

SERIES 49-59 – SEALED PUSHBUTTON RANGE

FEATURES

- Fully sealed version to IP67
- LED status illumination (FL)
- 10A version panel sealed to IP67
- Wide temperature range:
Up to +105°C
- Industrial standard \varnothing 16mm 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

Technical Information

Series 49-59

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.

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	1000V a.c. for 1 min
Insulation resistance	1G Ω @ 500V d.c.
Contact resistance	150m Ω max initial inc leads (FL) 25m Ω max initial (MS)
Current rating	400mA @ 32V a.c. res (FL) 100mA @ 50V d.c. res (FL) 125mA @ 125V a.c. res (FL) 10A @ 250V a.c. res (MS)
Life	500,000 cycles (FL) 50,000 cycles @ 70°C (MS)

Electrical – LED

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

Environmental & Physical

Ingress protection	IP67
Vibration	DEF STD 07-55
Non-illuminated	
Operating temperature range	-55°C to +105°C
Illuminated	
Operating temperature range	-35°C to +85°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	1
Square bezel	2
Round bezel – Illuminated	3

49-59 –

Termination/Body Style

500mm leads	1
16-439088 (Non-illuminated only)	2

Button Colour

Black	1
Red	2
Green	3
White	4
Yellow	5
Blue	6

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

LED Colour

Red	R
Green	G

(This digit is only required for illuminated switches)

Mounting Information

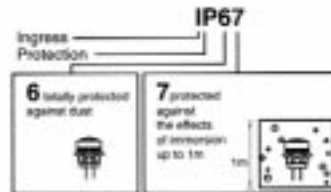
The Series 49-59 fits neatly into a $\varnothing 16\text{mm}$ cut out panel no more than 8mm thick for the flying lead version and no more than 1,5mm thick for the microswitch version (with sealing washer). The switch body is fitted from the front of the panel and is locked down with an M16 nut using 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 24AWG 7/32 leads which are PVC insulated and have plain unstripped ends.

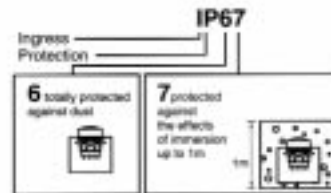
The microswitch version has 2.8mm QC terminals which also provide the option to solder. Double 'D' flats are provided to prevent rotation of the switch in the panel.

Ingress Protection Rating Key

For flying lead version



For microswitch version

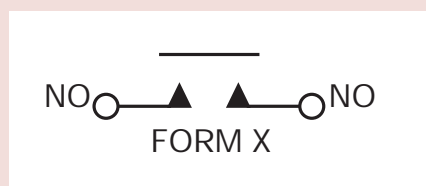
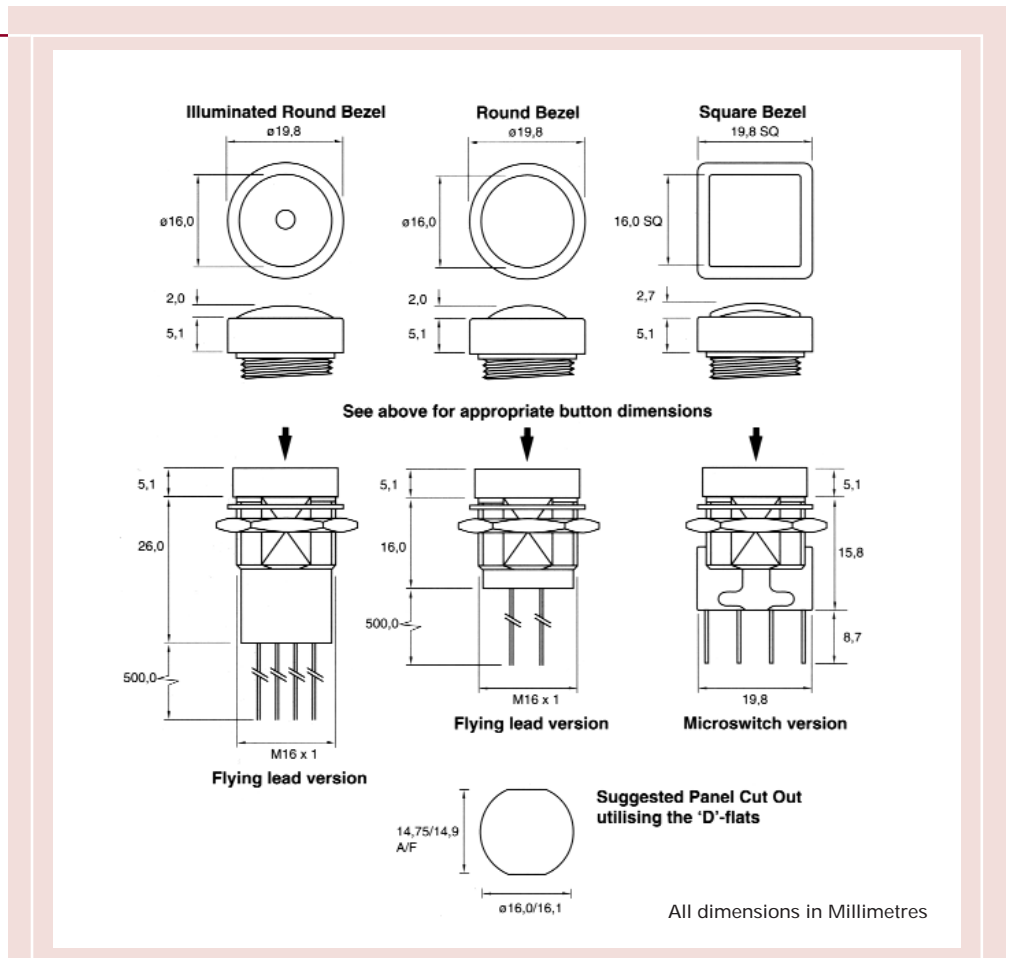


SERIES 49-59

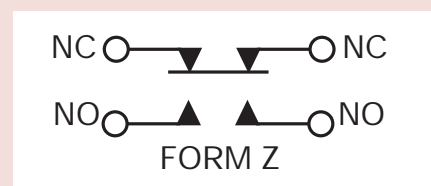
Sealed Pushbutton Range

Technical Information

Product Drawings



Circuit for flying lead version



Circuit for microswitch version

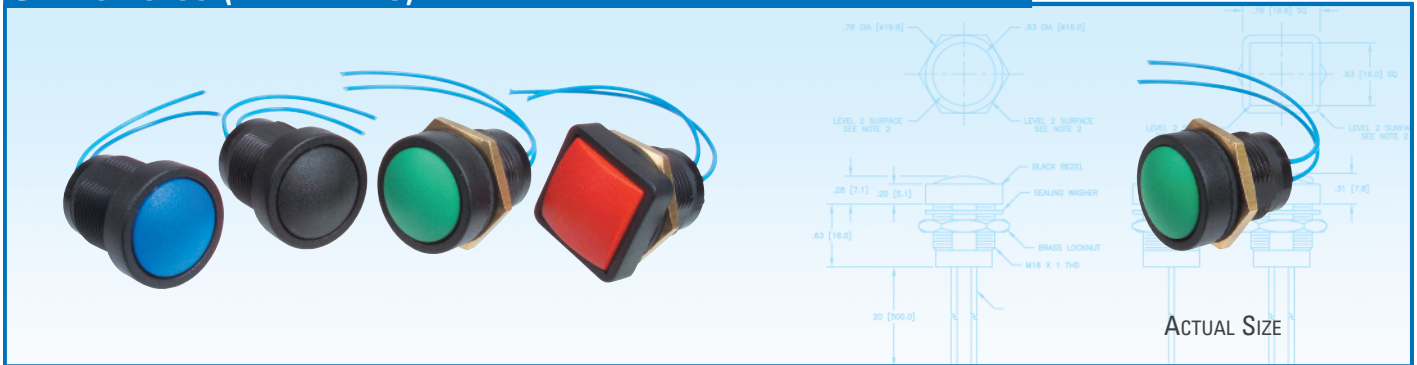
Application References

- Communications
- Instrumentation
- Data processing
- Military environments
- Environmentally demanding keypads
- Mass transport controls
- Dry circuit switching

Further Information

For further information on our complete range of switch products, visit our website – www.itwswitchcon.com or contact our Sales Office.

SERIES 49-59 (WITH LEADS)



Fully Sealed Pushbutton Switches with Wire Leads

This fully sealed switch series is SPDT-DB for a variety of circuit requirements. The double break mechanism also provides reliable switching of DC loads. This rugged switch is ideal for harsh environments.

KEY FEATURES:

- Fully sealed to IP67
- Momentary action
- Wire leads
- Flame retardant UL rated material
- Gold plated contacts
- Life up to 500,000 cycles

APPLICATIONS

- Communications
- Instrumentation
- Data processing
- Military environments
- Mass transport controls
- Dry circuit switching

ORDERING INFORMATION:

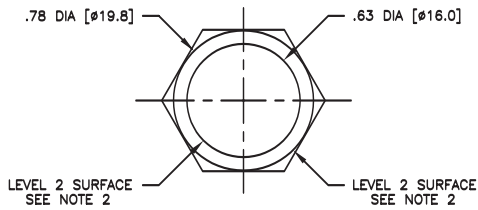
Part Number	Button Style	Button Color
49-59111	Round bezel	Black
49-59112	Round bezel	Red
49-59113	Round bezel	Green
49-59211	Square bezel	Black
49-59212	Square bezel	Red
49-59213	Square bezel	Green

STANDARDS / AGENCY / RATINGS:

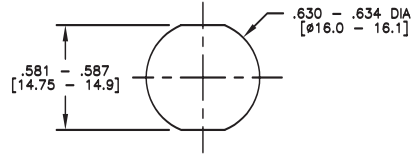


SERIES 49-59—FULLY SEALED PUSHBUTTON WITH WIRE LEADS

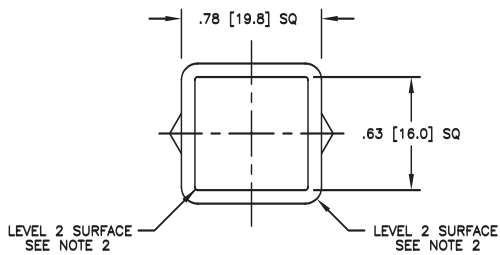
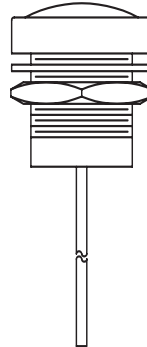
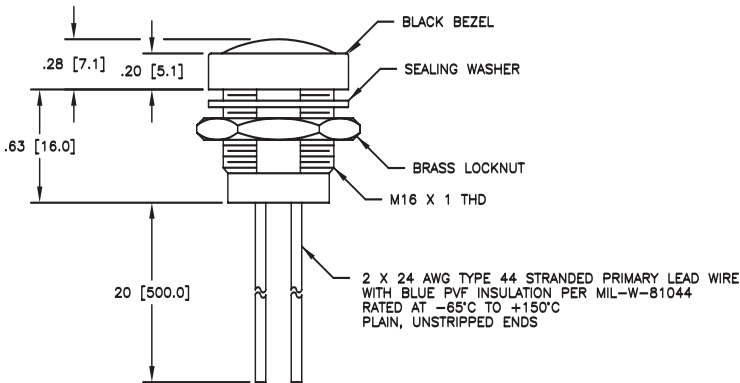
SWITCH



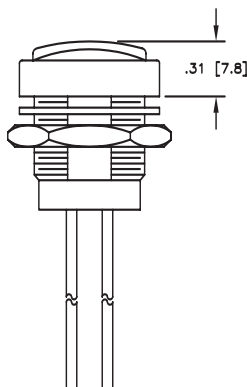
ROUND BEZEL
49-5911X



RECOMMENDED PANEL CUT-OUT



SQUARE BEZEL
49-5921X



MECHANICAL / ELECTRICAL CHARACTERISTICS:

Circuit:

SPST-NO-DB

Travel:

.09 (2.3) nominal

Operating force:

306 grams (3N)

Panel thickness:

.31 (8) max.

Contact material:

gold plated palladium nickel

Contact resistance (initial):

150 milliohms max including wire leads

Dielectric strength:

1kVAC for 1 min

Insulation resistance:

1 GΩ @ 500 VDC

Contact resistance:

50 mΩ max initial including leads

Life (max):

1,000,000 cycles (mechanical)

500,000 (Max) cycles (electrical)

Operating temperature:

-55°C to 105°C (-67°F to +221°F)

Body and button material:

PBT

Contact material:

gold plated palladium nickel

ITW Switches

7301 W. Ainslie Street
Harwood Heights, IL 60706

800.544.3354

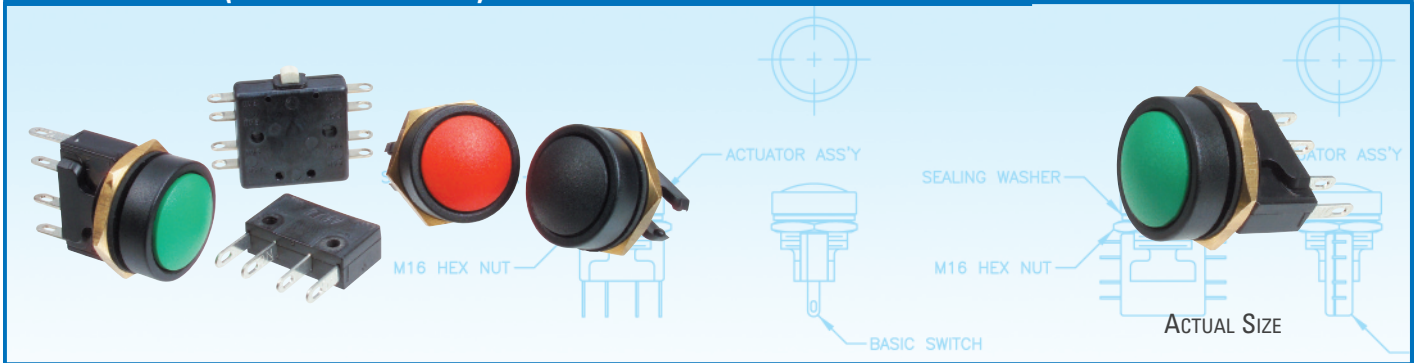
708.667.3370

708.667.3440 (Fax)

www.itwswitches.com

customer_service@itwswitches.com

SERIES 49-59 (WITH TERMINALS)



Panel Sealed Pushbutton Switches with Series 16 and 26 Snap Switches

These rugged panel sealed pushbuttons employ the workhorse basic switches for high (or low) current applications. Connections are made with solder terminals at the rear of the switch. The pushbuttons are available with square or round bezels. These switches are ideal for harsh environments.

KEY FEATURES:

- Panel sealed to IP67
- Momentary action
- Solder terminals
- Flame retardant UL rated material
- Life (min.) – 1,000,000 cycles
- Available with Series 16 or 26 switch
- Rated up to 10 amps

APPLICATIONS

- Environmentally demanding keypads
- Mass transport controls
- Communications
- Instrumentation
- Data processing
- Military environments

ORDERING INFORMATION:

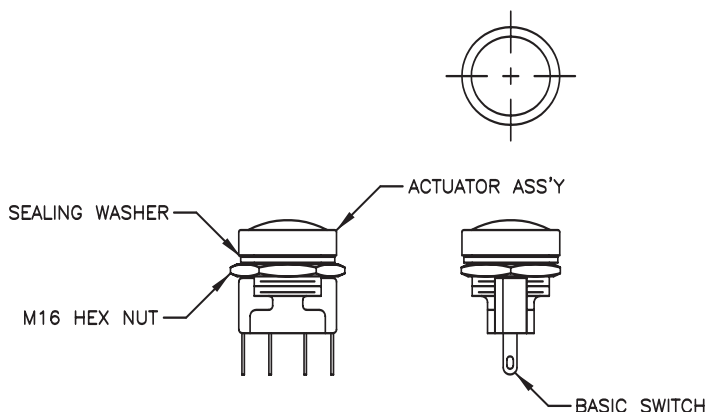
Part Number	Button Style	Button Color	Circuit	Contact Material
49-5911 / 530004	Round	Black	SPDT-DB	Silver
49-5912 / 530004	Round	Red	SPDT-DB	Silver
49-5913 / 530004	Round	Green	SPDT-DB	Silver
49-5911 / 810	Round	Black	DPDT-DB	Enhanced Gold
49-5912 / 810	Round	Red	DPDT-DB	Enhanced Gold
49-5913 / 810	Round	Green	DPDT-DB	Enhanced Gold

STANDARDS / AGENCY / RATINGS:

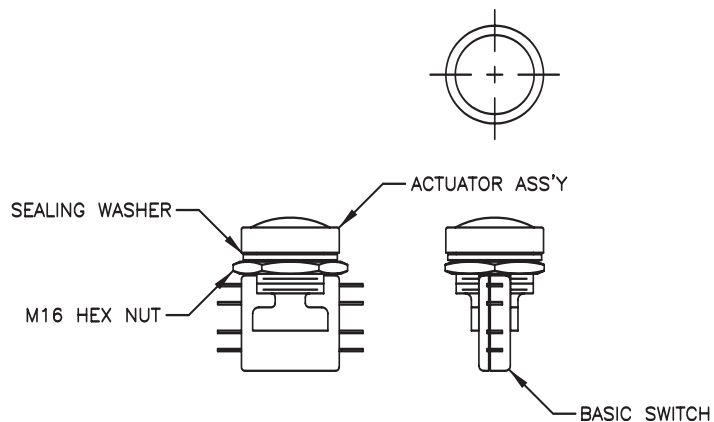


SERIES 49-59—PANEL SEALED PUSHBUTTON SWITCHES

49-591x / 530004



49-591x / 810



Current rating: 26-810

Load	Sea Level				70,000 Ft.	
	28 VDC DPDT	28 VDC 4 CKT	115 VAC 60 HZ DPDT	115 VAC 60 HZ 4 CKT	28 VDC DPDT	28 VDC 4 CKT
Resistive	8 amp	8 amp	6 amp	4 amp	8 amp	8 amp
Inductive	6 amp	4 amp	4 amp	4 amp	2 amp	1 amp
Lamp	0.5 amp	0.5 amp	2 amp	1 amp	—	—

INSTALLATION:

The actuator assembly is installed from the front of the panel and locked down with the hex nut using a 20mm spanner. To attain the correct sealing, the nut should be tightened to a recommended torque of between 1.106 pound/foot (1.5 Nm) not exceeding 1.475 pound/foot (2 Nm). The basic switch can then be snapped into place from the back of the panel. Panel Thickness (Max): .118 (3.0)

MECHANICAL / ELECTRICAL CHARACTERISTICS:

Travel (nom):
.09 (2.3)

Operating force (nom):
387g–561g (3.8N–5.5N)

Dielectric strength:
1,000 VAC for 1 minute

Insulation resistance:
1 Gohm @ 500 VDC

Contact resistance initial:
25 milliohms max.

Current Rating (typical):
400mA at 32 VAC resistive
100mA at 50 VDC resistive
125mA at 125 VAC resistive

Electrical:
Life: 50,000 cycles
@ 158°F (70°C)

Current rating 16-530004:
Form X or Y: 10 amps 125 VAC; 10 amps 28 VDC IND.
Form Z: 5 amps 125/250 VAC;
3 amps 28 VDC IND.

Current rating 26-810:
See chart on left

Operating temperature:
-67°F to +221°F
(-55°C to +105°C)

Body/Button material:
PBT

Contacts 16-530004:
silver

Contacts 26-810
enhanced gold

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