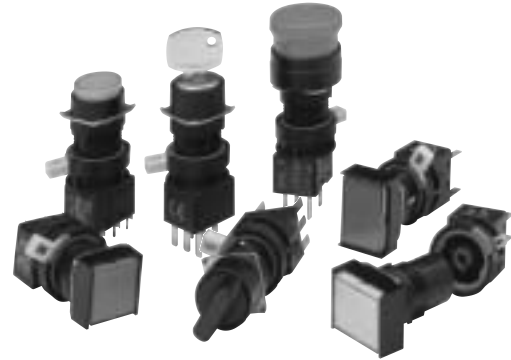


L6 Series — Miniature Switches and Pilot Devices

Key features of the 5/8" L6 Series include:

- 5/8" (16mm) mounting holes
- Locking lever removable contact blocks
- Solder terminal or PCB terminal options
- Available assembled or as sub-components
- Worldwide approvals
- Incandescent or LED illumination
- Snap action contacts



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Switches & Pilot Devices



UL Recognized
File No. E55996



CSA Certified
File No. LR21451



Registration No. R9551089 (E-stops)
Registration No. J9551458 (all other switches)
Registration No. J9650511 (Pilot Lights)

Contact Ratings	Conforming to Standards	EN60947-1, EN60947-5-1, VDE0660-200, UL508, CSA C22-2 NO.14					
	Operating Temperature	Operation: -25 to +55°C (without freezing), 45 to 85% rh Storage: -30 to +80°C (without freezing)					
	Vibration Resistance	5 to 55Hz, 1.0 peak-peak amplitude max					
	Shock Resistance	Operating limit: 100 m/sec ² (approximately 10G) Damage limit: 1000 m/sec ² (approximately 100G)					
	Mechanical Life	Momentary pushbuttons 2,000,000 operations minimum All others: 250,000 operations minimum					
	Degree of Protection	IP65 (conforming to IEC 60529)					
	Dielectric Strength	Switch unit: between live and ground: 2500 volt AC, 1 minute between terminals of different poles: 2500 volt AC, 1 minute between terminals of same pole: 1000 volt AC, 1 minute Illumination unit: between live part and ground: 2500 volt AC, 1 minute					
	Insulation Resistance	100 MΩ minimum (using 500V DC megger)					
	Rated Insulation Voltage	250 V AC/DC					
	Rated Thermal Current	Gold Contacts (pcb): 3A Silver Contacts (solder): 5A					
	Contact Resistance	50 Ω maximum initial value					
	Rated Operating Current		Silver Contacts (Solder Terminals)			Gold Clad Contacts (PCB terminals)	
			30V	125V	250V	30V	125V
	AC resistive	-	3A	2A	-	0.1A	
	AC inductive	-	2A	1.5A	0.1A	-	
	DC resistive	2A	0.4A	-	-	-	
	DC inductive	1A	0.2A	-	-	-	
Minimum Recommended Load (reference value for silver contacts)	5 VAC/DC, 1mA						
Terminal Style	0.110" Solder Tab /PCB						
Contact Form	Snap Action, Double Throw						
Contact Material	Solder Tab: Pure Silver /PCB thermal Gold Plated Silver						
Electrical Life (at full load)	Momentary pushbuttons: 100,000 operations minimum (1800 operations / hour) All others: 100,000 operations minimum (1200 operations / hour)						
Lamp Ratings	Lamp Current Draw	5V DC LED: 8mA		6V incandescent: 100 mA			
		6V LED: 7mA		12V incandescent: 50 mA			
		12V LED: 8mA		24V incandescent: 25 mA			
	Lamp Life	Incandescent: 2000 hours./LED: 50,000 hours. (on pure DC, half-life intensity)					
Buzzer Ratings	Frequency	2 khz ± 500 HZ					
	Amplitude	80db @ 0.1m (at rated voltage)					
	Operating Voltage	6V AC/DC or 12 - 24V AC/DC ± 10%					
	Adjustable Cycle	55 to 600 cycles per minute					
	Current Draw	DC: 7mA AC: 20mA					
	Life	1000 hrs. minimum					
	Insulation Voltage	60V AC/DC					
	Operating Temperature	-20 to 55 C (no freezing), 45 to 85% rh					

Key Switches (Assembled)

Part Numbers: Key Switches

Style		Operation	Contacts	Terminal Type		
				Solder Tab	PCB	
Round	90° 2-Position	Maintained		DPDT	LA1K-2C6 ^③	LA1K-2C2V ^③
		Spring return from right		DPDT	LA1K-21C6B	LA1K-21C2VB
	45° 3-Position	Maintained		DPDT	LA1K-3C6 ^③	LA1K-3C2V ^③
		Spring return from right		DPDT	LA1K-31C6 ^③	LA1K-31C2V ^③
		Spring return from left		DPDT	LA1K-32C6 ^③	LA1K-32C2V ^③
		2-Way spring return		DPDT	LA1K-33C6D	LA1K-33C2VD
Square	90° 2-Position	Maintained		DPDT	LA2K-2C6 ^③	LA2K-2C2V ^③
		Spring return from right		DPDT	LA2K-21C6B	LA2K-21C2VB
	45° 3-Position	Maintained		DPDT	LA2K-3C6 ^③	LA2K-3C2V ^③
		Spring return from right		DPDT	LA2K-31C6 ^③	LA2K-31C2V ^③
		Spring return from left		DPDT	LA2K-32C6 ^③	LA2K-32C2V ^③
		2-Way spring return		DPDT	LA2K-33C6D	LA2K-33C2VD
Rectangular	90° 2-Position	Maintained		DPDT	LA3K-2C6 ^③	LA3K-2C2V ^③
		Spring return from right		DPDT	LA3K-21C6B	LA3K-21C2VB
	45° 3-Position	Maintained		DPDT	LA3K-3C6 ^③	LA3K-3C2V ^③
		Spring return from right		DPDT	LA3K-31C6 ^③	LA3K-31C2V ^③
		Spring return from left		DPDT	LA3K-32C6 ^③	LA3K-32C2V ^③
		2-Way spring return		DPDT	LA3K-33C6D	LA3K-33C2VD
Oversize Round	90° 2-Position	Maintained		DPDT	HA1K-2C6 ^③	HA1K-2C2V ^③
		Spring return from right		DPDT	HA1K-21C6B	HA1K-21C2VB
	45° 3-Position	Maintained		DPDT	HA1K-3C6 ^③	HA1K-3C2V ^③
		Spring return from right		DPDT	HA1K-31C6 ^③	HA1K-31C2V ^③
		Spring return from left		DPDT	HA1K-32C6 ^③	HA1K-32C2V ^③
		2-Way spring return		DPDT	HA1K-33C6D	HA1K-33C2VD

Contact Operations (for all selectors)

Contacts	Operator Position and Contact Operation	
	Left	Right
2-pos. (DPDT)		
3-pos. (DPDT)	Left 	Right
	Center 	
	Right 	



As viewed from front of switch.

③ Key Retention Option Codes

Code	Description
A	Key not retained in any position (removable in all positions)
B	Key retained in right position only
C	Key retained in left position only
D	Key retained in left and right (3 position only)
E	Key retained in center only (3 position only)
G	Key retained right and center (3 position only)
H	Key retained left and center (3 position only)



Key cannot be removed from a spring-return position.



- In place of ③ specify Key Retention Code from next page.
- All assembled key switches have DPDT contacts. For SPDT see sub-assembled on next page.
- PCB terminal models also available with silver contacts (change "1" or "2" to "5" or "6" respectively, ie LA1K-2C2V^③ becomes LA1K-2C6V^③).

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Switches & Pilot Devices







Key Switches (Sub-Assembled)



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Switches & Pilot Devices


Part Numbers: Operators

Style	Positions	Operation	Part Number
 Round	2	Maintained Spring from right	LA1K-2 ^③ LA1K-21B
	3	Maintained Spring from right Spring from left Spring from both	LA1K-3 ^③ LA1K-31 ^③ LA1K-32 ^③ LA1K-33D
 Square	2	Maintained Spring from right	LA2K-2 ^③ LA2K-21B
	3	Maintained Spring from right Spring from left Spring from both	LA2K-3 ^③ LA2K-31 ^③ LA2K-32 ^③ LA2K-33D
 Rectangular	2	Maintained Spring from right	LA3K-2 ^③ LA3K-21B
	3	Maintained Spring from right Spring from left Spring from both	LA3K-3 ^③ LA3K-31 ^③ LA3K-32 ^③ LA3K-33D
 Oversize Round	2	Maintained Spring from right	HA1K-2 ^③ HA1K-21B
	3	Maintained Spring from right Spring from left Spring from both	HA1K-3 ^③ HA1K-31 ^③ HA1K-32 ^③ HA1K-33D



- In place of ③ specify key removable code from table on right.
- Operator includes two keys.

Part Numbers: Contacts

Appearance	Contacts	Terminal Style	
		Solder Tab	PCB
	Gold	SPDT DPDT	HA-C1 HA-C2 HA-C1V HA-C2V
	Silver	SPDT DPDT	HA-C5 HA-C6 HA-C5V HA-C6V



- All assembled selectors listed on previous page use DPDT contacts.
- SPDT contacts are for use on 2 position key switches only.

Part Number: Safety Lever Lock

Appearance	Part Number
	HA9Z-LS

③ Key Retention Option Codes

Code	Description
A	Key not retained in any position (removable in all positions)
B	Key retained in right position only
C	Key retained in left position only
D	Key retained in left and right (3 position only)
E	Key retained in center only (3 position only)
G	Key retained right and center (3 position only)
H	Key retained left and center (3 position only)



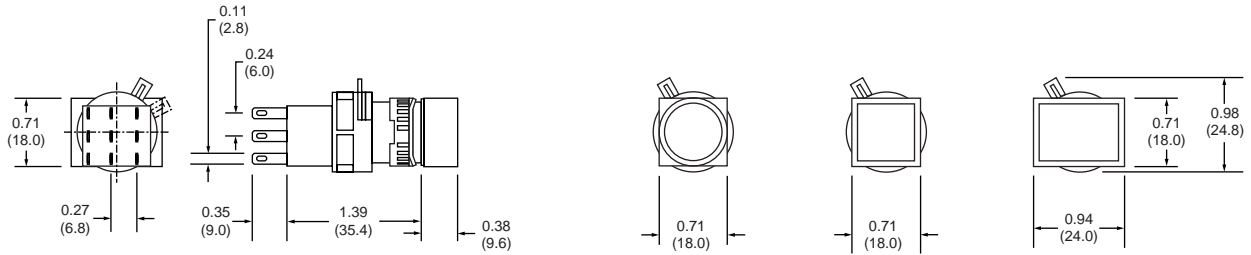
Key cannot be removed from a spring-return position.

Dimensions con't

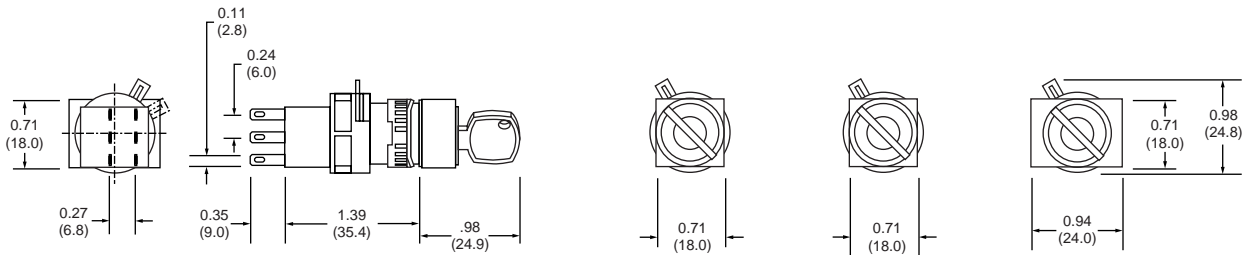
A2

Switches & Pilot Devices

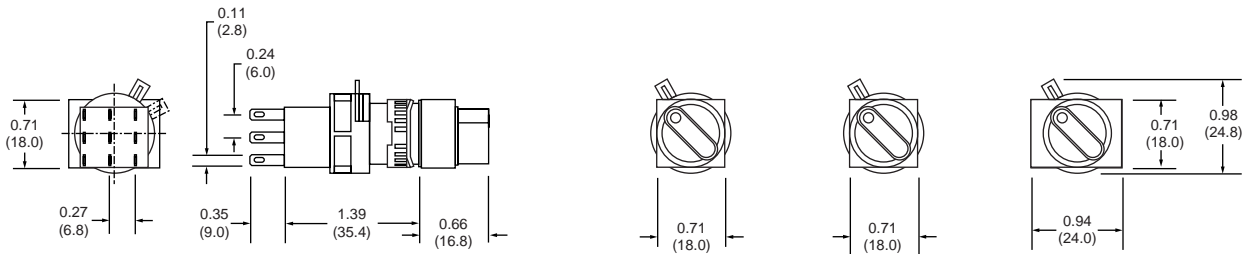
Illuminated Pushbuttons (LA*L)



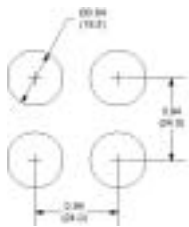
Key Switches (LA*K)



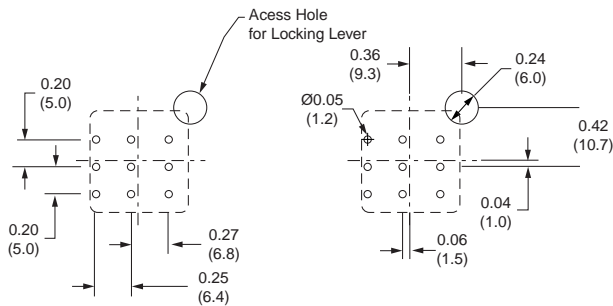
Selector Switches (LA*S)



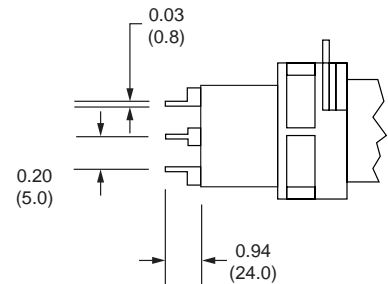
Panel Cut-Out



PCB Layout (except for Buzzer and E-Stop)



PCB Pins



HA1B E-Stop

PCB Mounting Pattern

