

TYPES OF LED ILLUMINATED PILOT LIGHTS • PUSH BUTTONS • SELECTOR SWITCHES Ø22.5mm

DESCRIPTION		TYPE OF ACTUATOR OR LENSE ASSEMBLY	COLOUR OF ACTUATOR OR LENSE	BASIC SWITCHES NO-JB1, NC-JB2 OR LAMP HOLER	TYPE OF COMPLETE PUSH BUTTON
FLUSH PUSHBUTTON		9FA5	GREEN	1NO	9PBF5-10
		9FA2	RED	2NO+1NC	9PBF2-21
PROJECTING PUSHBUTTON		9PA6	BLACK	2NC	9PBP6-02
		9PA2	RED	3NO+3NC	9PBP2-33
BOOTED PUSHBUTTON		9BA2	RED	2NO	9PBB2-20
		9BA5	GREEN	2NC	9PBB5-02
MUSHROOM PUSHBUTTON SPRING RETURN		9MA6	BLACK	1NO+1NC	9PBM6-11
MUSHROOM PUSHBUTTON LATCHING, TURN TO RELEASE		9MA2	RED	1NC	9PBM2-01
		9MLA6	BLACK	1NC	9PBM6L-01
MUSHROOM PUSHBUTTON LATCHING, KEY TO RELEASE		9MLA2	RED	2NO+2NC	9PBM2L-22
		9MLKA2	RED	1NO+1NC	9PBMKL2-11
SELECTOR ACTUATOR(2 POS) SELECTOR ACTUATOR(3 POS)		9SA6-2P	BLACK	1NO	9PBS6-10-2P
		9SA6-3P	BLACK	1NO+1NC	9PBS6-11-3P
KEY SELECTOR ACTUATOR (2POS), KEY WITHDRAWABLE IN BOTH POSITIONS KEY ACTUATOR (3POS) KEY WITHDRAWABLE IN LEFT AND RIGHT POSITION		9KSA6-2P	BLACK	1NO	9PBKS6-10-2P
		9KSA6-3P	BLACK	1NO+1NC	9PBKS6-11-3P
SELECTOR LUMINOUS PUSHBUTTON, 2 POSITION WITH RESISTANCE AND DIODE (230V) SELECTOR LUMINOUS PUSHBUTTON, 3 POSITION WITH RESISTANCE AND DIODE (24V)		9LSAR5-2P230	GREEN	1NO+1NC+ 9LHR230	9PBLSR5-11-2P-230
		9LSAR2-3P24	RED	1NO+1NC+ 9LHR24	9PBLSR2-11-3P-24
PILOT LIGHT FOR DIRECT CONNECTION		9PL5	GREEN	9LHB130	9PBL5-130
		9PL2	RED	9LHB130	9PBL2-130
PILOT LIGHT THROUGH RESISTOR AND DIODE FOR 230V, BULB:130V		9PLR 3	AMBER	9LHR230	9PBLR3-230
		9PLR 4	BLUE	9LHR230	9PBLR4-230
LUMINOUS PROJ. PUSHBUTTON DIRECT CONNECTION FOR 24V LUMINOUS PROJ. PUSHBUTTON PUSH-PUSH TYPE DIRECT CONNECTION(130V)		9LPA5	GREEN	1NO+1NC+ 9LHB24	9PBP5-11-24
		9LPPA2-130	PROJ-RED	1NO+1NC+ 9LHB130	9PBLPP2-11-130
LUMINOUS FLUSH PUSHBUTTON THROUGH RESISTOR AND DIODE FOR 230V BULB:130V		9LFAR2-230	RED	1NO+1NC+ 9LHBR230	9PBLFR2-11-230
NON-ILLUMINATED TWIN PUSHBUTTON ACTUATOR MARKED '1 - 0'		9TA2-5	FLUSH GREEN FLUSH RED	1NO + 1NC	9PBT2-5-11
TWIN PUSHBUTTON NOT MARKED FLUSH PROJECTING		9TA5-2	FLUSH GREEN PROJ-RED	1NO 1NC	9PBT5-2-11
		9LTA5F2	LENSE-AMBER FLUSH-GREEN FLUSH-RED	9LHB130 1NO+1NC	9PBLT2-5-11-130
LUMINOUS TWIN PUSHBUTTON MARKED '1 0' FLUSH FLUSH		F2 IO 130			
LUMINOUS TWIN PUSHBUTTON NOT MARKED FLUSH PROJECTING WITH RESISTANCE AND DIODE (230V)		9LTAR3-F5 -P2-230	LENSE-AMBER FLUSH-GREEN PROJ-RED	9LHBR230 1NO 1NC	9PBLTR3-F5-10-FP2-01-230



LED ILLUMINATED PILOT LIGHTS PUSH BUTTONS SELECTOR SWITCHES Ø22.5mm

ACCESSORIES AND SPARES

LEGEND PLATES

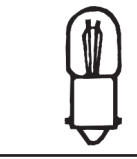
Legend Plates 30 X 40 mm are supplied with the following standard texts:
 START FORWARD UP OPEN AUTO SLOW RESET
 STOP REVERSE DOWN CLOSE HAND FAST INCH
 Legend plate Ø 60 mm yellow with black characters for EMERGENCY STOP



BULBS

Filament Bulbs type JLBC27S

Voltage :	6	12	24	30	48	60	130
Watts :	1	2	2	2	2	2	2.6



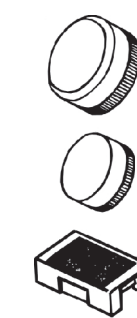
LENSES

Colour of Lense:	YELLOW	RED	AMBER	BLUE	GREEN	TRANSLUCENT	CLEAR
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For Pilot Lights : 9PLL1 9PLL2 9PLL3 9PLL4 9PLL5 9PLL7 9PLL8

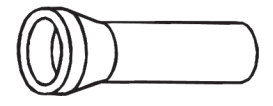
For Luminous Actuators (Flush / projecting) : 9LAL1 9LAL2 9LAL3 9LAL4 9LAL5 9LAL7 9LAL8

For Twin Luminous Actuators : 9LTAL1 9LTAL2 9LTAL3 9LTAL4 9LTAL5 9LTAL7 9LTAL8



BULB EXTRACTOR

Type No : 9JLBC27SE



BLANKING PLUG FOR Ø 22.5mm HOLE, BLACK

Type No : 9BP6



RUBBER BOOTS FOR BOOTED ACTUATORS

Colour of Boot :	YELLOW	RED	BLUE	GREEN	BLACK
Type No :	9RB1	9RB2	9RB4	9RB5	9RB6



PADLOCK

Padlock for mushroom actuator
 Padlock for projecting actuator



ORDERING INSTRUCTIONS

Actuators, Illuminated Actuators, Basic Switches, Lense Assemblies and Pilot Lights can all be ordered separately or in combination. Code No. of Illuminated Actuators and Non-Illuminated Actuators colours are given in colour chart.

Type of Basic Switches : NO : Actuator mounting : JB1, Individual mounting : JB5.
 NC : Actuator mounting : JB2, Individual mounting : JB6.

Example of Push Button : Type 9PBF211 means flush pushbutton, RED with 1NO + 1NC Basic Switches,



Manufactured by :

Authorised Distributors / Dealers



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LED ILLUMINATED PILOT LIGHTS PUSH BUTTONS SELECTOR SWITCHES Ø22.5mm

JAI Ø22.5 Push button selector switches, illuminated selector switches, Pilot lights are the new series of products included in our range. JAI Push Button Selector Switches, illuminated selector switches and Pilot lights are certified by Bureau of Indian Standards and carry unique ISI mark. JAI switches and Pilot Lights are also certified by CSA International, Canada / US and also conforms to European Standards CE & EN. JAI Pilot Lights and Push button switches offers reliability, simplicity of connection, interchangeable and safety together with flexibility so important to panel Assemblers, and also meets all the advanced requirements for the industrial applications. These switches and Pilot lights are aesthetically designed and manufactured with personal attention of our experts.

ACTUATORS:

The circular actuators have chrome plated metal bezels and are functionally interchangeable on the different types of basic switches. Actuators are available in Red, Yellow, Blue, Green, Amber, Black and Clear colours.

BASIC SWITCHES AND PILOT LIGHTS:

The basic switches are double break and have self wiping contacts. The basic switches are interchangeable and can be stacked without additional hardware. 1 to 6 basic switches (NO or NC) can be used with pushbuttons and selector switches. For illuminated switches 1 or 2 basic switches (NO or NC) can be used.

The pilot lights and illuminated switches are suitable for direct supply or supply through series resistor and diode, using bayonet cap filament bulb type JLBC27S, as follows

Supply voltage for direct connection without series resistor	6V-130V
Supply voltage through series resistor	12V-130V
Supply voltage through series and diode	230V (Bulb - 130V)
Bulb	Filament, type JLBC27S with OAL max 28mm

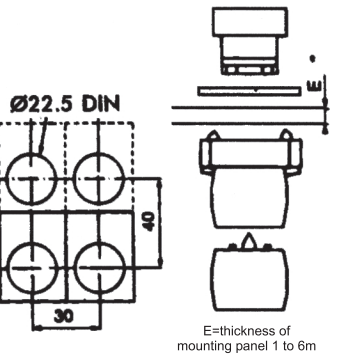


Pilot lights are also available with LED suitable for operating at various voltages.

Both the basic switches and pilot lights are designed to have terminals with combi screws.

FIXING:

The control devices Ø22.5mm can be fixed in any position on panels of 1 to 6mm thickness. We recommend minimum fixing centres of 30mm X 40mm. However, the dimensions and configuration should be decided on the basis of the applications. The actuators and the lenses assemblies lock on to the holding bracket, tightened equally from the rear. The screw should be tightened adequately to such an extent as to pierce through the paint on the panel from inside. These screws also ensure the earthing of the unit.



TECHNICAL SPECIFICATIONS:

Approvals	: Bureau of Indian Standards, CSA International, Canada / US
Standards Conformity	: IEC - 947-5-1, 1990 IS 13947 (part 5/ Sec.II):2004
Degree of Protection	: IP 65
Rated Insulation voltage	: 600v
Rated thermal current	: 10A
Contact operation	: Self wiping, slow break NO or NC
Make and break capacity	: AC 15, 5A, 240 VAC DC 13, 1.1A, 250 VDC
As per IEC 947-5-(1) 2000	: 1-2 for NC, 3-4 for NO Maximum 2x 1.5mm ² or 1 x 2.5mm ² Minimum 1 x 0.5mm ²
Terminal marking	: 10 A cartridge fuse HRC type, rated for resistive loading
Terminal capacity	: -25°C + 70°C
Short Circuit Protection	: <3000m
Operating Temperature	: Mechanical Life
Allitude	: Over 1 million operations.
Mechanical Life	

JMI LED ILLUMINATED PILOT LIGHTS PUSH BUTTONS SELECTOR SWITCHES Ø22.5 mm

STANDARD EXECUTIONS

Non illuminated Actuators: Flush, projecting booted, mushroom, key selector, selector, twin supplied with bracket.

Illuminated Actuators: Flush, projecting, projecting push-push, selector, twin supplied complete with bracket, lamp holder for direct connection without resistance as well as with resistance / resistance and diode in series.

Basic Switches: Actuator mounting type JB1: 1NO, JB2: 1NC. Individual mounting type JB5: 1NO, JB6: 1NC.

Pilot Light : Supplied with lens assembly, bracket, lamp holder for direct connection without resistance as well as with resistance / resistance and diode in series.

PILOT LIGHTS - ILLUMINATED PUSHBUTTON SWITCHES

PILOT LIGHT	LUMINOUS FLUSH	LUMINOUS PROJECTING	LUMINOUS PROJECTING PUSH PUSH	LUMINOUS SELECTOR 2 Pos. 3 Pos. 2 Pos. SPRING RETURN	LUMINOUS TWIN
PLASTIC					

NON ILLUMINATED PUSHBUTTON SWITCHES

FLUSH	PROJECTING	BOOTED
PLASTIC		

JMI LED ILLUMINATED PILOT LIGHTS PUSH BUTTONS SELECTOR SWITCHES Ø22.5 mm

NON ILLUMINATED SELECTOR PUSHBUTTON SWITCHES

KEY SELECTOR	SELECTOR	SELECTOR EXTENDED	TWIN
PLASTIC			

NON ILLUMINATED MUSHROOM PUSHBUTTON SWITCHES

MUSHROOM Ø 40mm SPRING RETURN	MUSHROOM Ø 40mm LATCHING WITH ARROW INDICATOR	MUSHROOM Ø 40mm WITH KEY STAYPUT	JUMBO MUSHROOM Ø 60mm SPRING RETURN / LATCHING WITH ARROW INDICATOR
PLASTIC			

COLOURS

YELLOW	1
RED	2
AMBER	3
BLUE	4
GREEN	5
BLACK	6
WHITE	7
CLEAR	8

PILOT LIGHTS

With Res.	No Res.	With Res.	No Res.	With Res.	No Res.	With Res.	No Res.	With Res.	No Res.
9PLR 1	9PL 1	9LFAR 1	9LFA 1	9LPAR 1	9LPA 1	9LPPAR 1	9LPPA 1	9LSAR1 2P	9LSA1 2P
9PLR 2	9PL 2	9LFAR 2	9LFA 2	9LPAR 2	9LPA 2	9LPPAR 2	9LPPA 2	9LSAR2 2P	9LSA2 2P
9PLR 3	9PL 3	9LFAR 3	9LFA 3	9LPAR 3	9LPA 3	9LPPAR 3	9LPPA 3	9LSAR3 2P	9LSA3 2P
9PLR 4	9PL 4	9LFAR 4	9LFA 4	9LPAR 4	9LPA 4	9LPPAR 4	9LPPA 4	9LSAR4 2P	9LSA4 2P
9PLR 5	9PL 5	9LFAR 5	9LFA 5	9LPAR 5	9LPA 5	9LPPAR 5	9LPPA 5	9LSAR5 2P	9LSA5 2P
9PLR 7	9PL 7	9LFAR 7	9LFA 7	9LPAR 7	9LPA 7	9LPPAR 7	9LPPA 7	9LSAR7 2P	9LSA7 2P
9PLR 8	9PL 8	9LFAR 8	9LFA 8	9LPAR 8	9LPA 8	9LPPAR 8	9LPPA 8	9LSAR8 2P	9LSA8 2P

Other types of request

TYPE NOS. OF NON ILLUMINATED ACTUATORS

9FA 1	9PA 1	9BA 1
9FA 2	9PA 2	9BA 2
9FA 4	9PA 4	9BA 4
9FA 5	9PA 5	9BA 5
9FA 6	9PA 6	9BA 6
9FA 7	9PA 7	

TYPE NOS. OF NON ILLUMINATED ACTUATORS

9TA 2-5	9TA 5-2	9KSA 6	9SA 6	9SEA 6
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TYPE NOS. OF NON ILLUMINATED ACTUATORS

9MA 1	9MA 1	9MLKA 2	9MJA 2	9MJLA 2
9MA 2	9MA 2			
9MA 4	9MA 4			
9MA 5	9MA 5			
9MA 6	9MA 6	9MLKA 6	9MJA 6	9MJLA 6

RELAY RESET ACTUATORS

COLOURS	TYPE NOS.
YELLOW	9RRA1
RED	9RRA2
GREEN	9RRA5
BLACK	9RRA6

The above type nos. of illuminated pushbuttons and pilot lights should be followed by supply voltage. Please refer table on ordering examples of illuminated items below.

Ordering examples of illuminated items

RESISTANCE + DIODE (Res)	Voltage AC/DC	Item examples & type no
	24V	Pilot light YELLOW 9PLR1-24
	48V	Sel. Act. 2 Pos. RED 9LSAR2-2P48
	110V	Lum.act.flush GREEN 9LFAR5-110
	230V	Lum.act.flush AMBER 9LFAR3-230
DIRECT (No Res)	24V	Pilot light GREEN 9PL5-24
48V	Sel. Act. 2 Pos. RED 9LSA2-2P48	
110V	Lum.act.flush AMBER 9LFA3-110	

To order illuminated actuators or pilot lights with LED, please add/suffix L to above type nos with resistance and supply voltage AC/DC. Eg. 9LFA5-L24DC OR 9PLR-L-230AC.

BASIC SWITCH

Sr.No.	Basic Switch	Type Nos. & Combination	Assembly Ref. Fig. No.	Diagram
1	1 NO	JB 1	1	
2	1 NO	JB 5	6	
3	1 NC	JB 2	1	
4	1 NC	JB 6	6	
5	1 NO + 1 NC	JB 1 + JB 2	2 or 3	
6	1 NO + 1 NC	JB 5 + JB 6	7	
7	2 NO	JB 1 + JB 1	2 or 3	
8	2 NO	JB 5 + JB 5	7	
9	2 NC	JB 2 + JB 2	2 or 3	
10	2 NC	JB 6 + JB 6	7	
11	2 NO + 2 NC	JB 1 + JB 1 / JB 2 + JB 2	4	
12	3 NO + 3 NC	JB 1 + JB 1 + JB 1 / JB 2 + JB 2 + JB 2	5	

STANDARD EXECUTIONS

Sr.No.	Function	Key Removable (Left/Right)	Type Nos. Key / Selector
1	Stayput	x	9KSA6-2PB
2	Stayput	x	9KSA6-2PL
3	Stayput	x	9KSA6-2PR
4	Spring return	x	9KSA6-2PSR
5	Stayput	x	9KSA6-3PB
6	Stayput	x	9KSA6-3PA
7	Stayput	x	9KSA6-3P
8	Spring return	x	9KSA6-3PSR
9	Spring return	x	9KSA6-3PSRL
10	Spring return	x	9KSA6-3PSRR
11	Stayput		Selector 9SA6-2P / Selector Extd 9SEA6-2P
12	Spring return		9SA6-2PSR / 9SEA6-2PSR
13	Stayput		9SA6-3P / 9SEA6-3P
14	Spring return		9SA6-3PSR / 9SEA6-3PSR
15	Spring return		9SA6-3PSRL / 9SEA6-3PSRL
16	Spring return		9SA6-3PSRR / 9SEA6-3PSRR

Variations of Basic Switch assembly on left (L) or right (R) side of actuator bracket for non illuminated pushbuttons

The above are some mounting arrangements for a maximum of six basic switches for non - illuminated pushbuttons