

# DURAKOOL

## IP67 Metal Push Button Switches

*from*



# DS series

IP67 sealed push button switches

# DURAKOOL

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# DS series

## IP67 sealed push button switches

# DURAKOOL



- M12, M16, M19, M22, M25, M28 & M30 variants
- Two color indication - super bright LED's
- Vandal resistant
- Sealed to IP67s, "Waterproof"
- RoHS Compliant



### Specifications

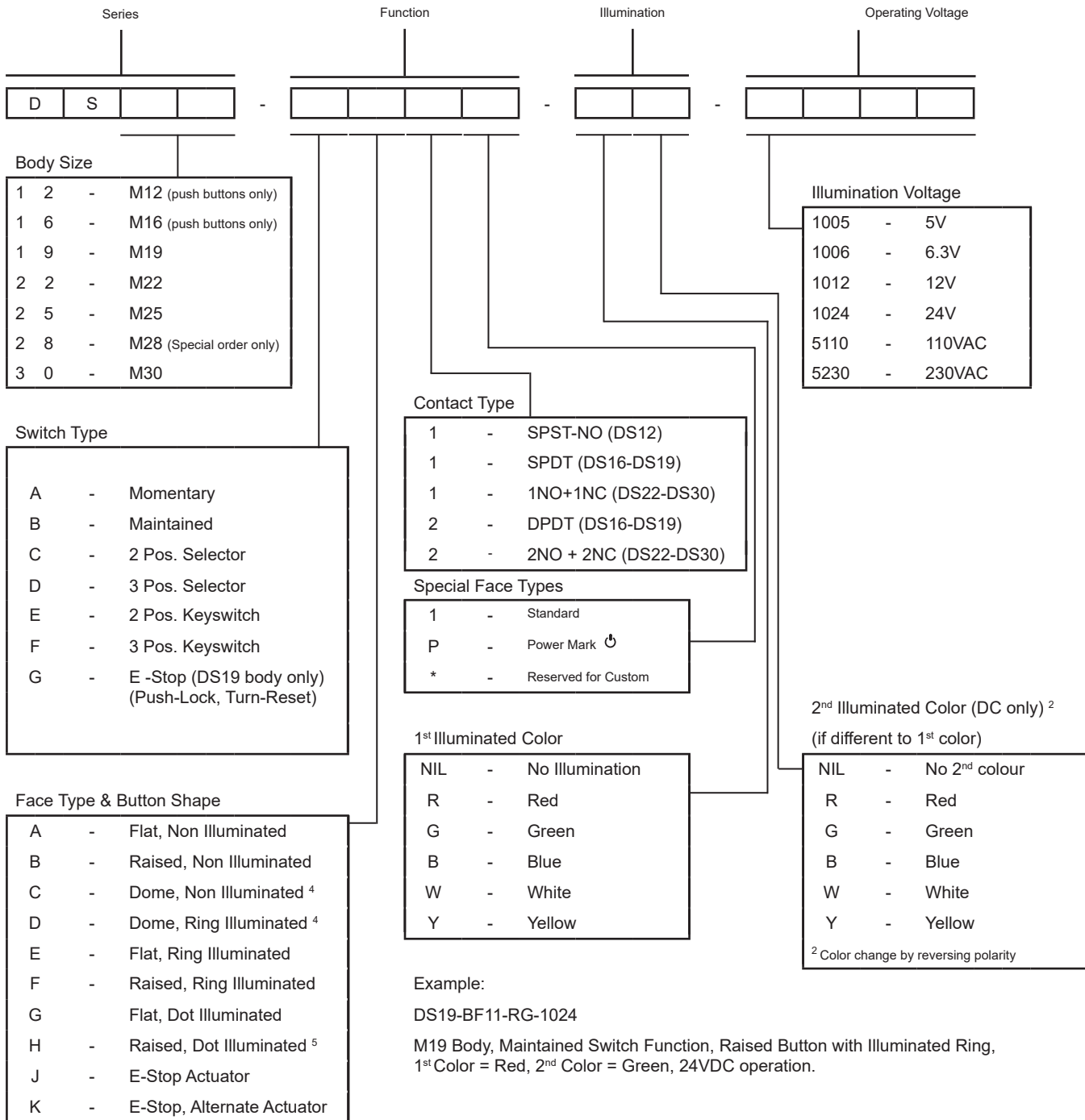
Construction	Stainless steel body, plastic switch housing	
Degree of protection	IP67	
Contact number & arrangement	SPST-NO, SPDT, SPST-NO + SPST-NC, DPDT, DPST-NO + DPST-NC (availability depends on body size and actuator style).	
Switch Functions	Momentary, Maintained, Keylock, 2 or 3 Position Selector, E-Stop	
Contact material	Ag alloy, Au plated	
Max. switching voltage	AC/DC	250V
Thermal current	3A (DS12 to DS19) / 5A (DS22 to DS30)	
Minimum applicable load	AC/DC	5V, 1mA
Contact resistance	50mΩ maximum	
Insulation resistance	≥100MΩ / 500V DC	
Dielectric strength	Switch	2000VAC, 1 min between live/dead parts and terminals of different poles.
		1000VAC, 1 min between terminals of the same pole
		1500VAC, 1 min between contact and lamp terminals
	Indicator	2000VAC, 1 min between live parts and ground.
Electrical life	ops	≥100,000 at full rated load
Mechanical life	ops	≥1,000,000. (Selector/Keylock type ≥ 250,000)
Dimensions	L x W x H	see tables and diagrams for each type
Weight	>10g	
Terminal style	0.110" Solder/Quick Connect	
Ambient temperature	operating	-25°C to 55°C
Humidity range	45% to 85%RH	
Vibration resistance	10-55Hz DA. 1.2mm p-p	
Shock resistance	>10g	
Standards	UL508, EN60947-1, EN60947-5-1	
Solderability	260°C / 3 seconds	
LED Colors available	Red, Green, Yellow, Blue, White	
LED Current consumption	5V, 6V, 12V DC	approx 12mA
	24V DC	approx 9mA
	110V, 230V AC	approx 4mA. Uses 6V LED internally, external resistor required.

# DS series

## IP67 sealed push button switches



Ordering codes - switches



NB: Not all possible combinations are valid.

<sup>4</sup>Domed Push Button (Button types C & D) only available in body size DS19 and above.

<sup>5</sup>Raised, Dot Illuminated Button (Type H) only available in body sizes DS12 and DS16.

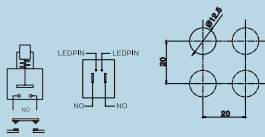


### DS12

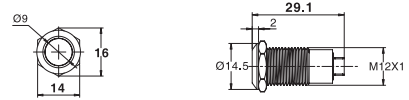


**Features:**

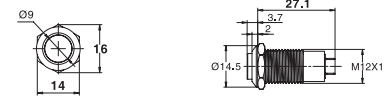
- \* 12mm dia.
- \* IP67 Sealed
- \* SPST-NO Switch
- \* LED illumination = no heat



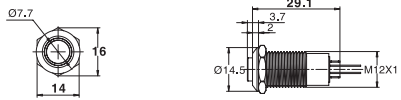
Type A



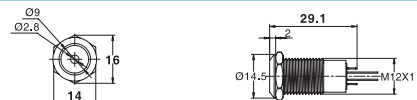
Type B



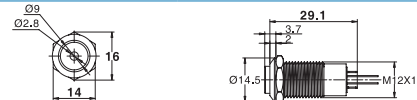
Type F



Type G



Type H

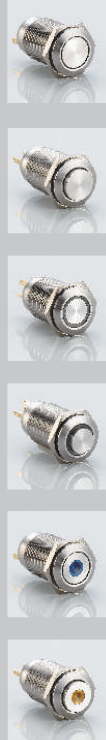
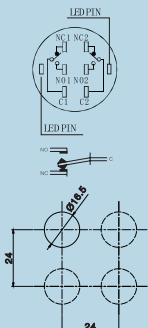


### DS16

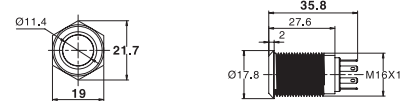


**Features:**

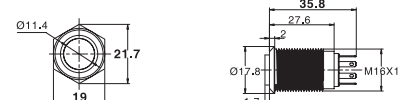
- \* 16mm dia.
- \* IP67 Sealed
- \* SPDT or DPDT switch
- \* LED illumination = no heat



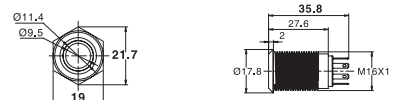
Type A



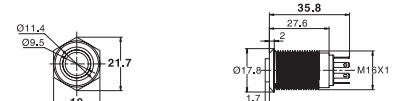
Type B



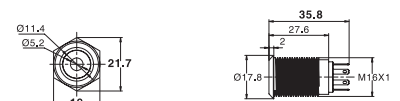
Type E



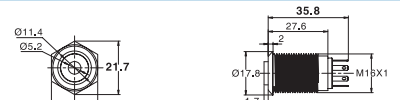
Type F



Type G



Type H



# DS series

## IP67 sealed push button switches



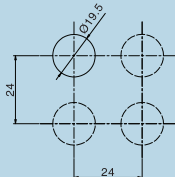
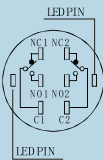
DS19



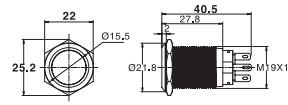
**Features:**

- \* 19mm dia.
- \* IP67 Sealed
- \* SPDT or DPDT Switch
- \* LED illumination = no heat
- \* E-Stop Options
- \* Key operation option
- \* 2 & 3 Position selector switch

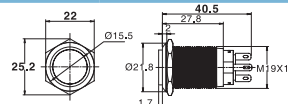
See Page 7 for selector switch functions.



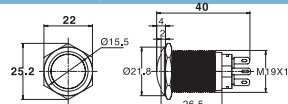
Type A



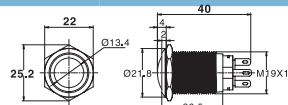
Type B



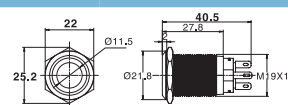
Type C



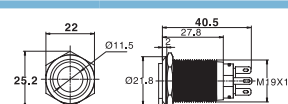
Type D



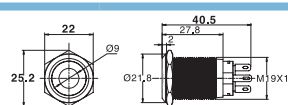
Type E



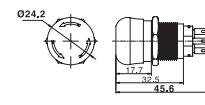
Type F



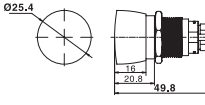
Type G



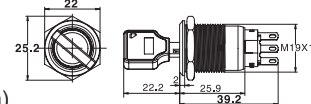
Type J (E-Stop)



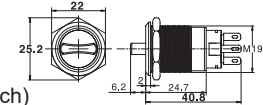
Type K (E-Stop)



Type EA & FA (Keypad)



Type CA & DA (Selector)



			DS22	
	L: 1 pole : 37.15mm 2 pole : 42.50mm	Type A		<p><b>Features:</b></p> <ul style="list-style-type: none"> <li>* 22mm dia.</li> <li>* IP67 Sealed</li> <li>* SPST-NO + SPST-NC</li> <li>* DPST-NO + DPST-NC</li> <li>* LED illumination = no heat</li> </ul>
	L: 1 pole : 40.15mm 2 pole : 45.50mm	Type B		
	L: 1 pole : 39.15mm 2 pole : 44.50mm	Type C		
	L: 1 pole : 37.15mm 2 pole : 42.50mm	Type E		
	L: 1 pole : 40.15mm 2 pole : 45.50mm	Type F		
	L: 1 pole : 37.15mm 2 pole : 42.50mm	Type G		
			DS25	
	L: 1 pole : 40.60mm 2 pole : 42.25mm	Type A		<p><b>Features:</b></p> <ul style="list-style-type: none"> <li>* 25mm dia.</li> <li>* IP67 Sealed</li> <li>* SPST-NO + SPST-NC</li> <li>* DPST-NO + DPST-NC</li> <li>* LED Illumination = no heat</li> </ul>
	L: 1 pole : 43.15mm 2 pole : 44.80mm	Type B		
	L: 1 pole : 43.15mm 2 pole : 44.80mm	Type C		
	L: 1 pole : 43.15mm 2 pole : 44.80mm	Type D		
	L: 1 pole : 40.60mm 2 pole : 42.25mm	Type E		
	L: 1 pole : 43.15mm 2 pole : 44.80mm	Type F		
	L: 1 pole : 40.60mm 2 pole : 42.25mm	Type G		

# DS series

## IP67 sealed push button switches

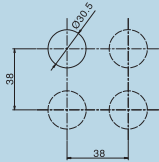
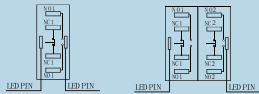


### DS30



#### Features:

- \* 30mm dia.
- \* IP67 Sealed
- \* SPST-NO + SPST-NC
- \* DPST-NO + DPST-NC
- \* LED Illumination = no heat



Type A		L: 1 pole : 40.60mm 2 pole : 42.25mm
Type B		L: 1 pole : 43.15mm 2 pole : 44.80mm
Type C		L: 1 pole : 43.15mm 2 pole : 44.80mm
Type D		L: 1 pole : 43.15mm 2 pole : 44.80mm
Type E		L: 1 pole : 40.60mm 2 pole : 42.25mm
Type F		L: 1 pole : 43.15mm 2 pole : 44.80mm
Type G		L: 1 pole : 40.60mm 2 pole : 42.25mm

DS19 Key and Selector Switch Functions

Table 1

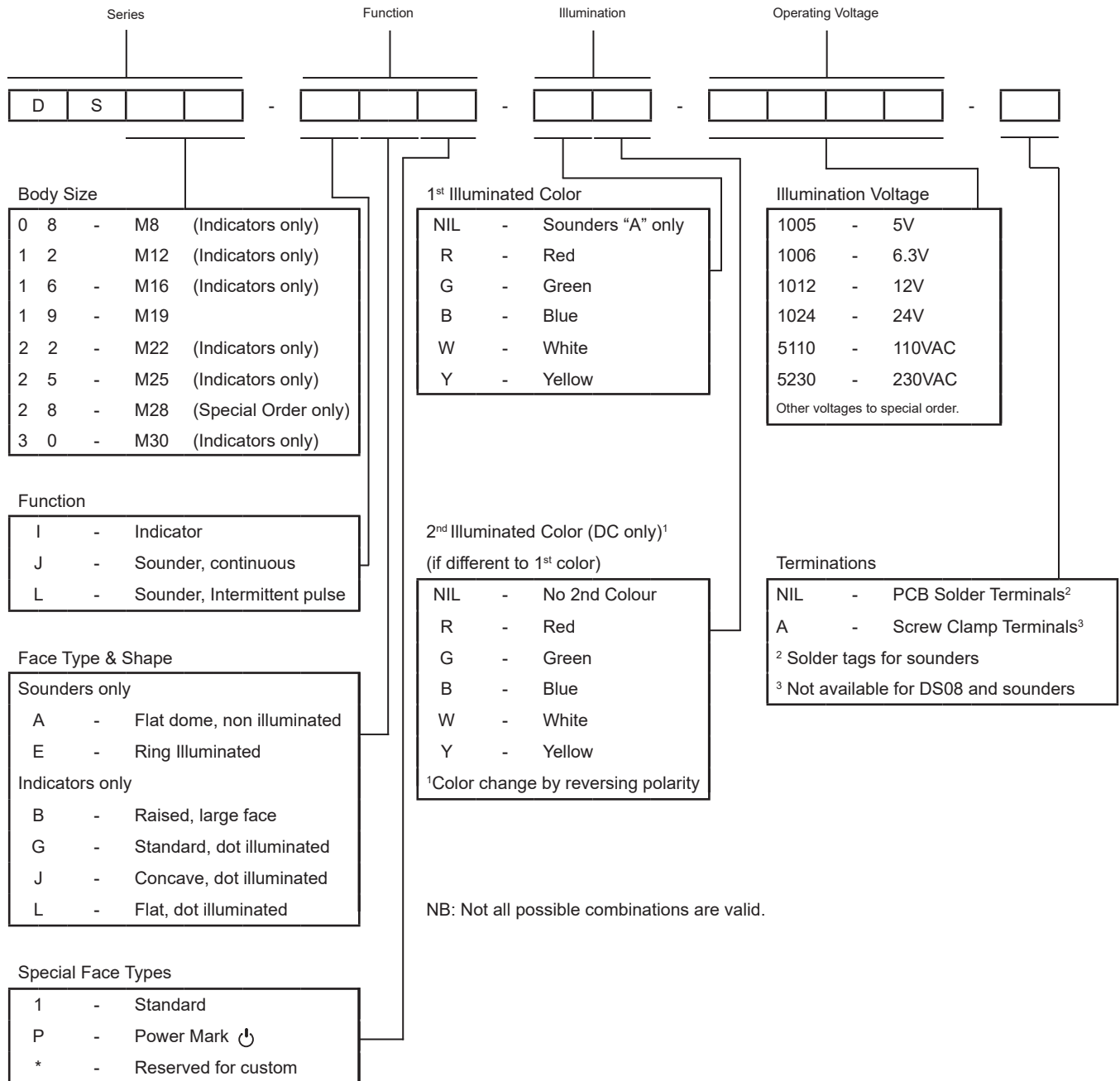
Operation		Contact	↙	↑	↗
90° 2 Position		SPDT			
	Momentary	DPDT			
90° 3 Position	Maintained	3 Position			
	Left Lock <sup>1</sup>				
	Right Reset				
	Momentary				

<sup>1</sup> Consult factory for availability and ordering.





### Ordering codes - indicators and sounders



# DS series

## IP67 sealed push button switches



### DS Series Indicators



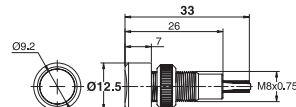
#### Features:

- \* Screw terminals (not DS08)
- \* LED illumination = no heat
- \* Matches DS Series Switches
- \* IP67 Sealed



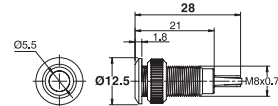
DS08

Type B



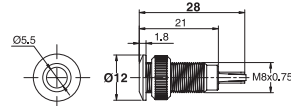
DS08

Type G



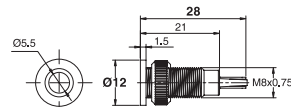
DS08

Type J



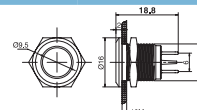
DS08

Type L



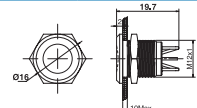
DS12

Type J



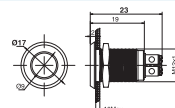
DS12

Type L



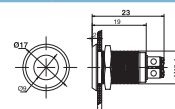
DS12

Type J - A



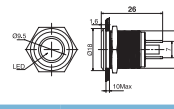
DS12

Type L - A



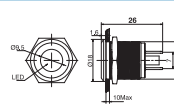
DS16

Type J



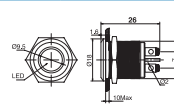
DS16

Type L



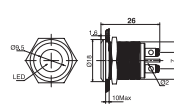
DS16

Type J - A



DS16

Type L - A



Not to scale



		DS Series Indicators	
	Type B	DS19	
	Type L	DS19	
	Type J - A	DS19	
	Type L - A	DS19	
	Type J	DS22	
	Type L	DS22	
	Type J - A	DS22	
	Type L - A	DS22	
	Type J	DS28	
	Type L	DS28	
	Type J - A	DS28	
	Type L - A	DS28	



- Features:**
- \* Screw Terminals (Not DS08)
  - \* LED illumination = no heat
  - \* Matches DS Series Switches
  - \* IP67 Sealed

Not to scale

# DS series

## IP67 sealed push button switches



### DS Series Indicators



#### Features:

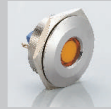
- \* Screw Terminals (Not DS08)
- \* LED illumination = no heat
- \* IP67 Sealed
- \* Matches DS Series Switches

### DS19 Series Sounders

#### Features:

- \* 19mm dia.
- \*  $\geq 85\text{dB}$  (0.1m) Sound Intensity
- \* Continuous or pulse types
- \* LED illumination = no heat
- \* Matches DS Series Switches

### Accessories



DS30



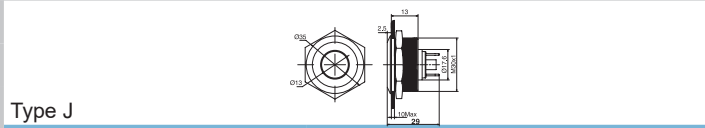
DS30



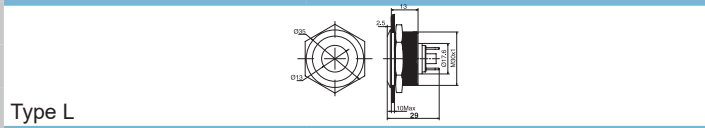
DS30



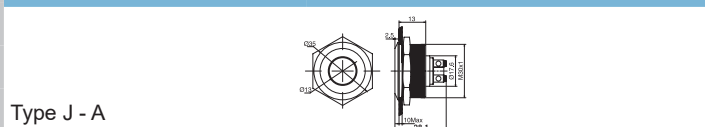
DS30



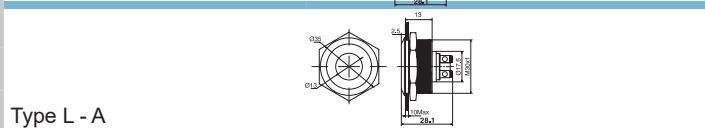
Type J



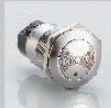
Type L



Type J - A



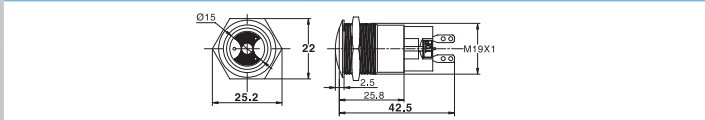
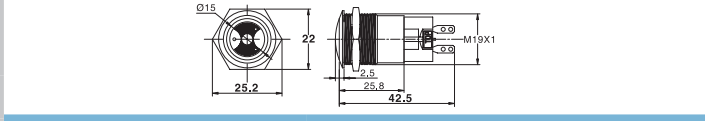
Type L - A



DS19JA  
DS19LA



DS19JE  
DS19LE



### DS16 Accessories

Protective Cover	Insulated Terminal Cover	Sockets		Blanking Plug
DHK16M1	DH16KP	DH16S114	DH16S113	DH16KG
		Solder Terminals	PCB Terminals	
Connectors				
D16-C	D19-C	D22-C	D25-C	
DS16	DS19	DS22+ SPST	DS22+ DPDT	





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- contactors
- timer relays
- mercury contactors
- tilt switches
- tip-over switches and sensors
- G - force switches
- float switches
- liquid level switches & sensors
- hermetic seals & feed-thru's
- sight glasses

presented by:



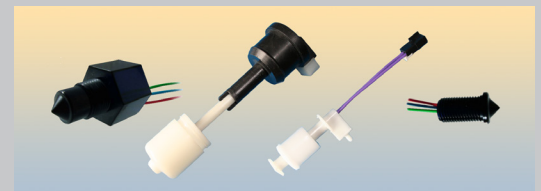
Mercury Contactors



Tilt and Tip-over Switches



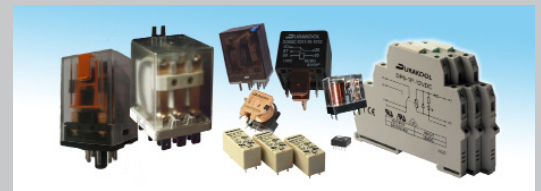
Hermetic Seals



Float Switches and Liquid Level Sensors



Proximity sensors



Electromechanical Relays & D. P. Contactors

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