

## TABLE OF CONTENTS



### Non-Illuminated Operators

A range of non-illuminated operator types including Flush, Projecting, Mushroom, Twin Touch and Rotary Selector Switches. The use of multiple contact blocks provides the flexibility to satisfy almost any switching requirement.

*Push Button Operators* .....4-5  
*Selector Switch Operators* .....6-7



### Illuminated Operators

Illuminated operators and rotary operators with a wide selection of head types. Transformer blocks are offered to generate lower voltages for use with 6 and 12 volt bulbs. Bulbs are available from 6-130 volts.

*Push Button Operators* .....8-9



### Pilot Lights

A choice of both LED and incandescent pilot light types with a wide range of lens options.

*Pilot Lights* .....10-11



### Accessories

A wide range of accessories including lens options, shrouds, lamp extractors, installation tools and legend plates.

*Accessories* .....12-13



### Push Button Stations

Compact ABS plastic enclosures in single, two and three station push button configurations. A wide range of operators, selector switches and legend plates are offered.

*Push Button Stations* .....14-16



### Push Button Station Enclosures

Single, two and three hole ABS housings for push button station assembly.

*Push Button Station Enclosures* .....16-17

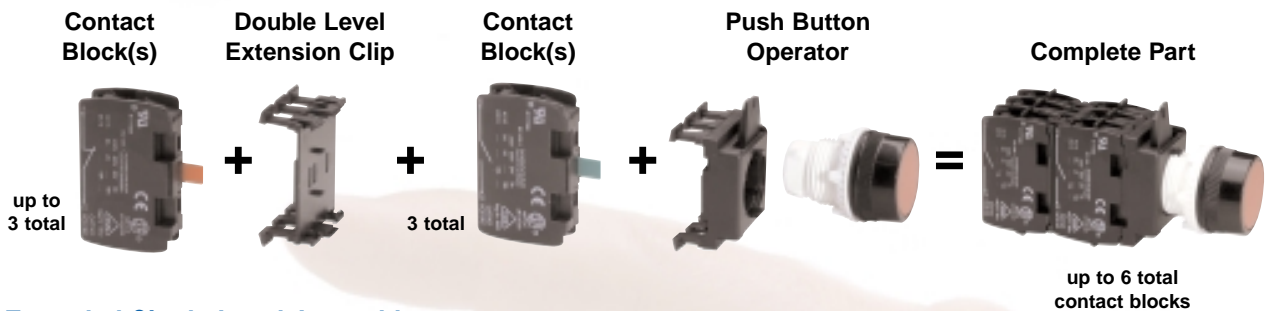
*Technical Specifications* .....18-19  
*Terms and Conditions* .....20  
*FAXBACK* .....21

# NON-ILLUMINATED PUSH BUTTONS - SUB-ASSEMBLIES

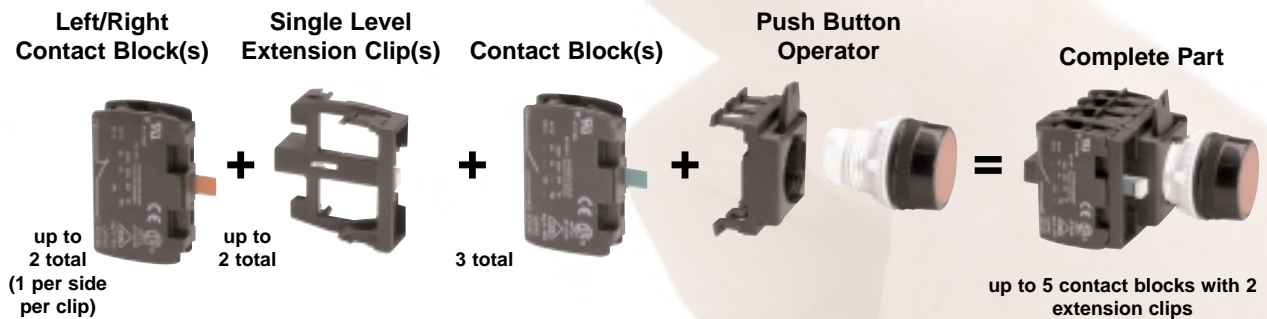
## Single Level Assembly



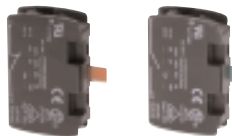
## Double Level Assembly



## Extended Single Level Assembly



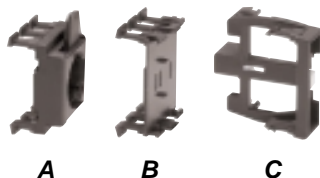
### Modular Contact Blocks



Function	Part #	Description
NO	HC61A2	Green tip, black body
NC	HC61B2	Red tip, black body



### Clips for Modular Blocks



Description	Part #
A Mounting Latch (First Row Clip)	HC922002
B Double Level	HC122030
C Single Level Extension	HC929002

## PUSH BUTTON OPERATORS (NON-ILLUMINATED)



		<b>Flush Head Momentary* IP65</b>	<b>Color</b>	Red	Green	Black	Yellow	White	Blue	Orange	
			<b>Cat. No.</b>	HD15C1	HD15C2	HD15C3	HD15C4	HD15C5	HD15C6	HD15C7	
		<b>Clear Boot Momentary* IP67</b>	<b>Color</b>	Red	Green	Black	Yellow	White	Blue	Orange	
			<b>Cat. No.</b>	HD25C1	HD25C2	HD25C3	HD25C4	HD25C5	HD25C6	HD25C7	
		<b>Rubber Boot Momentary* IP67</b>	<b>Color</b>	Red	Green	Black	Yellow	White	Blue	Orange	
			<b>Cat. No.</b>	HD35C1	HD35C2	HD35C3	HD35C4	HD35C5	HD35C6	HD35C7	
		<b>Extended Head Momentary* IP65</b>	<b>Color</b>	Red	Green	Black	Yellow	White	Blue	Orange	
			<b>Cat. No.</b>	HD45C1	HD45C2	HD45C3	HD45C4	HD45C5	HD45C6	HD45C7	
		<b>Extended Head Maintained*</b>	<b>Color</b>	Red	Green	Black	Yellow	White	Blue	Orange	
			<b>Cat. No.</b>	HF45C1	HF45C2	HF45C3	HF45C4	HF45C5	HF45C6	HF45C7	
		<b>Mushroom Head 040mm. Maintained* IP65</b>	<b>Color</b>	Red	Green	Black	Yellow				
			<b>Cat. No.</b>	HD55C1	HD55C2	HD55C3	HD55C4				
		<b>Mushroom Head 040mm. 'Push-Turn' * IP65</b>	<b>Color</b>	Red	Green	Black	Yellow				
			<b>Cat. No.</b>	HH55C1	HH55C2	HH55C3	HH55C4				
		<b>Mushroom Head 040mm. 'Push-Pull' IP65</b>	<b>Color</b>	Red	Green	Black	Yellow				
			<b>Cat. No.</b>	HG55B1	HG55B2	HG55B3	HG55B4				
			Supplied only with brass collar								
		<b>Mushroom Head 040mm. Momentary</b>	<b>Color</b>	Red	Green	Black	Yellow				
			<b>Cat. No.</b>	HU55B1	HU55B2	HU55B3	HU55B4				
			Supplied only with brass collar								
		<b>Mushroom Head Lock &amp; Key*</b>	<b>Color</b>	Red	Green	Black	Yellow				
			<b>Cat. No.</b>	HQ55C1	HQ55C2	HQ55C3	HQ55C4				
		<b>Twin - Touch Flush IP65</b>	<b>Color</b>	ON: Green/ OFF: Red							
			<b>Cat. No.</b>	HD15G0							
		<b>Twin - Touch Flush</b>	<b>Color</b>	ON: Green/ OFF: Red							
			<b>Cat. No.</b>	HD15G3							
			Black center strip								

### EXPLODED VIEW

Flush Head Push button Operator

Lens Cap

Collar\*

Lens

Ring

Sealing Grommet

Spring

Operating Head

Sealing Ring

Ring Nut

Mounting Latch (First Row Clip)

All dimensions are in mm. To convert to inches please divide by 25.4.

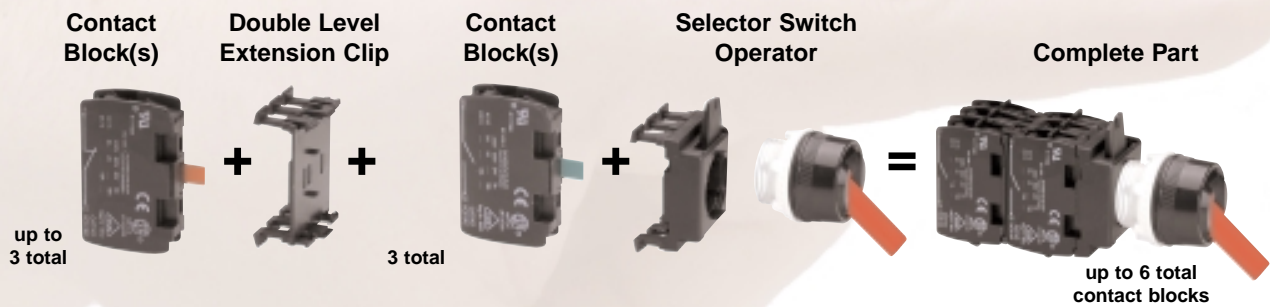
\* Standard collar color is black. Collars are also available in chrome plated ABS or brass. Please see page 13.

# SELECTOR SWITCHES (NON-ILLUMINATED) - SUB-ASSEMBLIES

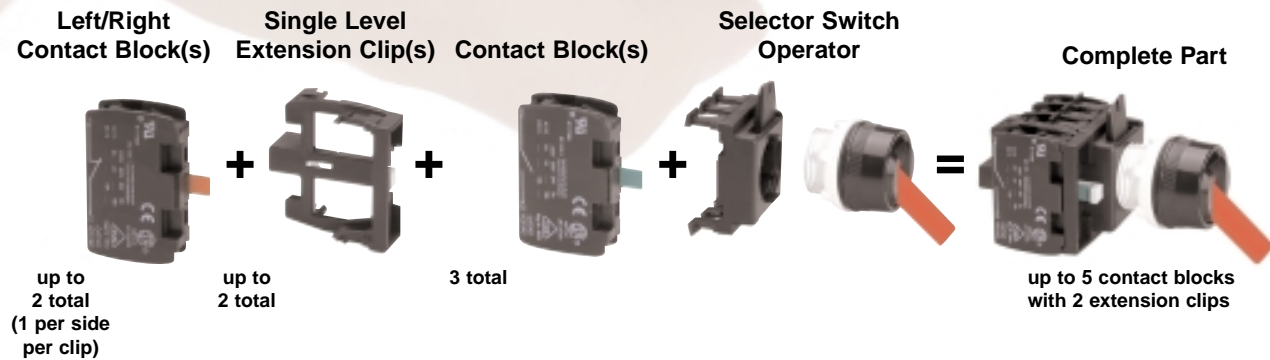
## Single Level Assembly



## Double Level Assembly

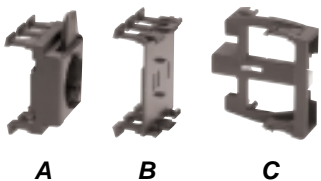


## Extended Single Level Assembly



### Modular Contact Blocks

Function	Part #	Description
NO	HC61A2	Green tip, black body
NC	HC61B2	Red tip, black body

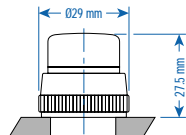


### Clips for Modular Blocks

Description	Part #
A Mounting Latch (First Row Clip)	HC922002
B Double Level	HC122030
C Single Level Extension	HC929002

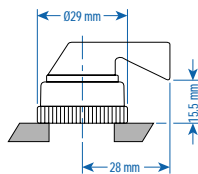


2 Position				3 Position			
Maintained		Spring Return Right		Maintained	Spring Return	Spring Return Left	Spring Return Right



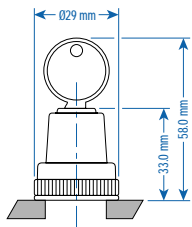
Symmetric Head

Color	Cat. No.				Cat. No			
Red	HK65C1	HR65C1	HT65C1	HI65C1	HL65C1	HJ65C1	HM65C1	HN65C1
Black	HK65C3	HR65C3	HT65C3	HI65C3	HL65C3	HJ65C3	HM65C3	HN65C3
White	HK65C5	HR65C5	HT65C5	HI65C5	HL65C5	HJ65C5	HM65C5	HN65C5



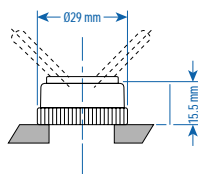
Lever Head

Color	Cat. No.				Cat. No			
Red	HK75C1	HR75C1	HT75C1	HI75C1	HL75C1	HJ75C1	HM75C1	HN75C1
Black	HK75C3	HR75C3	HT75C3	HI75C3	HL75C3	HJ75C3	HM75C3	HN75C3
White	HK75C5	HR75C5	HT75C5	HI75C5	HL75C5	HJ75C5	HM75C5	HN75C5



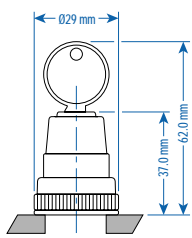
Lock & Key Head Rotary Type

Cat. No.				Cat. No			
HK85C3	HR85C3	HT85C3	HI85C3	HL85C3	HJ85C3	HM85C3	HN85C3



Tip Head

Color	Cat. No.*			
Red	HP95C1			N/A
Green	HP95C2			N/A
Black	HP95C3			N/A
White	HP95C5			N/A



Lock & Key Head Push Turn Type

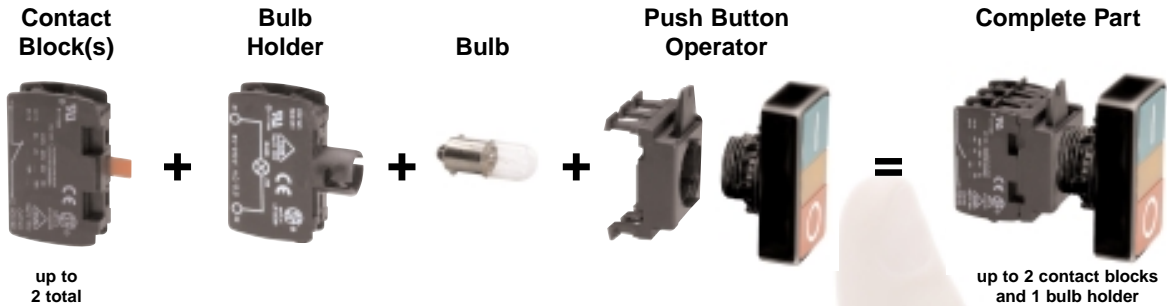
Cat. No.*			
HH85C3			

\* Available only in 2 Position Maintained

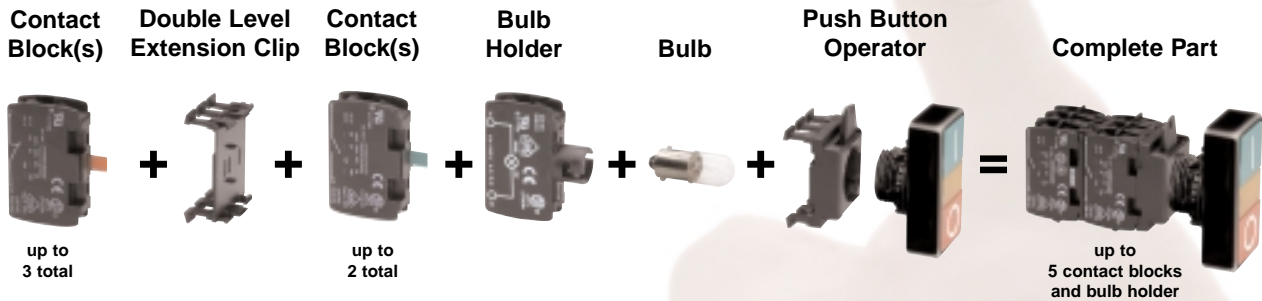
All dimensions are in mm. To convert to inches please divide by 25.4.

# PUSH BUTTONS (ILLUMINATED) - SUB-ASSEMBLIES

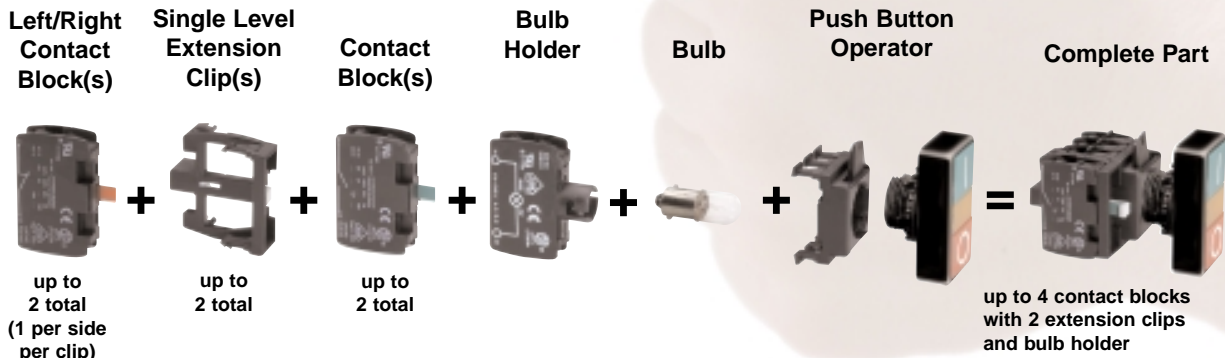
## Single Level Assembly



## Double Level Assembly



## Extended Single Level Assembly



### Modular Contact Blocks

Function	Part #	Description
NO	HC61A2	Green tip
NC	HC61B2	Red tip
Dummy (for support)	HC71C2	Black

### Modular Transformer Blocks

- May be mounted in 2 ways:  
 1. On second row, or  
 2. On first row along side bulb holder

*Note: When mounting on first row, side row clip is not necessary. See page 18 for drawing and page 10 for assembly.*


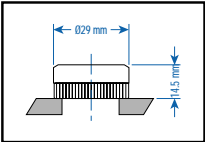

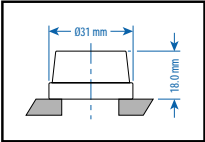

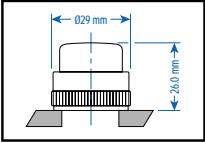

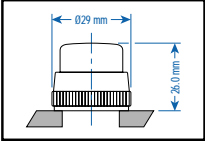

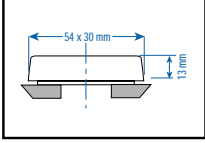
### Clips for Modular Blocks

Description	Part #
A Mounting Latch (First Row Clip)	HC922002
B Double Level	HC122030
C Single Level Extension	HC929002


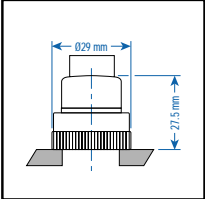






Cat. No.	Primary	Secondary	VA
HC51W1	110V	6V	1.0
HC51X1	240V	6V	1.0
HC52W1	110V	12V	1.0
HC52X1	240V	12V	1.0

## PUSH BUTTON OPERATORS (ILLUMINATED)



		<b>Flush Head</b>	<b>Color</b>	Red	Green	Yellow	Opal	Blue	Orange	Clear
			<b>Cat. No.</b>	HD16C1	HD16C2	HD16C4	HD16C5	HD16C6	HD16C7	HD16C8
		<b>Extended Head with Clear Boot</b>	<b>Color</b>	Red	Green	Yellow	Opal	Blue	Orange	Clear
			<b>Cat. No.</b>	HD26C1	HD26C2	HD26C4	HD26C5	HD26C6	HD26C7	HD26C8
		<b>Extended Head Momentary</b>	<b>Color</b>	Red	Green	Yellow	Opal	Blue	Orange	Clear
			<b>Cat. No.</b>	HD46C1	HD46C2	HD46C4	HD46C5	HD46C6	HD46C7	HD46C8
		<b>Extended Head Maintained</b>	<b>Color</b>	Red	Green	Yellow	Opal	Blue	Orange	Clear
			<b>Cat. No.</b>	HF46C1	HF46C2	HF46C4	HF46C5	HF46C6	HF46C7	HF46C8
		<b>Twin - Touch Flush</b>	<b>Color</b>	ON: Green/ OFF: Red						
			<b>Cat. No.</b>	HD16G8	Clear Pilot Light between Red & Green					
			<b>Cat. No.</b>	HD16G7	Orange Pilot Light between Red & Green					
			<b>Cat. No.</b>	HD16G4	Yellow Pilot Light between Red & Green					

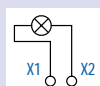
## SELECTOR SWITCH OPERATORS (ILLUMINATED)

		<b>Symmetric Head</b>	<b>2 Position</b>		<b>3 Position</b>			
			Maintained	Spring Return Right	Maintained	Spring Return	Spring Return Left	Spring Return Right
								
			<b>Color</b>	<b>Cat. No.</b>	<b>Cat. No.</b>			
			Red	HK66C1 HR66C1 HT66C1 HI66C1	HL66C1	HJ66C1	HM66C1	HN66C1
			Green	HK66C2 HR66C2 HT66C2 HI66C2	HL66C2	HJ66C2	HM66C2	HN66C2
			Opal	HK66C5 HR66C5 HT66C5 HI66C5	HL66C5	HJ66C5	HM66C5	HN66C5
			Clear	HK66C8 HR66C8 HT66C8 HI66C8	HL66C8	HJ66C8	HM66C8	HN66C8

All dimensions are in mm. To convert to inches please divide by 25.4.

## Modular Bulb Holder Blocks

### Bulb Holder without bulb

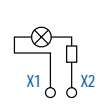


For 6V/12V/24V/48V/110V/240V AC/DC supply and are suitable for 2.6W Max. Bulb.

### Cat.No.

HC61R1

### Bulb Holder with built in series resistor without bulb



For 6V, 2W Bulb for 6V AC/DC supply  
 For 12V, 2W Bulb for 12V AC/DC supply  
 For 24V, 2W Bulb for 24V AC/DC supply  
 For 48V, 2W Bulb for 48V AC/DC supply  
 For 130V, 20mA Bulb for 110V AC/DC supply

HC61S1

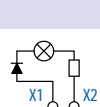
HC61T1

HC61U1

HC61V1

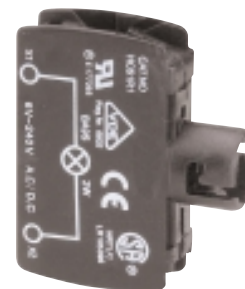
HC61W1

### Bulb Holder with built in series resistor, diode without bulb



For 130V, 20mA Bulb for 240V AC supply

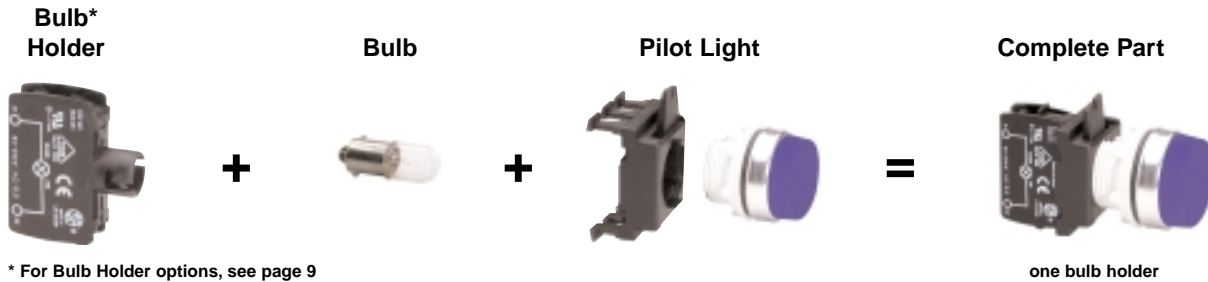
HC61X1



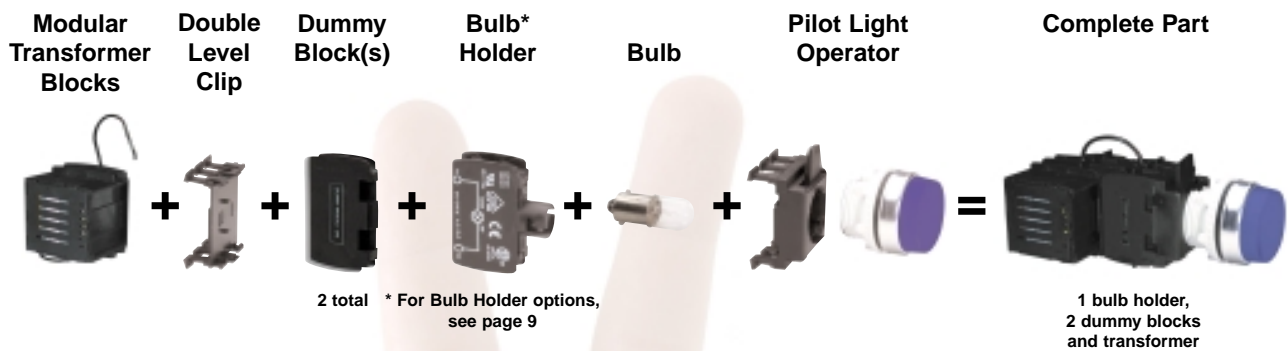
# PILOT LIGHTS - SUB-ASSEMBLIES



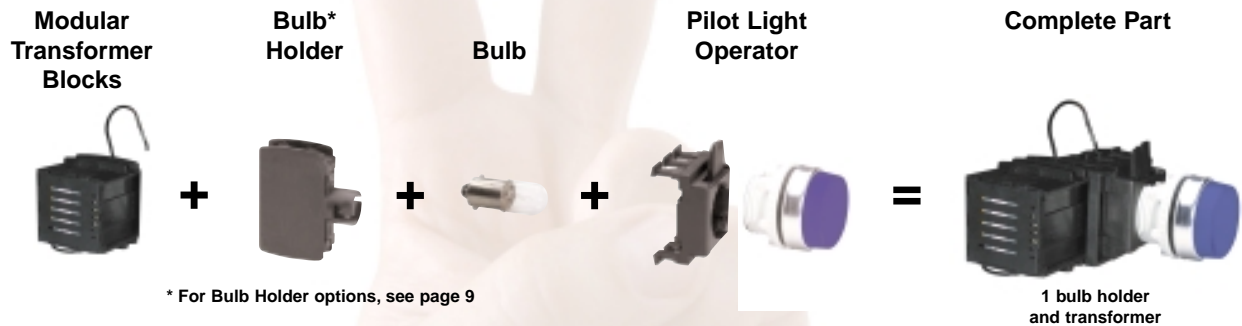
## Single Level Assembly



## Assembly with Transformer (second row)



## Assembly with Transformer (alongside)



## Modular Bulb Holder Blocks



### Modular Dummy Blocks

Function	Part #	Description
Dummy (for support)	HC71C2	Black

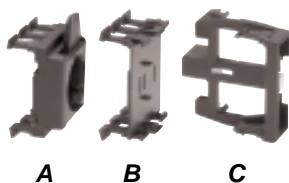
### Modular Transformer Blocks

May be mounted in 2 ways:  
 1. On second row, or  
 2. On first row along side bulb holder



Note: When mounting on first row, side row clip is not necessary. See page 18 for drawing.

### Clips for Modular Blocks



Description	Part #
A Mounting Latch (First Row Clip)	HC922002
B Double Level	HC122030
C Single Level Extension	HC929002









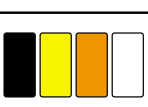


Cat. No.	Primary	Secondary	VA
HC51W1	110V	6V	1.0
HC51X1	240V	6V	1.0
HC52W1	110V	12V	1.0
HC52X1	240V	12V	1.0

## PILOT LIGHTS

	Image	Diagram	Description	Color																													
				Red	Green	Yellow	Opal	Blue	Orange	Clear																							
PILOT LIGHTS			Plain Lens Without Trim Collar IP65	Color	Red	Green	Yellow	Opal	Blue	Orange	Clear	Cat. No.	HB08F1	HB08F2	HB08F4	HB08F5	HB08F6	HB08F7	HB08F8														
			Ribbed Lens Without Trim Collar IP65	Color	Red	Green	Yellow	Opal	Blue	Orange	Clear	Cat. No.	HB07F1	HB07F2	HB07F4	HB07F5	HB07F6	HB07F7	HB07F8														
			Plain Lens With Trim Collar IP65	Color	Red	Green	Yellow	Opal	Blue	Orange	Clear	Cat. No.	HB08E1	HB08E2	HB08E4	HB08E5	HB08E6	HB08E7	HB08E8	Anodised Aluminum trim collar													
			Ribbed Lens With Trim Collar IP65	Color	Red	Green	Yellow	Opal	Blue	Orange	Clear	Cat. No.	HB07E1	HB07E2	HB07E4	HB07E5	HB07E6	HB07E7	HB07E8	Anodised Aluminum trim collar													
INCANDESCENT PILOT LIGHTS			Ribbed Lens Without Trim Collar white body IP65	Color	Red	Green	Yellow	Opal	Blue	Orange	Clear	Cat. No.	HV03F1	HV03F2	HV03F4	HV03F5	HV03F6	HV03F7	HV03F8	To be used with 2.6 watts max. bulb.													
			Plain Lens Without Trim Collar white body IP65	Color	Red	Green	Yellow	Opal	Blue	Orange	Clear	Cat. No.	HV04F1	HV04F2	HV04F4	HV04F5	HV04F6	HV04F7	HV04F8	To be used with 2.6 watts max. bulb.													
			Plain Lens With Trim Collar IP65	Color	Red	Green	Yellow	Opal	Blue	Orange	Clear	Cat. No.	HV04E1	HV04E2	HV04E4	HV04E5	HV04E6	HV04E7	HV04E8	Anodised Aluminum collar trim. To be used with 2.6 watts max. bulb.													
			Ribbed Lens With Trim Collar IP65	Color	Red	Green	Yellow	Opal	Blue	Orange	Clear	Cat. No.	HV03E1	HV03E2	HV03E4	HV03E5	HV03E6	HV03E7	HV03E8	Anodised Aluminum trim collar. To be used with 2.6 watts max. bulb.													
			Ribbed Lens Without Trim Collar black body IP65	Color	Red	Green	Yellow	Opal	Blue	Orange	Clear	Cat. No.	HV03F1X	HV03F2X	HV03F4X	HV03F5X	HV03F6X	HV03F7X	HV03F8X	To be used with 2.6 watts max. bulb. Supplied with diode and series resistor to be used at 240VAC. Uses 130V, 20mA bulb only.													
			Ribbed Lens With Trim Collar black body IP65	Color	Red	Green	Yellow	Opal	Blue	Orange	Clear	Cat. No.	HV03E1X	HV03E2X	HV03E4X	HV03E5X	HV03E6X	HV03E7X	HV03E8X	Anodised Aluminum collar trim. To be used with 2.6 watts max. bulb. Supplied with diode and series resistor to be used at 240VAC. Uses 130V, 20mA bulb only.													
	LED			Ribbed Lens Without Trim Collar IP65	Color	12VAC/DC	24VAC/DC	48VAC/DC	110VAC	240VAC	Red	Green	Yellow	Opal	Blue	Orange	Clear	Cat. No.	HS03F1T1	HS03F1U1	HS03F1V1	HS03F1W1	HS03F1X1										
					Red	HS03F2T1	HS03F2U1	HS03F2V1	HS03F2W1	HS03F2X1	Green	HS03F4T1	HS03F4U1	HS03F4V1	HS03F4W1	HS03F4X1	Yellow	HS03F6T1	HS03F6U1	HS03F6V1	HS03F6W1	HS03F6X1	Blue	HS03F7T1	HS03F7U1	HS03F7V1	HS03F7W1	HS03F7X1	Orange	HS03F5T1	HS03F5U1	HS03F5V1	HS03F5W1

All dimensions are in mm. To convert to inches please divide by 25.4.



## ACCESSORIES


	<i>Non-illuminated Lens Cap for Flush Head Operators</i>	<b>Color</b>	Red	Green	Black	Yellow	Opal	Blue	Orange	White	Clear	
		<b>Cat. No.</b>	HB103002	HB104000	HB102006	HB105008	N.A.	HB107010	HB108012	HB101004	N.A.	
	<i>Illuminated Lens Cap for Flush Head Operators</i>	<b>Color</b>	Red	Green	Black	Yellow	Opal	Blue	Orange	White	Clear	
		<b>Cat. No.</b>	HB103103	HB104101	N.A.	HB105109	HB101105	HB107111	HB108113	N.A.	HB100107	
	<i>Plain Lens for Indicator with Trim Collar</i>	<b>Color</b>	Red	Green	Yellow	Opal	Blue	Orange	Clear			
		<b>Cat. No.</b>	HE903102	HE904103	HE905104	HE901105	HE907106	HE908107	HE900100	Anodized aluminum collar trim		
	<i>Ribbed Lens for Indicator with Trim Collar</i>	<b>Color</b>	Red	Green	Yellow	Opal	Blue	Orange	Clear			
		<b>Cat. No.</b>	HE903108	HE904109	HE905110	HE901111	HE907112	HE908113	HE900101	Anodized aluminum collar trim		
	<i>Plain Lens for Indicator without Trim Collar</i>	<b>Color</b>	Red	Green	Yellow	Opal	Blue	Orange	Clear			
		<b>Cat. No.</b>	HE103102	HE104103	HE105104	HE101105	HE107106	HE108107	HE100100			
	<i>Ribbed Lens for Indicator without Trim Collar</i>	<b>Color</b>	Red	Green	Yellow	Opal	Blue	Orange	Clear			
		<b>Cat. No.</b>	HE103108	HE104109	HE105110	HE101111	HE107112	HE108113	HE100101			
	<i>Rubber Boot</i>	<b>Color</b>	Red	Green	Black	Yellow						
		<b>Cat. No.</b>	HH152002	HH153003	HH154004	HH155005						
	<i>Clear Vinyl Boot</i>	<b>Cat. No.</b>	HH150100									
	<i>Center Lens Strip Twin Touch</i>	<b>Color</b>	Black	Yellow	Orange	Clear						
			for HD15G3	for HD16G4	for HD16G7	for HD16G8						
		<b>Cat. No.</b>	HB102058	HB105163	HB108169	HB100161						
	<i>Incandescent Bulbs</i> BA 9S- 11x28 max.	<b>Rating</b>	6V AC/DC	12V AC/DC	24V AC/DC	48V AC/DC	130V AC/DC					
			2W	2W	2W	2W	20mA*					
		<b>Cat. No.</b>	HC550001	HC550002	HC550003	HC550004	HC550005					
	<i>Bipolar LED Bulbs</i> BA 9S- 11x28 max.	<b>Rating</b>		6V AC/DC	12V AC/DC	24V AC/DC	48V AC/DC	120V AC/DC				
			Red	LB6R	LB12R	LB24R	LB48R	LB120R				
		<b>Cat. No.</b>	Amber	LB6A	LB12A	LB24A	LB48A	LB120A				
			Green	LB6G	LB12G	LB24G	LB48G	LB120G				
			Blue	LB6B	LB12B	LB24B	LB48B	LB120B				
			White	LB6W	LB12W	LB24W	LB48W	LB120W				


\*Suitable for 110V VAC/DC (or 240 VAC with series resistor and diode)

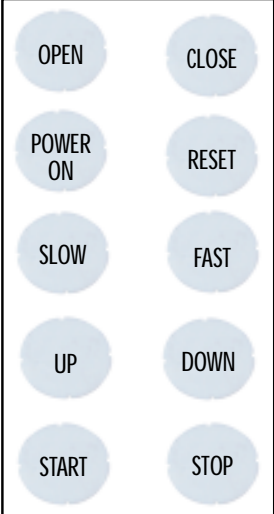
## ACCESSORIES




	<b>Ring Nut Wrench</b>	<b>Color</b> Black <b>Cat. No.</b> HH192000 <i>Used to tighten ring nut on operator or pilot lights.</i>		<b>Locking Nut (Chrome Plated Brass)</b>	<b>Color</b> Chrome <b>Cat. No.</b> HB326002
	<b>Lamp Extractor</b>	<b>Color</b> Black <b>Cat. No.</b> HH157000		<b>Extended Collar (Chrome Plated Brass)</b>	<b>Color</b> Chrome <b>Cat. No.</b> HB326001
	<b>Lens Plug</b> <i>Lens Plugs can be used with illuminated Flush Head, Projecting Head "Push" Function, and Projecting Head "Push-Push" Function when using the modular contact block.</i>	<b>Color</b> Gray <b>Cat. No.</b> HH199016		<b>Gray Collar</b>	<b>Color</b> Gray <b>Cat. No.</b> HB199000

	<b>Anti-Rotation Ring</b>	<b>Cat. No.</b> HH180004 <i>Used to prevent rotation of selector switches Operators. Supplied with symmetrical head, lever head and lock and key operators.</i>								
	<b>Collar</b>	<table border="0"> <tr> <td><b>Material</b></td> <td>Chrome Plated ABS</td> <td>Chrome Plated Brass</td> <td>Black ABS</td> </tr> <tr> <td><b>Cat. No.</b></td> <td>HB196000</td> <td>HB326000</td> <td>HB192000</td> </tr> </table> <p><i>Collars are used only with flush and projecting head push function operators.</i></p>	<b>Material</b>	Chrome Plated ABS	Chrome Plated Brass	Black ABS	<b>Cat. No.</b>	HB196000	HB326000	HB192000
<b>Material</b>	Chrome Plated ABS	Chrome Plated Brass	Black ABS							
<b>Cat. No.</b>	HB196000	HB326000	HB192000							

	<b>30 mm to 22 mm Hole Size Adaptor</b>	<table border="0"> <tr> <td><b>Color</b></td> <td>Gray</td> <td>Black</td> <td>Chrome Plated</td> </tr> <tr> <td><b>Front</b></td> <td>HH180000</td> <td>HH182004</td> <td>HH180006</td> </tr> <tr> <td><b>Rear</b></td> <td>HH180001</td> <td>HH182005</td> <td>HH180007</td> </tr> </table>	<b>Color</b>	Gray	Black	Chrome Plated	<b>Front</b>	HH180000	HH182004	HH180006	<b>Rear</b>	HH180001	HH182005	HH180007
<b>Color</b>	Gray	Black	Chrome Plated											
<b>Front</b>	HH180000	HH182004	HH180006											
<b>Rear</b>	HH180001	HH182005	HH180007											

	<b>22 mm Hole Plugs</b>	<table border="0"> <tr> <td><b>Color</b></td> <td>Gray</td> <td>Black</td> <td>Chrome Plated</td> </tr> <tr> <td><b>Convex</b></td> <td>HH180002</td> <td>HH182008</td> <td>HH196010</td> </tr> <tr> <td><b>Flat</b></td> <td>HH180003</td> <td>HH182009</td> <td>HH196011</td> </tr> </table>	<b>Color</b>	Gray	Black	Chrome Plated	<b>Convex</b>	HH180002	HH182008	HH196010	<b>Flat</b>	HH180003	HH182009	HH196011
<b>Color</b>	Gray	Black	Chrome Plated											
<b>Convex</b>	HH180002	HH182008	HH196010											
<b>Flat</b>	HH180003	HH182009	HH196011											

	<b>Under Lens Legends</b> <i>(Insert under Flush Head Illuminated Lens Cap and Plain Pilot Light Lens Cap)</i>	<table border="0"> <thead> <tr> <th>Marking</th> <th>Cat.No.</th> <th>Field Color</th> <th>Text</th> <th>Cat.No.</th> </tr> </thead> <tbody> <tr><td>⊙</td><td>HH280021</td><td>Red Field</td><td>ON</td><td>HH280001</td></tr> <tr><td>⓪</td><td>HH280022</td><td>Black Field</td><td>OFF</td><td>HH280002</td></tr> <tr><td>Ⓛ</td><td>HH280023</td><td>Black Field</td><td>OPEN</td><td>HH280003</td></tr> <tr><td>Ⓜ</td><td>HH280024</td><td>Black Field</td><td>CLOSE</td><td>HH280004</td></tr> <tr><td>Ⓝ</td><td>HH280025</td><td>Black Field</td><td>START</td><td>HH280005</td></tr> <tr><td>Ⓞ</td><td>HH280026</td><td>Black Field</td><td>STOP</td><td>HH280006</td></tr> <tr><td>Ⓟ</td><td>HH280027</td><td>Black Field</td><td>UP</td><td>HH280007</td></tr> <tr><td>Ⓠ</td><td>HH280028</td><td>Black Field</td><td>DOWN</td><td>HH280008</td></tr> <tr><td>Ⓡ</td><td>HH280029</td><td>Black Field</td><td>FAST</td><td>HH280009</td></tr> <tr><td>Ⓢ</td><td>HH280030</td><td>Black Field</td><td>SLOW</td><td>HH280010</td></tr> <tr><td>Ⓣ</td><td>HH280031</td><td>Black Field</td><td>INCH</td><td>HH280011</td></tr> <tr><td>Ⓤ</td><td>HH280032</td><td>Black Field</td><td>FORWARD</td><td>HH280012</td></tr> <tr><td></td><td></td><td></td><td>REVERSE</td><td>HH280013</td></tr> <tr><td></td><td></td><td></td><td>POWER ON</td><td>HH280014</td></tr> <tr><td></td><td></td><td></td><td>RAISE</td><td>HH280015</td></tr> <tr><td></td><td></td><td></td><td>RUN</td><td>HH280016</td></tr> <tr><td></td><td></td><td></td><td>RESET</td><td>HH280017</td></tr> </tbody> </table>	Marking	Cat.No.	Field Color	Text	Cat.No.	⊙	HH280021	Red Field	ON	HH280001	⓪	HH280022	Black Field	OFF	HH280002	Ⓛ	HH280023	Black Field	OPEN	HH280003	Ⓜ	HH280024	Black Field	CLOSE	HH280004	Ⓝ	HH280025	Black Field	START	HH280005	Ⓞ	HH280026	Black Field	STOP	HH280006	Ⓟ	HH280027	Black Field	UP	HH280007	Ⓠ	HH280028	Black Field	DOWN	HH280008	Ⓡ	HH280029	Black Field	FAST	HH280009	Ⓢ	HH280030	Black Field	SLOW	HH280010	Ⓣ	HH280031	Black Field	INCH	HH280011	Ⓤ	HH280032	Black Field	FORWARD	HH280012				REVERSE	HH280013				POWER ON	HH280014				RAISE	HH280015				RUN	HH280016				RESET	HH280017
	Marking	Cat.No.	Field Color	Text	Cat.No.																																																																																							
	⊙	HH280021	Red Field	ON	HH280001																																																																																							
	⓪	HH280022	Black Field	OFF	HH280002																																																																																							
	Ⓛ	HH280023	Black Field	OPEN	HH280003																																																																																							
	Ⓜ	HH280024	Black Field	CLOSE	HH280004																																																																																							
	Ⓝ	HH280025	Black Field	START	HH280005																																																																																							
	Ⓞ	HH280026	Black Field	STOP	HH280006																																																																																							
	Ⓟ	HH280027	Black Field	UP	HH280007																																																																																							
	Ⓠ	HH280028	Black Field	DOWN	HH280008																																																																																							
	Ⓡ	HH280029	Black Field	FAST	HH280009																																																																																							
	Ⓢ	HH280030	Black Field	SLOW	HH280010																																																																																							
	Ⓣ	HH280031	Black Field	INCH	HH280011																																																																																							
	Ⓤ	HH280032	Black Field	FORWARD	HH280012																																																																																							
			REVERSE	HH280013																																																																																								
			POWER ON	HH280014																																																																																								
			RAISE	HH280015																																																																																								
			RUN	HH280016																																																																																								
			RESET	HH280017																																																																																								

		
<b>SMALL</b> (45mm H x 30mm W)	<b>LARGE</b> (45mm H x 40mm W)	<b>SQUARE</b> (48mm H x 48mm W)

<b>Metal Legend Plates</b> <i>(Black with White Legend Text)</i>	<table border="0"> <thead> <tr> <th>Text</th> <th>Small</th> <th>Large</th> <th>Square</th> </tr> </thead> <tbody> <tr><td>Off-On</td><td>HH242001</td><td>HH242016</td><td>HH242031</td></tr> <tr><td>Forw-Off-Rev</td><td>HH242002</td><td>HH242017</td><td>HH242032</td></tr> <tr><td>Hand-Off-Auto</td><td>HH242003</td><td>HH242018</td><td>HH242033</td></tr> <tr><td>Stop-Start</td><td>HH242004</td><td>HH242019</td><td>HH242034</td></tr> <tr><td>Fast-Off-Slow</td><td>HH242005</td><td>HH242020</td><td>HH242035</td></tr> <tr><td>O-I</td><td>HH242006</td><td>HH242021</td><td>HH242036</td></tr> <tr><td>I-O-II</td><td>HH242007</td><td>HH242022</td><td>HH242037</td></tr> </tbody> </table>	Text	Small	Large	Square	Off-On	HH242001	HH242016	HH242031	Forw-Off-Rev	HH242002	HH242017	HH242032	Hand-Off-Auto	HH242003	HH242018	HH242033	Stop-Start	HH242004	HH242019	HH242034	Fast-Off-Slow	HH242005	HH242020	HH242035	O-I	HH242006	HH242021	HH242036	I-O-II	HH242007	HH242022	HH242037
Text	Small	Large	Square																														
Off-On	HH242001	HH242016	HH242031																														
Forw-Off-Rev	HH242002	HH242017	HH242032																														
Hand-Off-Auto	HH242003	HH242018	HH242033																														
Stop-Start	HH242004	HH242019	HH242034																														
Fast-Off-Slow	HH242005	HH242020	HH242035																														
O-I	HH242006	HH242021	HH242036																														
I-O-II	HH242007	HH242022	HH242037																														

## PUSH BUTTON STATIONS

Push button Stations are non-metallic, base mounting enclosures. All stations are equipped with either a NO or NC front connection contact block, functional lens colors and legends.

### Features

- Gray, ABS enclosure material is resistant to aging, impact, corrosion and is fire retardant, making the "Push button Stations" robust and totally maintenance free.
- Base mounted contact blocks and bulb holders feature front connections to facilitate terminations.
- Functional black Legend Plates are printed with white letters for easy reading.
- Lightweight ABS enclosures are compact and non-conductive to heat, unlike Metallic Enclosures.
- Push button Stations with Pilot Lights and / or Illuminated Operators are supplied *without bulbs*. Please order bulbs separately.
- Custom combinations are available upon request.
- IP65 protection level, as per Push Buttons and Pilot Lights.



Single Station, all gray, spring return operator, flush head.

Function	Legend	Scheme	Cat. No.
OFF (Red)			JAA10000
ON (Green)			JAB20000



Single Station, all gray, spring return operator illuminated flush head (resistor plus diode), supply 240 V, BA9S bulb, 130 V 20mA.

Function	Legend	Scheme	Cat. No.
OFF (Red)			JAC50000
ON (Green)			JAD60000



Single Station, yellow cover, gray base, spring return operator, Ø40mm mushroom head.

Function	Legend	Scheme	Cat. No.
Emergency Stop (Red)			JAE10000



Single Station, yellow cover, gray base, maintained contact operator, Ø40mm mushroom head, 'Push Turn', turn to release.

Function	Legend	Scheme	Cat. No.
Emergency Stop (Red)			JAF10000



Single Station, yellow cover, gray base, maintained contact operator, Ø40mm mushroom head, 'Lock & Key'.

Function	Legend	Scheme	Cat. No.
Emergency STOP (Red)			JAG10000



Single Station, all gray, selector switch, 2 position symmetric head or 'Lock & Key' head, rotary type.

Function	Legend	Scheme	Cat. No.
Selector OFF/ON (Black)			JAH20000
Lock & Key OFF/ON (Black)			JAI20000



Two Station, all gray, spring return flush and maintained contact operator, Ø40mm mushroom head, 'Push Turn', turn to release.

Function	Legend	Scheme	Cat. No.
Start (Green)			JBB2F100
Emergency Stop (Red)			



Two Station, all gray, 2 spring return operators, Flush Head.

Function	Legend	Scheme	Cat. No.
ON (Green)			JBB2A100
OFF (Red)			

## PUSH BUTTON STATIONS



Three Station, all gray, 1 pilot light (resistor plus diode), ribbed lens, supply 240 VAC, BA9S bulbs, 130V, 20 mA max. 2 spring return operators, Flush Head.

Function	Legend	Scheme	Cat. No.
Pilot Light, Clear			
ON (Green)			JCZ4B2A1
OFF (Red)			



Three Station, all gray, 3 spring return operators, Flush Head.

Function	Legend	Scheme	Cat. No.
FORWARD, (Green)			
STOP (Red)			JDB2A1B2
REVERSE (Green)			



Three Station, all gray, 3 spring return operators, Flush Head.

Function	Legend	Scheme	Cat. No.
UP, (Green)			
OFF (Red)			JEB2A1B2
DOWN (Green)			

## METAL LEGEND PLATES FOR PUSH BUTTON STATIONS (BLACK WITH WHITE LEGEND TEXT)



Text	Vertical	Horizontal	Cat. No.	Text	Vertical	Horizontal	Cat. No.	Text	Vertical	Horizontal	Cat. No.
LOWER	HH2420101	HH2420201		IN	HH2420123	HH2420223		JOG-STOP-RUN	N.A.	HH2420245	
OFF	HH2420102	HH2420202		INCH	HH2420124	HH2420224		LOW-OFF-HIGH	N.A.	HH2420246	
ON	HH2420103	HH2420203		JOG	HH2420125	HH2420225		RAISE-OFF-LOWER	N.A.	HH2420247	
OPEN	HH2420104	HH2420204		LEFT	HH2420126	HH2420226		SLOW-OFF-FAST	N.A.	HH2420248	
OUT	HH2420105	HH2420205		LOW	HH2420127	HH2420227		SLOW-OFF-START	N.A.	HH2420249	
PUSH-TO-TEST	HH2420106	HH2420206		FOR-REV	N.A.	HH2420228		<b>Markings</b>			
RAISE	HH2420107	HH2420207		HAND-AUTO	N.A.	HH2420229		← → ★	HH2420150	HH2420250	
REVERSE	HH2420108	HH2420208		HIGH-LOW	N.A.	HH2420230		↑ ↓ ★	HH2420151	HH2420251	
RIGHT	HH2420109	HH2420209		INCH-REVERSE	N.A.	HH2420231		○	HH2420152	HH2420252	
SLOW	HH2420110	HH2420210		JOG-FOR	N.A.	HH2420232			HH2420153	HH2420253	
START	HH2420111	HH2420211		JOG-REV	N.A.	HH2420233			HH2420154	HH2420254	
STOP	HH2420112	HH2420212		JOG-RUN	N.A.	HH2420234		I-O	HH2420155	HH2420255	
UP	HH2420113	HH2420213		LEFT-RIGHT	N.A.	HH2420235		I-II	HH2420156	HH2420256	
AUTO	HH2420114	HH2420214		OFF-ON	N.A.	HH2420236		I-O-II	HH2420157	HH2420257	
CLOSE	HH2420115	HH2420215		OPEN-CLOSE	N.A.	HH2420237		I-II-III	HH2420158	HH2420258	
DOWN	HH2420116	HH2420216		RAISE-LOWER	N.A.	HH2420238		↑ ★	HH2420159	HH2420259	
EMERGENCY STOP	HH2420117	HH2420217		SLOW-FAST	N.A.	HH2420239		← ★	HH2420160	HH2420260	
FAULT	HH2420118	HH2420218		START-STOP	N.A.	HH2420240			HH2420161	HH2420261	
FAST	HH2420119	HH2420219		UP-DOWN	N.A.	HH2420241		↓ ★	HH2420162	HH2420262	
FORWARD	HH2420120	HH2420220		FOR-STOP-REV	N.A.	HH2420242		→ ★	HH2420163	HH2420263	
HAND	HH2420121	HH2420221		FOR-OFF-REV	N.A.	HH2420243					
HIGH	HH2420122	HH2420222		HAND-OFF-AUTO	N.A.	HH2420244					

## PUSH BUTTON STATION ENCLOSURES

### Push Button Station Enclosures

- Required for Push Button Station assembly.
- Single, Two and Three Hole Station feature gray ABS housings and Ø22.5 mm hole & knockouts.
- Yellow covers are available for Single Hole Stations only.
- Compatible with all Operators, Pilot Lights and Front Connection Blocks.
- IP65 protection for assembled Push Button Stations, as per Push Button and Pilot Lights.



*Single Hole*  
Color Gray  
Cat. No. HF999004



*Single Hole, yellow cover*  
Color Yellow/Gray  
Cat. No. HF995001



*Two Holes*  
Color Gray  
Cat. No. HF999005



*Three Holes (center hole & 2 knockouts)*  
Color Gray  
Cat. No. HF999003

### Front Connection Blocks for Push Button Stations



Cat. No.	Function	Tip Color
HC22A2	NO	Green
HC22B2	NC	Red
HC22C2	1 NO + 1 NC	Red/Green
HC22D2	2 NO	2 each Green
HC22E2	2 NC	2 each Red



### Front Connection Bulb Holder Blocks for Push Button Stations



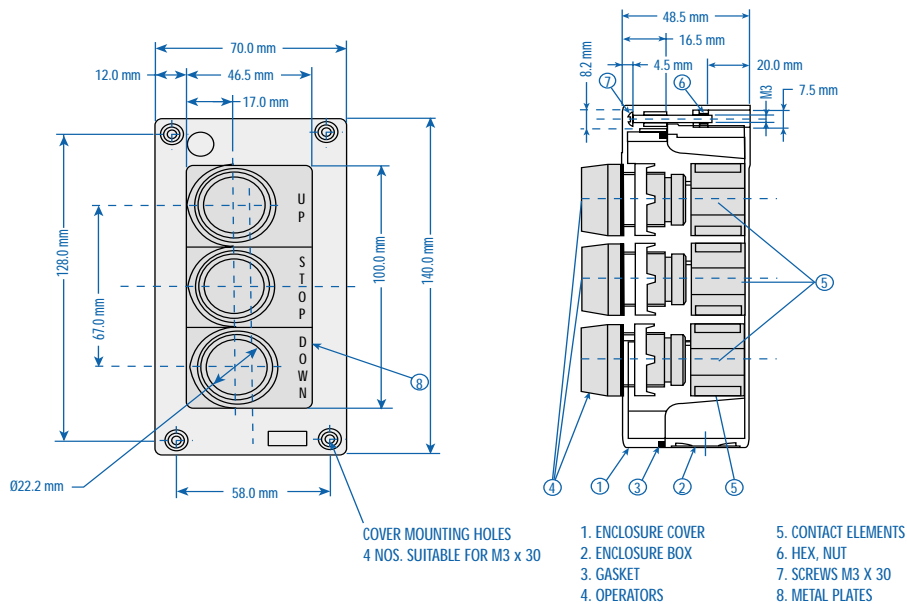
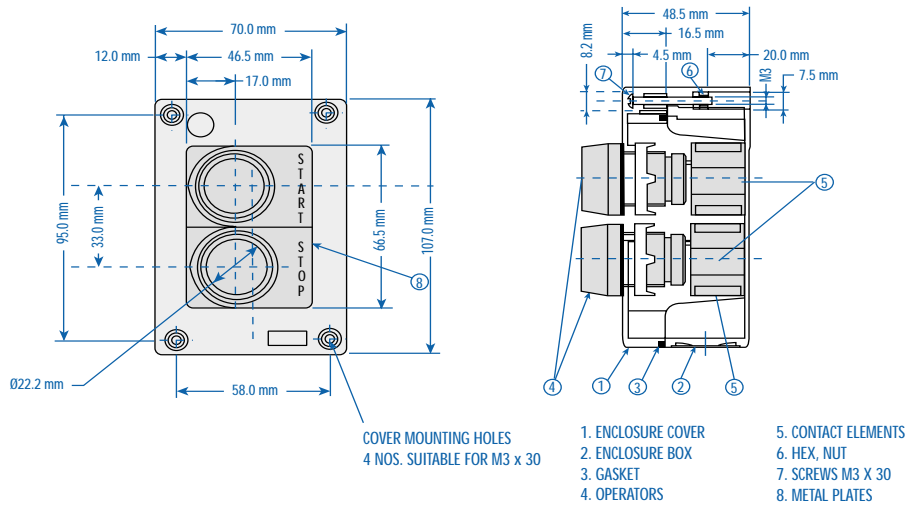
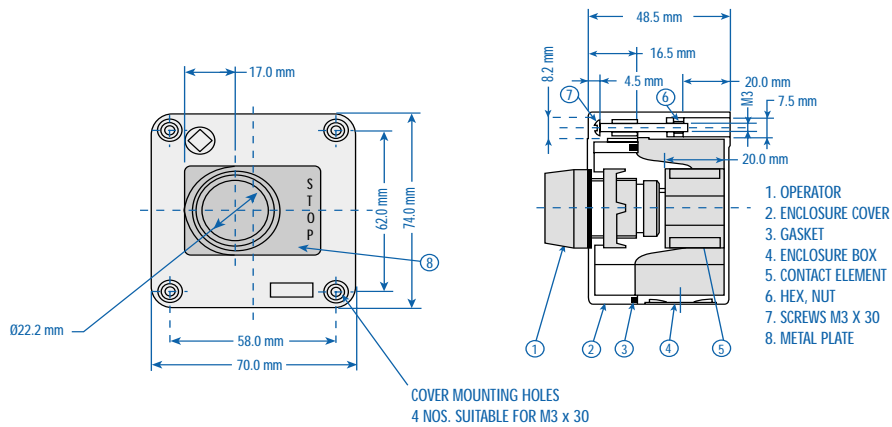
<i>Bulb Holder, without bulb</i>	Contact for:	Cat. No.
<i>Resistor + 1NO contact</i>	6VAC/DC	HC12H1
	12VAC/DC	HC12I1
	24VAC/DC	HC12J1
	48VAC/DC	HC12K1
	110VAC/DC	HC12L1

<i>Bulb Holder, without bulb with Resistor and Diode for 240VAC + 1NO Contact and to be used with 130 Volts max 20mA (BA9S) bulb</i>	Contact for:	Cat. No.
	240VAC/DC	HC22N1



<i>Bulb Holder, without bulb with Resistor + 1NC contact</i>	Contact for:	Cat. No.
	6VAC/DC	HC12M1
	12VAC/DC	HC12N1
	24VAC/DC	HC12O1
	48VAC/DC	HC12P1
	110VAC/DC	HC12Q1

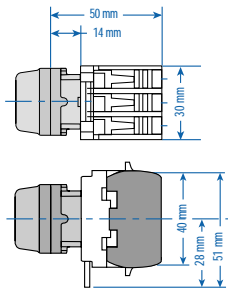
<i>Bulb Holder without bulb, with Resistor and Diode for 240VAC + 1NC contact to be used with 130 Volts max. 20mA (BA9S) bulb</i>	Contact for:	Cat. No.
	240VAC	HC22O1



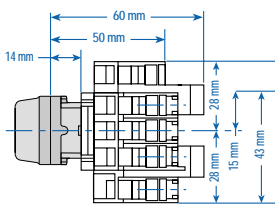
Note: All dimensions are shown in millimeters.  
To convert to inches, divide by 25.4.

# TECHNICAL SPECIFICATIONS AND MOUNTING DIMENSIONS

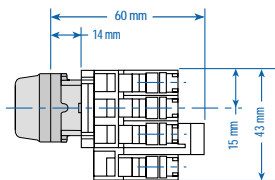
## MOUNTING with 1st row, side row and 2nd row cascading.



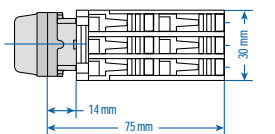
WITH 1ST ROW CLIP



WITH SIDE ROW CLIP (BOTH SIDES)



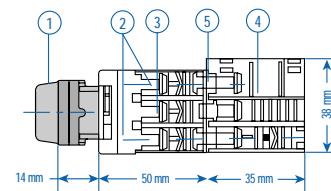
WITH SIDE ROW CLIP ON RH/LH



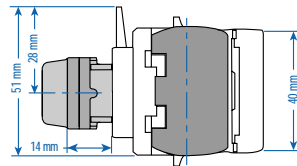
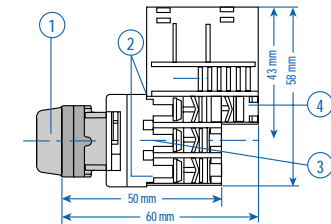
WITH SECOND ROW CLIP

Note: All dimensions are shown in millimeters.  
To convert to inches, divide by 25.4.

## MOUNTING with bulb holder and transformer block

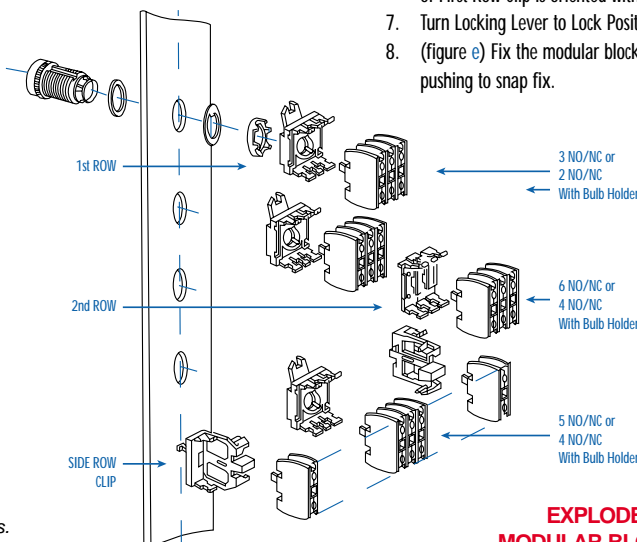


WITH 2ND ROW CLIP



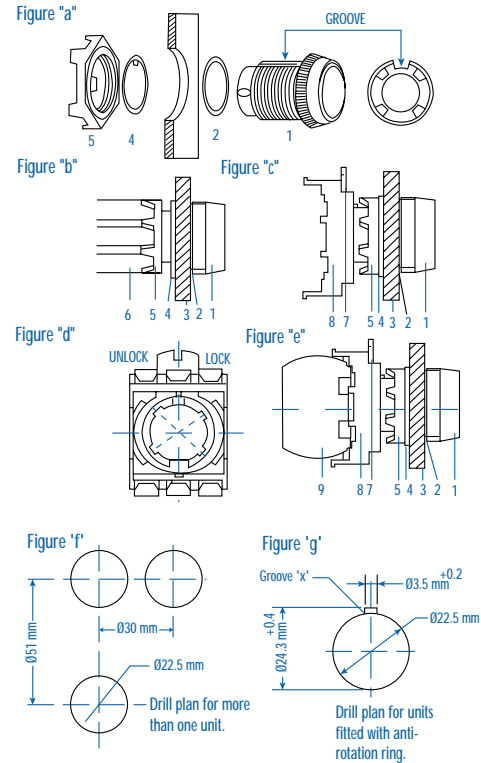
WITH SIDE ROW CASCADING

- ① Pilot Light or Illuminated Operator
- ② Contact Block NO or NC or Dummy Module
- ③ Bulb Holder
- ④ Transformer Block
- ⑤ Second Row Clip



EXPLODED VIEW OF  
MODULAR BLOCK ASSEMBLY

## MODULAR ASSEMBLY



### MOUNTING HOLES FOR MODULAR BLOCK ASSEMBLIES

1. (figure a & b) Remove the ring nut (5) from the operator (1).
2. Insert the operator along with the Sealing Ring (2) in panel cutout (3).
3. Orient the key of the antirotation ring (4) (optional) with the groove of the operator and insert the projection of antirotation ring in the groove of panel cutout as shown x in figure g.
4. With the help of fixing device (6) fix the locking nut (5).
5. (figure c & d) Keep the locking lever (7) of the First Row Clip (8) in unlocked position.
6. Insert the First Row Clip on to the operator. Ensure that the Protection of First Row Clip is oriented with groove of operator.
7. Turn Locking Lever to Lock Position.
8. (figure e) Fix the modular blocks (9) into the First Row Clip (8) by just pushing to snap fix.

## TECHNICAL SPECIFICATIONS

### OPERATORS, PILOT LIGHTS, MODULAR & FRONT CONNECTION BLOCKS

VDE, CE Electrical Ratings (IEC 947-3, 947-5-1, VDE 0660 Part 200, EN 60947-3, EN 60947-5-1)

Alternating Current	Rated Operational Voltage (50-60 Hz)		V	110	230	440	500	
	Rated Operational Current (IEC 947-3)	AC21						Amp
Direct Current	Rated Operational Current (IEC 947-5-1)		AC15	Amp	8	6.0	3.0	2.0
	Rated Operational Voltage	DC13						
		Rated Operational Current (IEC 947-5-1)		Amp	1.5	1.0	0.3	0.2

UL, CSA Electrical Ratings (CAN/CSA-C22.2 NO 14-M91, UL 508)

Contact Rating Code Designation, AC	Thermal Continuous Test Current Amp	Maximum Current								Maximum V-A	
		120V		240V		480V		600V		Make	Break
Make	Break	Make	Break	Make	Break	Make	Break	Make	Break	Make	Break
A600	10	60	6.0	30	3.0	15	1.5	12	1.2	7200	720

Contact Rating Code Designation, DC	Thermal Continuous Test Current Amp	Maximum Make & Break Current, Amp			Maximum Make & Break at 300V or less, V-A
		125V	250V	301 to 600V	
P300	5.0	1.1	0.55	—	138

**Electrical Life** at 230V, 50-60Hz, AC, utilization category AC21 to IEC 947-3

Rated current Amps	Operations (x10 <sup>6</sup> )
6	1
2	2

**Degree of Protection**  
(as detailed)

IP 65  
IP 67 with rubber/vinyl boot

**Operational Temperature Limits** (without shroud)

Non-illuminated	Illuminated
-30 to 60°C (-22 to 140°F)	-30 to 40°C (-22 to 104°F)

**Rated Insulation Voltage** 600 VAC

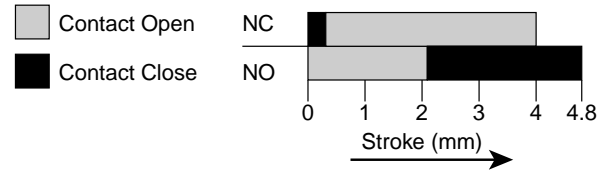
**Dielectric Test Voltage** > 4kV

**Rated Thermal Current** 16 Amp with, 2.5mm<sup>2</sup> conductors (14 AWG)

**Mechanical Life** 3 x 10<sup>6</sup> operations

**Terminals** Suitable for flexible or solid conductors from 2 x 1 mm<sup>2</sup> (2x18 AWG) to 2 x 2.5 mm<sup>2</sup> (2x14 AWG)

**Disposition of Contacts for Modular Blocks (2x16 AWG)**



**Storage Temperature Limits** -50 to 75°C (-58 to 167° F)

### PUSH BUTTON STATIONS

**Degree of Protection:**

Dust and watertight to IP67 with boot IP65 without boot, as per the Push Buttons and Pilot Lights.

**Safety:**

Equipment is fully insulated to protect against electrical shock.

**Mounting:**

Base mount through cover screw cavity. No. 4 sheet metal screws secure gaskets.

**Material:**

Base & Cover:	Impact resistant ABS
Cover Screws:	Metal
Gaskets:	Oil and acid resistant nitrile rubber

**Temperature range:**

Long term exposure to temperatures above 70°C (158° F) should be avoided. No significant change in strength is detected down to -20°C.

**Machining:**

Enclosures can be drilled, sawed, filed, punched, or welded with ultrasonic equipment.

**Terminal Capacity:**

1 to 2.5 mm square flexible wire.

**Dimensions:**

	1 Station	2 Station	3 Station
Base Size mm	74x70	107x70	140x70
Cover Depth mm	16.50	16.50	16.50
Base Depth mm	32.00	32.00	32.00

**Maintenance:**

No maintenance required. If necessary, soap and water can be used for cleaning. If detergent is used, enclosure should be rinsed well with clean water. **Do not use solvents to clean enclosures.**

**Chemical resistance:**

ABS products are almost completely resistant to aqueous acids, alkalis and salts. Concentrated phosphoric and hydrochloric acids have little effect. Low KB solvents, alcohols and animal / vegetable / mineral oils produce insignificant changes. Aromatic or chlorinated hydrocarbons and high KB solvents cause marked swelling. **Esters ketones and unsaturated alkalis should not be used.**

### LED INDICATORS

<b>Operating Voltage</b>	240VAC, 110VAC, 48VAC/DC, 24VAC/DC, 12VAC/DC
<b>Nominal Consumption</b>	27 mA
<b>Operating Range</b>	+10%, -20% of Operating Voltage
<b>Operating Temperature</b>	-10° to 60°C (14° to 140°F)
<b>Available Colors</b>	Red, Green, Yellow, Blue, Orange, White
<b>Insulation Resistance</b>	> 100 Meg Ohms at 500 VDC
<b>Terminals</b>	Suitable for Flexible or Solid Conductors from 1mm <sup>2</sup> to 2.5mm <sup>2</sup>
<b>Dielectric Test Voltage</b>	> 1.5kV
<b>Degree of Protection</b>	IP 30