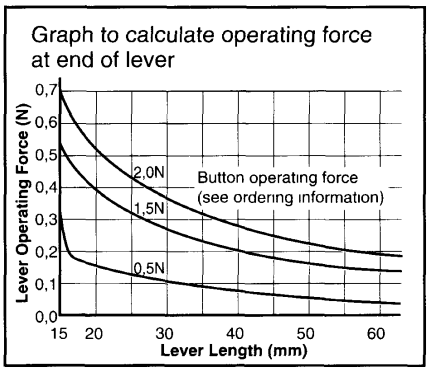
Dimensions (in mm's)





Circuit form





Application references

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

For further information on our complete range of switch products, please contact the Sales Office.

ITW Switches

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