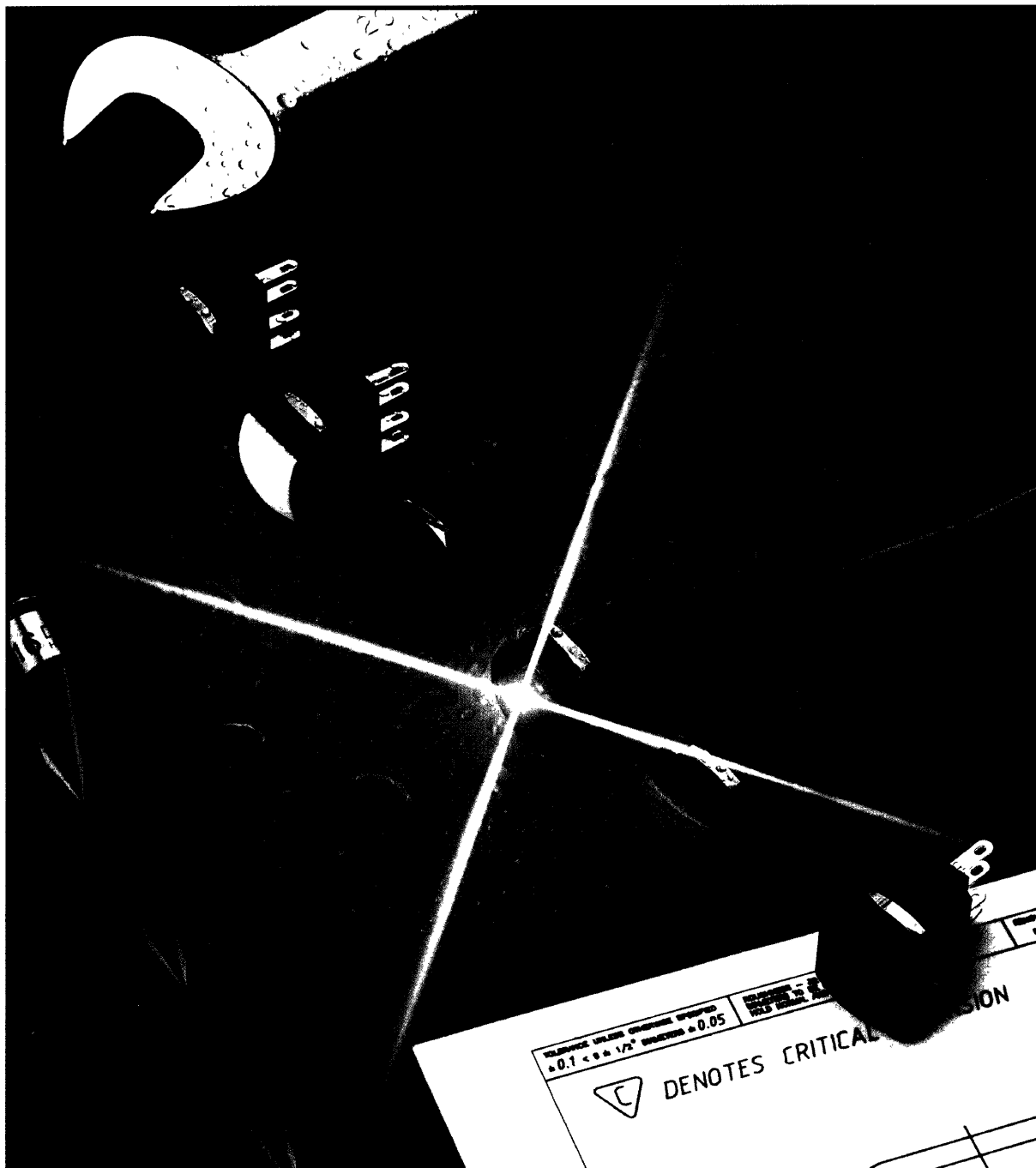
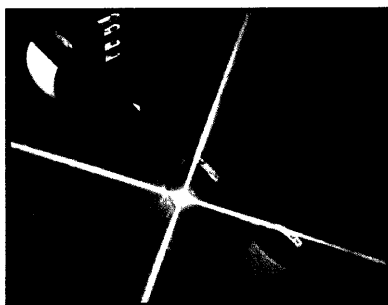

Series 49-59

SEALED PUSHBUTTON RANGE



TW Switches



Series 49-59

SEALED PUSHBUTTON RANGE

Description

ITW Switches' 49-59 series is a range of momentary action pushbutton switches which fit a $\varnothing 16\text{mm}$ panel cut out. The range consists of a fully sealed IP67 version with insulated flying leads (500mm length) along with a panel sealed IP67 version which is terminated by a series 16 microswitch.

Held in position by a snap fit retaining mechanism, the microswitch has a maximum current rating of 10A and the

advantage of SPDT-DB contacts to cover all circuit requirements. Being double break, the contacts also provide reliable switching of DC loads.

The series is available with a choice of round, round with status illumination (flying leads only) or square bezels and with 6 button colour variants. The body and button are made from PBT, a hard wearing thermoplastic polyester that is suitable for surface or sublimation printing or engraving.

Features

- Fully sealed version to IP67
- LED status illumination (FL)
- 10A version panel sealed to IP67
- Wide temperature range: Up to $+105^{\circ}\text{C}$
- Industrial standard $\varnothing 16\text{mm}$ panel cut out

- Flame retardant UL rated material

Non-standard options

- Custom colours
- Choice of terminations
- Gold contacts on microswitch version
- Snap-in version of both flying lead and microswitch variants

Specification

Mechanical

Travel (nom)	2,3mm
Life (min)	1,000,000 cycles
Operating force	3N (FL) 3.8 – 5.5N (MS)
Panel thickness	8mm max (FL) 2,5mm max (MS w/o washer) 1,5mm max (MS with washer)

Electrical

Dielectric strength	1000VAC for 1 min
Insulation resistance	$1\text{G}\Omega$ @ 500V dc
Contact resistance	$150\text{m}\Omega$ max initial inc leads (FL) $25\text{m}\Omega$ max initial (MS)
Current rating	400mA @ 32V ac res (FL) 100mA @ 50V dc res (FL) 125mA @ 125V ac res (FL) 10A @ 250V ac res (MS)
Life	500,000 cycles (FL) 50,000 cycles @ 70°C (MS)

LED

Typical fwd voltage (V_f at I operating)	2,2V
Max fwd voltage (V_f at I operating)	3,0V
Forward current (I operating)	20mA
Meantime between failures	100,000 hours
Luminous intensity (I_v at Iopr)	Red LED – 100mcd
Luminous intensity (I_v at Iopr)	Green LED – 160mcd

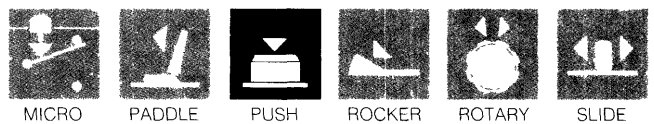
Environmental

Ingress protection	IP67
Vibration	DEF STD 07-55
Non-Illuminated	
Operating temperature range	-55°C to $+105^{\circ}\text{C}$
Illuminated	
Operating temperature range	-35°C to $+85^{\circ}\text{C}$
Body material	PBT
Button material	PBT
Contacts	Gold plated palladium nickel (FL) Silver (MS)
Terminals	Tin plated brass (MS)
Salt mist	BS2011 Part 2:1
Soldering information	320°C max for 3s

Key:

FL – Version with flying leads

MS – High current microswitch terminated version



Ordering information

Button style

- Round bezel
- Square bezel
- Round bezel – Illuminated

Termination/Body style

- 500mm leads
- 16-439088 (Non-illuminated only)

Button colour

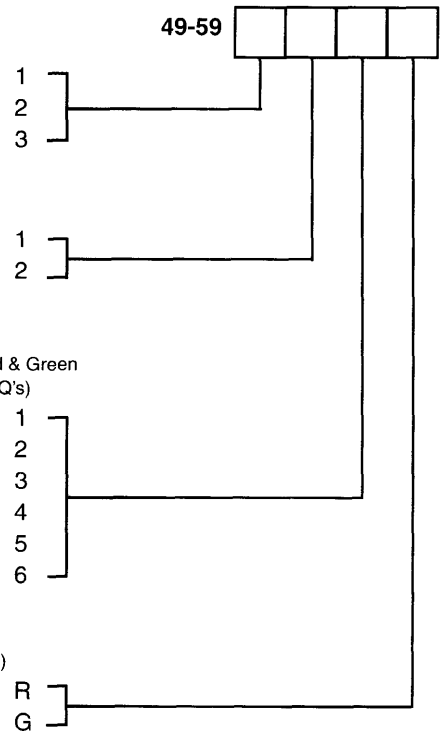
(Illuminated version only available with Black, Red & Green as standard. Non-standard colours subject to MOQ's)

- Black
- Red
- Green
- White
- Yellow
- Blue

LED colour

(This digit is only required for illuminated switches)

- Red
- Green



Mounting information

The series 49-59 fits neatly into a $\phi 16\text{mm}$ cut out in a panel no more than 8mm thick for the flying lead version and no more than 1.5mm thick for the microswitch version (with sealing washer). The switch body is fitted from the front of the panel and is locked down with an M16 nut using a 20mm spanner. Panel sealing is achieved by the use of a sealing washer which is placed behind the head of the bezel. To attain the correct sealing, the nut should be tightened to a recommended torque of between 1Nm and 1.5Nm not exceeding

2Nm. Whilst the flying lead version is now mounted, the microswitch still requires careful 'snapping' into its holder from behind the panel.

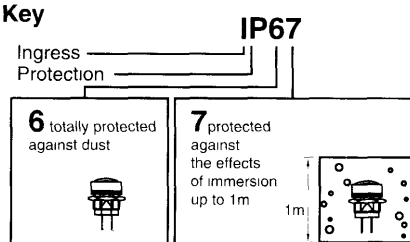
Each flying lead switch is supplied with 500mm 24 AWG 7/32 UL 1569 leads which are PVC insulated and have plain unstripped ends

The microswitch version has 2.8mm QC terminals which also provide the option to solder.

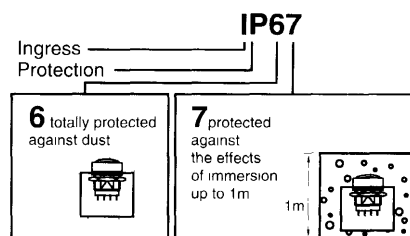
Double 'D' flats are provided to prevent rotation of the switch in the panel.

Ingress Protection Rating Key

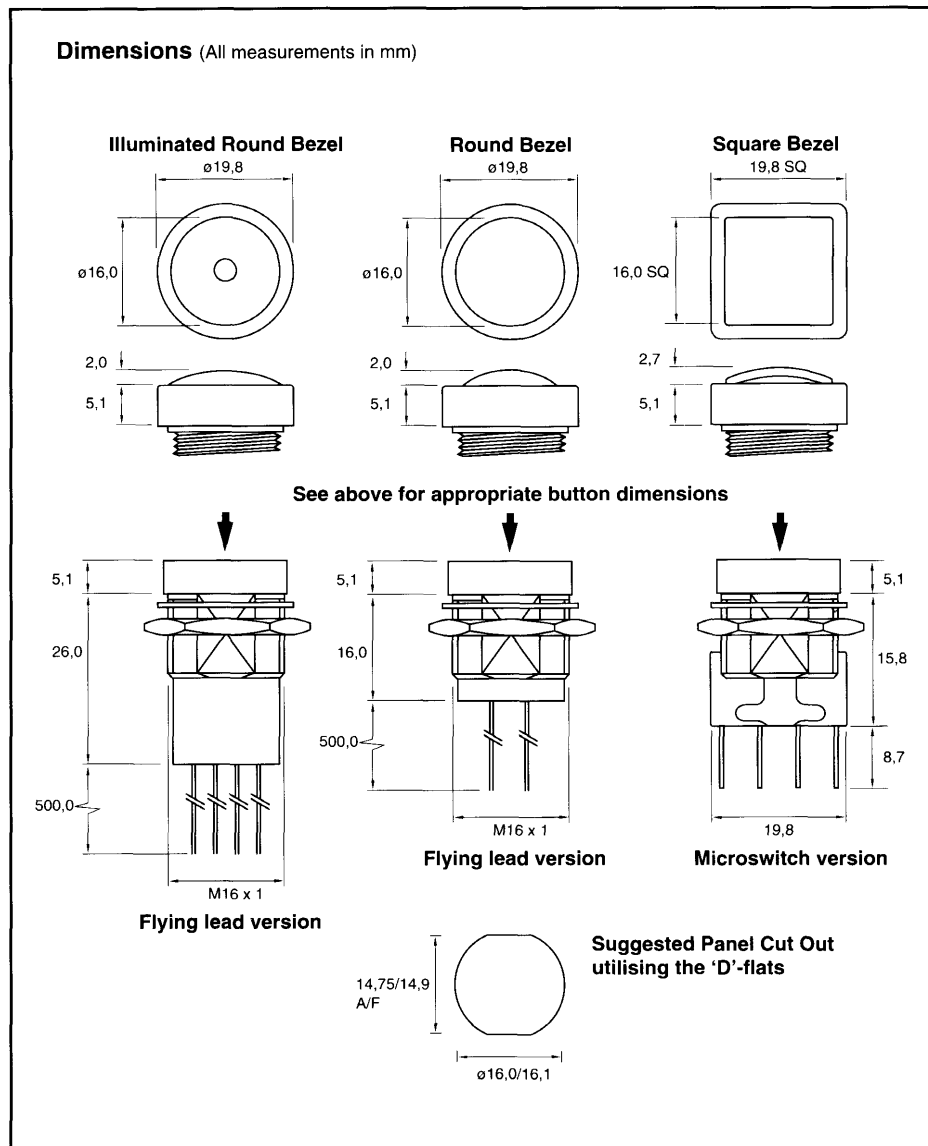
For flying lead version



For microswitch version



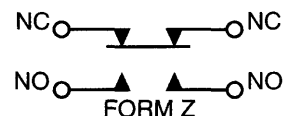
Product drawings



Circuit for flying lead version



Circuit for microswitch version



Application references

- Communications
- Instrumentation
- Data processing
- Military environments

- Environmentally demanding keypads
- Mass transport controls
- Dry circuit switching

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

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Due to our policy of continuous product development, ITW Switches retain the right to change the specification at any time without prior notice