










## Non-Illuminated Pushbuttons (Assembled)

## Part Numbers: Non-Illuminated Pushbuttons

Style	Operation	Contact	Terminal Style	
			Solder Tab	PCB
 Round	Momentary	SPDT DPDT	LA1B-M1C5-① LA1B-M1C6-①	LA1B-M1C1V-① LA1B-M1C2V-①
	Maintained	SPDT DPDT	LA1B-A1C5-① LA1B-A1C6-①	LA1B-A1C1V-① LA1B-A1C2V-①
 Square	Momentary	SPDT DPDT	LA2B-M1C5-① LA2B-M1C6-①	LA2B-M1C1V-① LA2B-M1C2V-①
	Maintained	SPDT DPDT	LA2B-A1C5-① LA2B-A1C6-①	LA2B-A1C1V-① LA2B-A1C2V-①
 Rectangular	Momentary	SPDT DPDT	LA3B-M1C5-① LA3B-M1C6-①	LA3B-M1C1V-① LA3B-M1C2V-①
	Maintained	SPDT DPDT	LA3B-A1C5-① LA3B-A1C6-①	LA3B-A1C1V-① LA3B-A1C2V-①
 Oversize Round Flush	Momentary	SPDT DPDT	HA1B-M1C5-① HA1B-M1C6-①	HA1B-M1C1V-① HA1B-M1C2V-①
	Maintained	SPDT DPDT	HA1B-A1C5-① HA1B-A1C6-①	HA1B-A1C1V-① HA1B-A1C2V-①
 Oversize Round Extended	Momentary	SPDT DPDT	HA1B-M2C5-① HA1B-M2C6-①	HA1B-M2C1V-① HA1B-M2C2V-①
	Maintained	SPDT DPDT	HA1B-A2C5-① HA1B-A2C6-①	HA1B-A2C1V-① HA1B-A2C2V-①
 Oversize Square Flush	Momentary	SPDT DPDT	HA2B-M1C5-① HA2B-M1C6-①	HA2B-M1C1V-① HA2B-M1C2V-①
	Maintained	SPDT DPDT	HA2B-A1C5-① HA2B-A1C6-①	HA2B-A1C1V-① HA2B-A1C2V-①
 Oversize Square Extended	Momentary	SPDT DPDT	HA2B-M2C5-① HA2B-M2C6-①	HA2B-M2C1V-① HA2B-M2C2V-①
	Maintained	SPDT DPDT	HA2B-A2C5-① HA2B-A2C6-①	HA2B-A2C1V-① HA2B-A2C2V-①
 Mushroom	Momentary	SPDT DPDT	HA1B-M3C5-① HA1B-M3C6-①	HA1B-M3C1V-① HA1B-M3C2V-①
	Maintained	SPDT DPDT	HA1B-A3C5-① HA1B-A3C6-①	HA1B-A3C1V-① HA1B-A3C2V-①

## Button Color Codes

Color	Code
Black	B
Green	G
Red	R
Blue	S
White	W
Yellow	Y

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 1. In place of ① specify Button Color Code from table on right.  
 2. Illuminated (translucent) style lenses also available, specify as such: instead of LA1B-M1C5-① use LA1B-M1C5L-② in place of ② specify Lens Color Code from next page.)  
 3. PCB terminal models also available with silver contacts (change "1" or "2" to "5" or "6" respectively, ie LA1B-M1C1V-① becomes LA1B-M1C5V-①).

## Non-Illuminated Pushbuttons (Sub-Assembled)




### Part Numbers: Operators

Style	Momentary	Maintained
Round 	LA1L-M0	LA1L-A0
Square 	LA2L-M0	LA2L-A0
Rectangular 	LA3L-M0	LA3L-A0
Oversize Round 	HA1B-M0	HA1B-A0
Oversize Square 	HA2B-M0	HA2B-A0
Mushroom 	HA1B-M0L	HA1B-A0L

### Part Numbers: Buttons/Lenses

Style	Button	Lens
Round 	AB6M-BK2-①	AL6M-LK2-②
Square 	AB6Q-BK2-①	AL6Q-LK2-②
Rectangular 	AB6H-BK2-①	AL6H-LK2-②
Oversize Round Flush 	HA1A-B1-①	HA1A-L1-②*
Oversize Round Extended 	HA1A-B2-①	-
Oversize Square Flush 	HA2A-B1-①	HA2A-L1-②**
Oversize Square Extended 	HA2A-B2-①	-
Mushroom 	HA1A-B3-①	HA1A-L3-②

### 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

### Part Number: Safety Lever Lock

Appearance	Part Number
	HA9Z-LS

### ① Button Color Code

Color	Code
Black	B
Green	G
Red	R
Blue	S
White	W
Yellow	Y

### ② Lens Color Code

Color	Code
Amber	A
Green	G
Red	R
Blue	S
Yellow	Y
White	W



- In place of ① specify Button Color Code from table on right.
- In place of ② specify Lens Color Code from table on right.
- \*requires HA1L-M0 or HA1L-A0 operator instead of HA1B-M0 or HA1B-A0.
- \*\*requires HA2L-M0 or HA2L-A0 instead of HA2B-M0 or HA2B-A0.

## HA1B/HA1E E-Stop

### Miniature Switches and Pilot Devices: 5/8" (16mm)

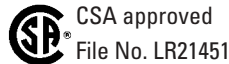
Key features of HA1B/HA1E Push lock Turn Reset include:

- PCB or Solder Terminals
- Quick Release Contact Blocks
- Positive Action Contacts
- 1 or 2 form B (SPST-NC) Contacts
- IP65 Protection
- 16mm Mounting Hole
- Tamper Proof Construction



Switches & Pilot Devices

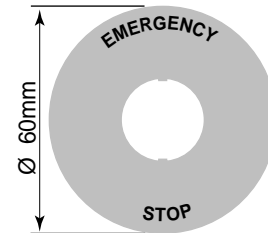
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<b>Specifications</b>	<b>Contact Ratings</b>	24VDC/2A 120VAC/3A	
	<b>Contact Form</b>	1 or 2 form B (2-SPST-NC)	
	<b>Termination</b>	PCB or Solder Terminal	
	<b>Contact Material</b>	Silver	
	<b>Applicable Standards</b>	EN 60947-5-1, UL-508, CSA 22.2. No. 14	
	<b>Rated Insulation Voltage</b>	250V	
	<b>Degree of Protection</b>	IP65, when mounted in an enclosure	
	<b>Conditional Short-Circuit Current &amp; Short-Circuit Protective Device</b>	50 A (at 250V) 10A 250V Fuse, operation class aM according to IEC269-1 and IEC269-2	
	<b>Positive Opening Operation</b>	Positive opening travel	3.4mm
		Minimum force required to achieve positive opening operation of all break contacts.	10.3 N (2 form B contacts)
Maximum travel including travel beyond the minimum travel position		5.5mm	
Maximum frequency of actuation		1,200 operations/hour	
<b>Pollution Degree</b>	3		

#### Part Numbers: Nameplates

**HAAV–Yellow Plastic**



	Part Number
Blank	HAAV-0Y
Engraved Emergency Stop	HAAV-27

#### Part Numbers: Positive Action E-Stop

	Appearance	Operation	Contact		Terminal Style	
					Solder Tab	PCB
E-Stop		Pushlock/ Turn Reset	DPST(NC) (2 form B)		HA1B-V2E2R	HA1B-V2E2VR
			Short Body	SPST-NC (1 form B) DPST-NC (2 form B)	HA1E-V2S1R HA1E-V2S2R	-
Conditional short circuit and protective device			10A 250V fuse operating class acc. to IEC 269-1 and IEC 269-2			
Positive opening operation			min travel: 3.4 mm min force: 10.3N max travel: 5.5mm max. frequency: 1200 ops/hr.			
Pollution Degree			3			

Button is non-removable, available in red and as complete assembled unit only.

#### Part Number: Buzzers

	Appearance	Operating Voltage	Terminal Style	
			Solder/Tab	PCB
Buzzer-Rectangular		6V AC/DC ± 10%	LA3Z-1X2	LA3Z-1X2V
		12V to 24 AC/DC ± 10%	LA3Z-1X4	LA3Z-1X4V

Frequency: 2kHz ± 500 hz  
Amplitude: 80db at 0.1m  
Beeping: Adjustable from steady tone to 600 beeps per minute.

## Pilot Lights (Assembled)

### Part Numbers: Pilot Lights (LED)

Style	Voltage	Terminal Style	
		Solder Tab	PCB
Round 	24V AC/DC LED 24VAC/DC Incandescent	LA1P-1C04-② LA1P-1C07-②	LA1P-1C04V-② LA1P-1C07V-②
Square 	24V AC/DC LED 24V AC/DC Incandescent	LA2P-1C04-② LA2P-1C07-②	LA2P-1C04V-② LA2P-1C07V-②
Rectangle 	24V AC/DC LED 24V AC/DC Incandescent	LA3P-1C04-② LA3P-1C07-②	LA3P-1C04V-② LA3P-1C07V-②
Oversize Round 	24V AC/DC LED 24V AC/DC Incandescent	HA1P-1C04-② HA1P-1C07-②	HA1P-1C04V-② HA1P-1C07V-②
Oversize Square 	24V AC/DC LED 24V AC/DC Incandescent	HA2P-1C04-② HA2P-1C07-②	HA2P-1C04V-② HA2P-1C07V-②
Oversize Round Monolithic 	24V AC/DC LED 24V AC/DC Incandescent	HA1P-14-② HA1P-17-②	—
Oversize Square Monolithic 	24V AC/DC LED 24V AC/DC Incandescent	HA2P-14-② HA2P-17-②	—

### ② Lens/LED Color Codes

Color	Code
Amber	A
Green	G
Red	R
Blue	S
Yellow	Y
White	W

### Voltage/Lamp Code

Voltage	Code
5V DC LED	1
6V AC/DC LED	2
12V AC/DC LED	3
24V AC/DC LED	4
120 V AC LED	8
6V AC/DC Incandescent	5
12V AC/DC Incandescent	6
24V AC/DC Incandescent	7



- In place of ② specify Lens/LED Color Code from table.
- Lamps also available in 5VDC, 6V AC/DC, 12V AC/DC or 120V AC, change “4” or “7” using Voltage/Lamp Codes (ie LA1P-1C03-② uses 12V AC/DC LED).

## Pilot Lights (Sub-Assembled)

Terminals + Safety Lever Lock + Lamp Holder + Lamp + Operator + Lens = Completed Unit

Switches & Pilot Devices

A




### Part Numbers: Operators



Style	Part Number
Round 	LA1P-0
Square 	LA2P-0
Rectangular 	LA3P-0
Oversize Round 	HA1P-0
Oversize Square 	HA2P-0
Oversize Round Monolithic 	HA1P-00
Oversize Square Monolithic 	HA2P-00


### Part Numbers: Lenses

Style	Part Number
Round 	AL6M-LK3-②
Square 	AL6Q-LK3-②
Rectangular 	AL6H-LK3-②
Oversize Round 	HA1A-P1-②
Oversize Square 	HA2A-P1-②

 In place of ② specify lens color code.


### Part Numbers: Lamps

Style	Voltage	Part Number
LED 	5V DC 6V AC/DC 12V AC/DC 24V AC/DC 120 V AC	LFTD-5② LFTD-6② LFTD-1② LFTD-2② LFTD-H2②
Incandescent 	6V AC/DC 12V AC/DC 24V AC/DC	LH-06 LH-14 LH-28


 In place of ② specify LED color code from table below.

### Part Numbers: Terminals


Appearance	Solder Tab	PCB
	HA-C00	HA-C00V

 Not required for monolithic models

### Part Number: Lamp Holder

Appearance	Part Number
	HA9Z-AH

### Part Number: Safety Lever Lock



Appearance	Part Number
	HA9Z-LS

### ② Lens/LED Color Codes

Color	Code
Amber	A
Green	G
Red	R
Blue	S
Yellow	Y

## Illuminated Pushbuttons (Assembled)

### Part Numbers: Illuminated Pushbuttons

Style	Operation	Lamp Voltage	Contact	Terminal Style	
				Solder Tab	PCB
Round 	Momentary	24V AC/DC LED	SPDT	LA1L-M1C54-②	LA1L-M1C14V-②
		24V AC/DC Incandescent	DPDT	LA1L-M1C64-②	LA1L-M1C24V-②
	Maintained	24V AC/DC LED	SPDT	LA1L-A1C54-②	LA1L-A1C14V-②
		24V AC/DC Incandescent	DPDT	LA1L-A1C64-②	LA1L-A1C24V-②
Square 	Momentary	24V AC/DC LED	SPDT	LA2L-M1C54-②	LA2L-M1C14V-②
		24V AC/DC Incandescent	DPDT	LA2L-M1C64-②	LA2L-M1C24V-②
	Maintained	24V AC/DC LED	SPDT	LA2L-A1C54-②	LA2L-A1C14V-②
		24V AC/DC Incandescent	DPDT	LA2L-A1C64-②	LA2L-A1C24V-②
Rectangular 	Momentary	24V AC/DC LED	SPDT	LA3L-M1C54-②	LA3L-M1C14V-②
		24V AC/DC Incandescent	DPDT	LA3L-M1C64-②	LA3L-M1C24V-②
	Maintained	24V AC/DC LED	SPDT	LA3L-A1C54-②	LA3L-A1C14V-②
		24V AC/DC Incandescent	DPDT	LA3L-A1C64-②	LA3L-A1C24V-②
Oversize Round 	Momentary	24V AC/DC LED	SPDT	HA1L-M1C54-②	HA1L-M1C14V-②
		24V AC/DC Incandescent	DPDT	HA1L-M1C64-②	HA1L-M1C24V-②
	Maintained	24V AC/DC LED	SPDT	HA1L-A1C54-②	HA1L-A1C14V-②
		24V AC/DC Incandescent	DPDT	HA1L-A1C64-②	HA1L-A1C24V-②
Oversize Square 	Momentary	24V AC/DC LED	SPDT	HA2L-M1C54-②	HA2L-M1C14V-②
		24V AC/DC Incandescent	DPDT	HA2L-M1C64-②	HA2L-M1C24V-②
	Maintained	24V AC/DC LED	SPDT	HA2L-A1C54-②	HA2L-A1C14V-②
		24V AC/DC Incandescent	DPDT	HA2L-A1C64-②	HA2L-A1C24V-②
Mushroom 	Momentary	24V AC/DC LED	SPDT	HA1L-M3C54-②	HA1L-M3C14V-②
		24V AC/DC Incandescent	DPDT	HA1L-M3C64-②	HA1L-M3C24V-②
	Maintained	24V AC/DC LED	SPDT	HA1L-A3C54-②	HA1L-A3C14V-②
		24V AC/DC Incandescent	DPDT	HA1L-A3C64-②	HA1L-A3C24V-②

### ② Lens Color Codes

Color	Code
Amber	A
Green	G
Red	R
Blue	S
Yellow	Y
White	W

### Voltage/Lamp Code

Voltage	Code
5V DC LED	1
6V AC/DC LED	2
12V AC/DC LED	3
24V AC/DC LED	4
120V AC LED	8
6V AC/DC Incandescent	5
12V AC/DC Incandescent	6
24V AC/DC Incandescent	7



- In place of ② specify lens color code from table at right.
- Lamps also available in 5V DC, 6V AC/DC, 12V AC/DC or 120V AC, change “4” or “7” using voltage/lamp codes (ie LA1P-1C03-② uses 12V AC/DC LED).
- PCB terminal models also available with silver contacts (change “1” or “2” to “5” or “6” respectively, ie LA1L-M1C14V-① becomes LA1L-M1C54V-①).

## Illuminated Pushbuttons (Sub-Assembled)

Contacts + Safety Lever Lock + Lamp Holder + Lamp + Operator + Lens = Completed Unit

Switches & Pilot Devices

A



### Part Numbers: Operators



Style	Momentary	Maintained
Round 	LA1L-M0	LA1L-A0
Square 	LA2L-M0	LA2L-A0
Rectangular 	LA3L-M0	LA3L-A0
Oversize Round 	HA1L-M0	HA1L-A0
Oversize Square 	HA2L-M0	HA2L-A0
Mushroom 	HA1B-M0L	HA1B-A0L

### Part Numbers: Lenses

Style	Part Number
Round 	AL6M-LK2-②
Square 	AL6Q-LK2-②
Rectangular 	AL6H-LK2-②
Oversize Round 	HA1A-L1-②
Oversize Square 	HA2A-L1-②
Mushroom 	HA1A-L3-②

 In place of ② specify Lens Color Code from table.


### Part Numbers: Lamps

Appearance	Voltage	Part Number
LED 	5V DC 6V AC/DC 12V AC/DC 24V AC/DC 120V AC	LFTD-5② LFTD-6② LFTD-1② LFTD-2② LFTD-H2②
Incandescent 	6V AC/DC 12V AC/DC 24V AC/DC	LH-06 LH-14 LH-28




In place of ② specify LED color code from table below.


### Part Numbers: Contacts

Appearance	Contacts	Terminal Style	
		Solder Tab	PCB
	Gold	SPDT DPDT	HA-C10 HA-C20 HA-C10V HA-C20V
	Silver	SPDT DPDT	HA-C50 HA-C60 HA-C50V HA-C60V

### Part Number: Lamp Holder

Appearance	Part Number
	HA9Z-AH

### Part Number: Safety Lever Lock

Appearance	Part Number
	HA9Z-LS






### ② Lens/LED Color Codes

Color	Code
Amber	A
Green	G
Red	R
Blue	S
Yellow	Y
White	W

**Selector Switches (Assembled)**
**Part Numbers: Selector Switches**

Style	Position	Position Diagram	Contact	Terminal Style	
				Solder Tab	PCB
Round 	90° 2-Position	Maintained		DPDT	LA1S-2C6 / LA1S-2C2V
		Spring return from right		DPDT	LA1S-21C6 / LA1S-21C2V
	45° 3-Position	Maintained		DPDT	LA1S-3C6 / LA1S-3C2V
		Spring return from right		DPDT	LA1S-31C6 / LA1S-31C2V
		Spring return from left		DPDT	LA1S-32C6 / LA1S-32C2V
		2-Way spring return		DPDT	LA1S-33C6 / LA1S-33C2V
Square 	90° 2-Position	Maintained		DPDT	LA2S-2C6 / LA2S-2C2V
		Spring return from right		DPDT	LA2S-21C6 / LA2S-21C2V
	45° 3-Position	Maintained		DPDT	LA2S-3C6 / LA2S-3C2V
		Spring return from right		DPDT	LA2S-31C6 / LA2S-31C2V
		Spring return from left		DPDT	LA2S-32C6 / LA2S-32C2V
		2-Way spring Return		DPDT	LA2S-33C6 / LA2S-33C2V
Rectangular 	90° 2-Position	Maintained		DPDT	LA3S-2C6 / LA3S-2C2V
		Spring return from right		DPDT	LA3S-21C6 / LA3S-21C2V
	45° 3-Position	Maintained		DPDT	LA3S-3C6 / LA3S-3C2V
		Spring return from right		DPDT	LA3S-31C6 / LA3S-31C2V
		Spring return from left		DPDT	LA3S-32C6 / LA3S-32C2V
		2-Way spring Return		DPDT	LA3S-33C6 / LA3S-33C2V
Oversize Round 	90° 2-Position	Maintained		DPDT	HA1S-2C6 / HA1S-2C2V
		Spring return from right		DPDT	HA1S-21C6 / HA1S-21C2V
	45° 3-Position	Maintained		DPDT	HA1S-3C6 / HA1S-3C2V
		Spring return from right		DPDT	HA1S-31C6 / HA1S-31C2V
		Spring return from left		DPDT	HA1S-32C6 / HA1S-32C2V
		2-Way spring Return		DPDT	HA1S-33C6 / HA1S-33C2V

**Contact Operations**  
(for all selectors)

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


*As viewed from front of switch.*


- All assembled selector switches use DPDT contacts.
- For SPDT contacts see sub-components on next page.
- PCB terminal models also available with silver contacts (change "1" or "2" to "5" or "6" respectively, ie LA1S-21C2V becomes LA1S-21C6V).