

Tactile pushbutton switches with large actuator

Distinctive features and applications



❑ Common features

- Large ergonomic actuator (Ø 35 mm)
- Tactile feedback
- Low behind-panel depth (21 mm max.)
- Stylish design
- Long life

This series has been developed on a modular base in order to fit the exact needs of technicians and end-users.

❑ Installation options

The LPI series has a number of features to ensure easy installation:

- Front or rear mounting
- With or without sealing
- 2 separate circuits for NO/NC 5A version
- Terminal block connector for 0,1A NO version
- 3 different LED voltages: 6V, 12V, 24V
- Integrated LED resistor

❑ Aesthetic options

- Ring or dot illumination
- Wide range of LED colours
- Wide range of bezel colours
- Many different actuator types and colours

❑ Applications

Because of its large actuator, this product is suited to all indoor applications where the pushbutton needs to be located quickly (access control, call information, museums, exhibitions). This product is also ideal for applications where the end-user uses gloves.

This product meets the requirements of EN81-70 and is ideal for use in all types of indoor lifts.

Tactile pushbutton switches with large actuator

Specifications



- ☐ Front or rear mounting
- ☐ Illuminated or non-illuminated
- ☐ Flexibility of marking
- ☐ Designed to meet the requirements of EN81-70

ELECTRICAL SPECIFICATIONS

- Snap-action, momentary function
- Mechanical life : 1.000.000 cycles min. for 5A NO/NC
5.000.000 cycles min. for 50mA NO
- Max. current/voltage rating with resistive load :

5A NO/NC version	50mA NO version
5A 12VDC - 50.000 cycles 100mA 12VDC - 1.000.000 cycles	50mA 24 VDC - 5.000.000 cycles

- Min. current with resistive load : 0,5mA at 24VDC for NO version
- Contact resistance : 100mΩ max.
- Dielectric strength : 500Vrms 50Hz between terminals
1.000 Vrms 50 Hz between terminals and ground
- Insulation resistance : 10MΩ at 500VDC
- Integrated resistors for illuminated versions
- LED current : 20mA typical for dot or ring (30mA max.)
- LED protected from reverse polarity
- Stand-by consumption : 0,5VA max.

MATERIALS

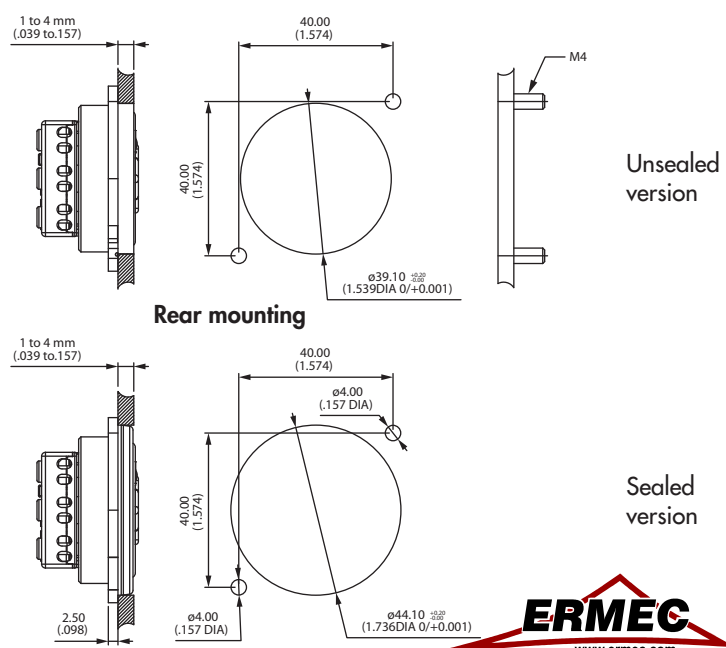
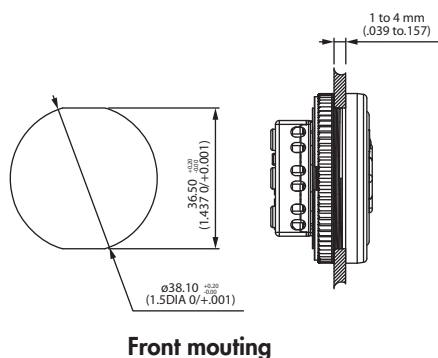
- Switch block : thermoplastic for 5A NO/NC
- Contacts :
5A NO/NC : silver, gold plated
50mA NO : silver
- Actuator crimped symbol : 304L stainless steel

MECHANICAL SPECIFICATIONS

- Environmental protection :
- IP53 for sealed version
- IP40 for unsealed version
- Impact resistance :
- IK06 for NO/NC version
- IK04 for NO version
- Operating force : 2,5 to 5N (unsealed)
- Total travel : 2 mm ±0,3 mm
- Operating temperature :
- 20°C to +65°C
- Storage temperature :
- 40°C to +70°C

PANEL CUT-OUT

Panel thickness : 1 to 4 mm (.039 to .157)



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Overview

SWITCH BLOCK

LPI				
SERIES	Electrical functions	Illumination	LED voltage	LED colour
	3 50mA NO 5 5A NO/NC	0 No illumination 1 Dot 4 Ring	XX None 06 6V 12 12V 24 24V	X None R Red G Green B Blue A Amber W White

OPERATOR

Mounting	Sealing	Bezel colour	Actuator type	Actuator colour	Actuator marking
1 Front mounting 2 Rear mounting	X Unsealed K Sealed	X No bezel 1 Blue 2 Black 3 Green 4 Grey 5 Yellow 6 Red 7 White 9 Amber N Satin grey Consult APEM.	1 Raised crimped 2 Raised moulded 3 Raised screen printed 4 Without symbol 5 Screen printed	7 White	See end of the series.

ABOUT THIS SERIES

On the following pages, you will find successively switch block order numbers and operator order numbers.

Dimensions : first dimensions are in mm while inches are shown as bracketed numbers.



NOTICE : please note that not all combinations of above numbers are available. Refer to the following pages for further information.



Packaging unit : 15 pieces for front mounting versions - 20 pieces for rear mounting versions.



Sealing boot available to increase the sealing of LPI switches. See section H.



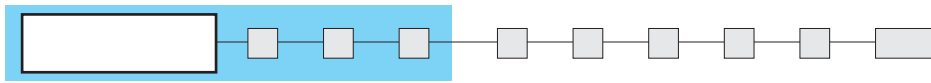
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Tactile pushbutton switches with large actuator

Switch block

MODEL
STRUCTURE

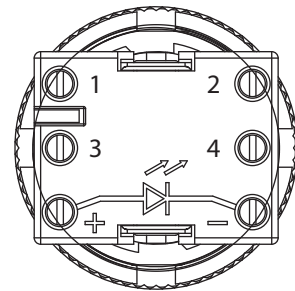
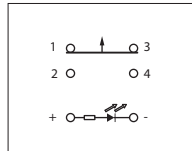
SWITCH BLOCK



5A momentary NC/NO combined



LPI5



Terminal block

Wire size : AWG20-15 - 0,5 to 1,5 mm²

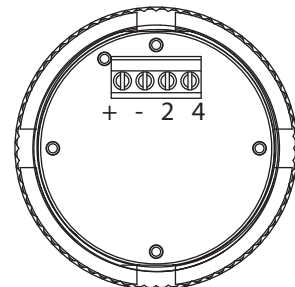
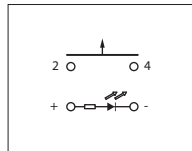
Rated torque : 0,5 Nm

Screw size : M3

50mA momentary NO



LPI3



Terminal block

Wire size : AWG28-16 - 0,5 to 1 mm²

Rated torque : 0,4 Nm

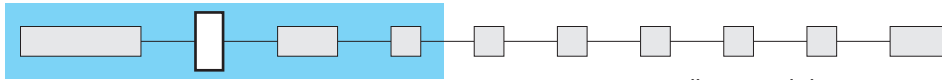
Screw size : M2

Tactile pushbutton switches with large actuator

Switch block

ILLUMINATION

SWITCH BLOCK



- 0 Non-illuminated
- 1 Illuminated dot (1 LED)
- 4 Illuminated ring (4 LEDs)

Option 4 available only in the case of screen-printed symbol

Illuminated dot



Option 1

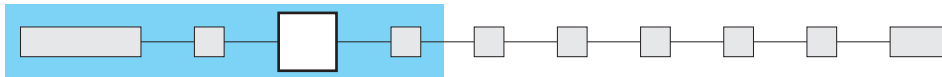
Illuminated ring



Option 4

LED VOLTAGE

SWITCH BLOCK



- XX Non-illuminated
- 06 6V
- 12 12V
- 24 24V

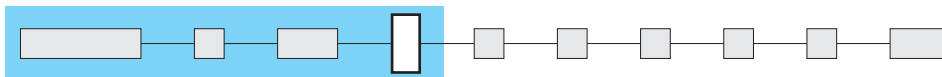


Combination with other options : see table below.

- Integrated resistors
- LED current : 20mA typical for dot or ring (30mA max.)
- LEDs protected from reverse polarity
- Stand-by consumption for illuminated product : 0,5VA max.

LED COLOUR

SWITCH BLOCK



- X Non-illuminated
- R Red
- G Green
- A Amber
- B Blue
- W White

Colours available with illuminated ring (option 4)

	Red	Green	Amber	Blue	White
LED voltage	Version 5A				
6V	No	No	No	No	No
12V	Yes	Yes	No	No	No
24V	Yes	Yes	Yes	Yes	Yes
LED voltage	Version 50mA				
6V	No	No	No	No	No
12V	Yes	No	Yes	No	No
24V	Yes	Yes	Yes	Yes	Yes@

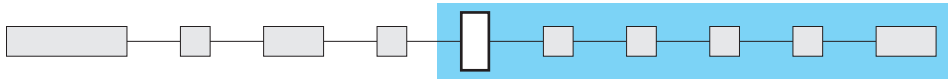


Tactile pushbutton switches with large actuator

Operator

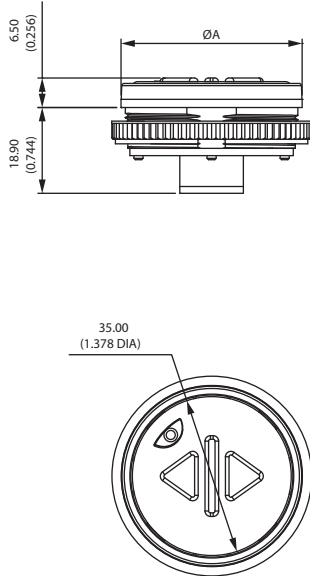
MOUNTING

OPERATOR

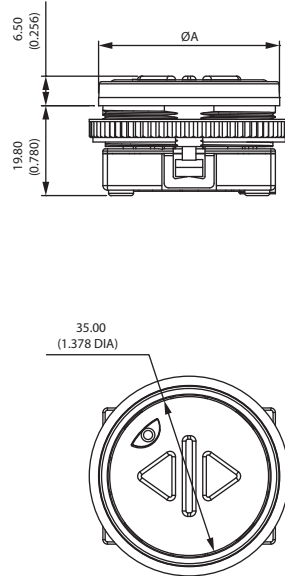


- 1 Front mounting
- 2 Rear mounting

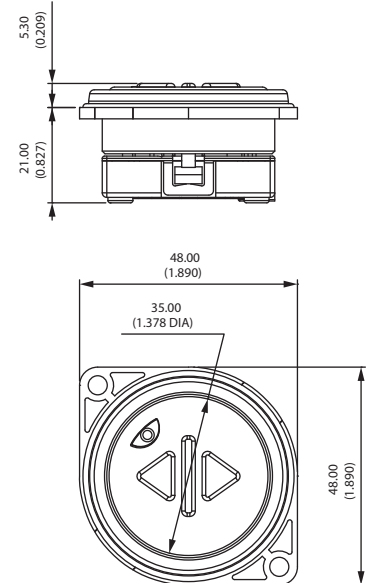
FRONT MOUNTING - 50mA version



FRONT MOUNTING - 5A version

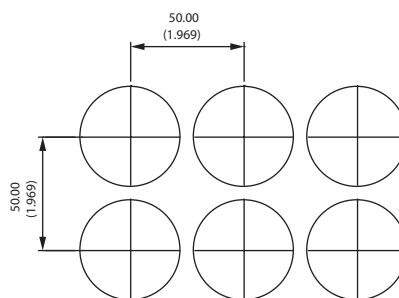


REAR MOUNTING - all versions



MATRIX MOUNTING

All versions



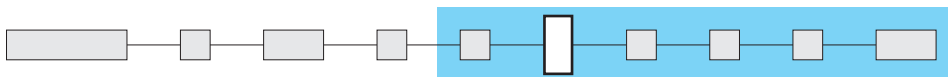
Dimension A

Sealed models : 44 mm (1.732)

Unsealed models : 39,9 mm (1.570)

SEALING

OPERATOR



- X Unsealed
- K Sealed

Note : bezel compulsory on sealed versions.

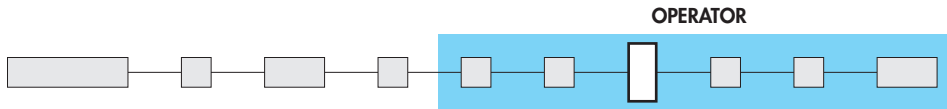


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Tactile pushbutton switches with large actuator

Operator

BEZEL COLOUR



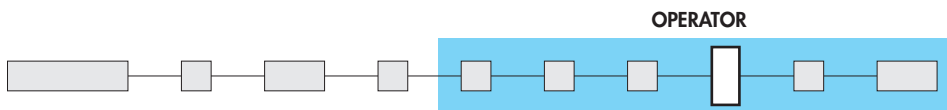
- | | |
|-----|----------|
| X | No bezel |
| 1 | Blue |
| 2 | Black |
| 3 | Green |
| 4 | Grey |
| 5 | Yellow |
| 6 | Red |
| 7/1 | White |
| 9 | Orange |



Satin grey (option N) : consult APEM.

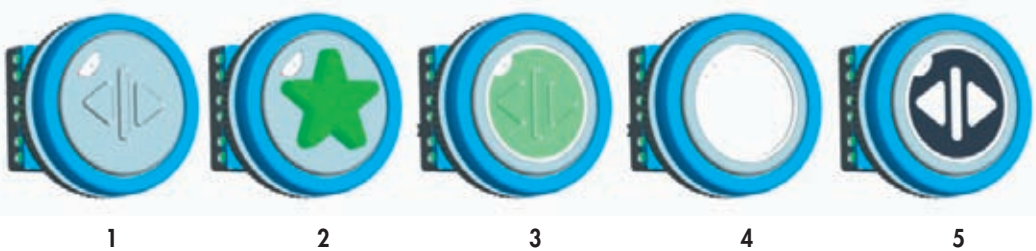
For sealed versions, the bezel is compulsory.

ACTUATOR TYPE

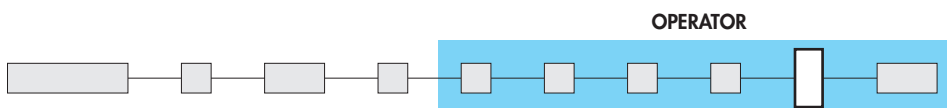


- | | |
|---|---------------------------------------|
| 1 | Stainless steel raised crimped symbol |
| 2 | Raised moulded symbol (star and bell) |
| 3 | Raised screen printed symbol |
| 4 | Without symbol |
| 5 | Screen printed symbol |

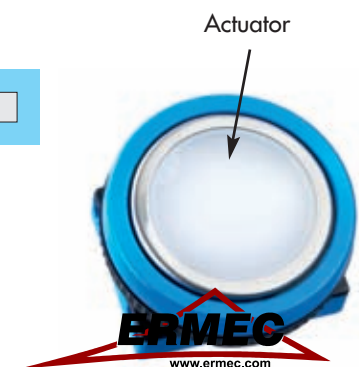
Ring illumination available with options 3, 4 and 5 only.



ACTUATOR COLOR



- | | |
|---|-------|
| 7 | White |
|---|-------|



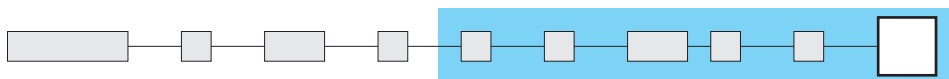
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Tactile pushbutton switches with large actuator

Operator

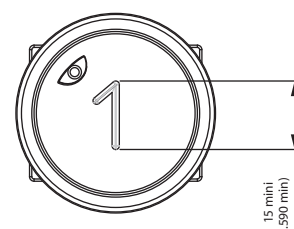
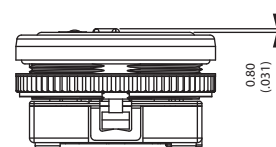
ACTUATOR MARKING

OPERATOR



CODE	SYMBOL	DESCRIPTION
XX	/	No symbol
00	0	
01	1	
02	2	
03	3	
04	4	
05	5•	With single tactile point
06	6	
07	7	
08	8	
09	9	
11	-1	
12	-2	
13	-3	

CODE	SYMBOL	DESCRIPTION
14	◀▶	Open
15	▶◀	Close
16	△	Up
17	▽	Down
18	◀◁	Left
19	▷▶	Right
20	✻	Ventilation
21	🔔	Alarm (moulded, yellow)
22	★	Exit level (moulded, green)
23	☎	Phone



Actuator type 1

	Symbol height		
	Symbol 21	Symbol 22	Other symbol
Actuator type 1	x	x	0,8 mm
Actuator type 2	0,8 mm	5 mm	x
Actuator type 3	x	x	0,8 mm
Actuator type 4	x	x	x
Actuator type 5	x	x	0 mm

x = non available

Selection guide - Section B2 ermec@ermec.com

Pushbutton switches

								
Series	ZP	SMT TP	TP	9500	PHAP40	SP	8000	9400/9600
Page	B2-2	B2-4	B2-6	B2-12	B2-20	B2-22	B2-28	B2-34
Poles	1	1	1,2	1	2	1,2	1,2	1
Maximum current	500mA 48VDC	0,4VA 20V AC/DC	0,5A 48V AC/DC	100mA 30VDC	100mA 30VDC	1A 30VDC	(3A 250VAC)* 4A 30VDC	1A 30VDC
Bushing dimension								
Ø4 (.157)				X				
Ø4,83 (10-48)	X							
Ø6,35 (1/4)						X	X	X
Ø11,9 (15/32)							X	
Ø16 (.629)								X
Mounting options								
Horizontal SMT		X						
Vertical right angle SMT		X						
Vertical Through hole	X		X	X	X	X	X	X
Horizontal Through hole			X			X	X	
Vert. right angle Thr. hole			X	X		X		
Panel	X			X		X	X	X
Terminal options								
PCB	X	X	X	X	X	X	X	X
Solder lugs	X			X			X	X
Quick-connect								X
Sealing	No	Process	Process	Optional	No	Process	Optional	Optional
() * See applicable approvals								
								
Series	10400	13000	13000X778	18000	IT	1200	1400	4700/4800
Page	B2-42	B2-44	B2-52	B2-63	see website	B2-107	B-114	B-117
Poles	1,2	1,2	2	1,2	2	1	1	1,2
Maximum current	3A 24VDC	4A 30VDC *2A 250VAC)*	4A 30VDC	7A 30VDC	1,5A 250VAC	(4A 250VAC)* 4A 24VDC	6A 12VDC	(3A 250VAC)*
Bushing dimension								
Ø6,35 (1/4)		X		X				
Ø10 (.393)	X							
Ø11,9 (15/32)		X	X					
Ø 12 (.472)						X		X
Mounting options								
Vertical Through hole		X	X	X			X	X
Horizontal Through hole		X		X	X			
Vert. right angle Through hole				X				
Panel	X	X	X	X		X	X	X
Snap-in				X			X	
Terminal options								
PCB		X	X	X				
Solder lugs	X	X	X	X		X	X	X
Quick-connect						X		X
Screw						X		
Sealing	No	Optional	IP67	No	No	No	No	No



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Pushbutton switches

	New! 	New! 		New! 	New! 			
Series	CG	CP	PBA	FP	MP	LPI		
Page	B2-120	B2-125	B2-129	B2-145	B2-150	B2-156		
Poles	1 NPN	1 NPN	1	1,2	1,2	1		
Maximum current	200mA 24VDC	200mA 24VDC	1A 24VDC	200mA 12VDC	20mA 5VDC	5A 12VDC 100mA 12VDC		
Illuminated	X	X	X	X		X		
Bushing dimension								
Ø15,20 (.598)					X			
Ø16 (.629)		X	X					
Ø19 (.748)		X	X					
Ø22 (.866)		X	X					
Ø24 (.944)				X				
Ø38 (1.496)						X		
Ø44 (1.732)						X		
Mounting options								
Panel	X	X	X	X	X	X		
Terminal options								
Solder lugs				X				
Screw						X		
Flying leads		X	X					
Cable		X	X	X				
Connector	X	X			X			
Sealing	N/A	IP68, IP69K	IP68,IP69K	No	IP68	IP53		

«I» range selection guide : page 7
AV series selection guide : page 10

Selection guide - Section B2

AV series

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Page	B2-78	B2-79	B2-80	B2-81	B2-83	B2-86	B2-87, B2-100	B2-89
General specifications								
Anti-vandal (IK08/IK10)	X	X						
Security			X	X	X	X	X	X
Approval (optional)	UL/CSA	UL/CSA			UL/CSA			
Sealing	Up to IP65	Up to IP65	Up to IP65	Up to IP65	Up to IP65	IP65, IP69K	Up to IP67	Up to IP65
Illumination							X	X
Marking					X			
Electrical specifications								
Maximum current	2A 48VDC (4A 250VAC)*	2A 48VDC (4A 250VAC)*	0,2A 48VDC	1A 24VDC	2A 48VDC (4A 250VAC)*	5A 15VDC 5A 250VAC	1A 30VDC	2A 48VDC
Momentary (NO)	X	X			X			
Momentary (NO) tactile			X					
Momentary (NO/NC)						X	X	
Latching				X				X
Diameter and shape								
Ø 16 (.629)	Flat		AV063	AV061				
	Curved		AV163	AV161				
Ø 19 (.748)	Flat	AV09			AV09	AV19LP	AV9	AV09..EA
	Curved	AV19			AV19	AV19LB		AV19..EA
Ø 22 (.866)	Flat		AV03				AV3	
	Curved		AV02					

() * See applicable approvals

								
Page	B2-91	B2-93, B2-95	B2-97	B2-98	B2-98	B2-102	B2-104	B2-106
General specifications								
Security	X	X	X	X	X	X	X	X
Approval (optional)			UL/CSA					
Sealing	Up to IP65	Up to IP67, IP69K	Up to IP65	Up to IP65	Up to IP65	Up to IP65	IP65	IP65
Illumination	X	X				X		
Marking	X	X		X	X			
Electrical specifications								
Maximum current	50mA 24VDC	50mA 24VDC	2A 48VDC (4A 250VAC)*	2A 250VAC	3(1,5)A 250VAC	2A 48VDC	5A 250VAC	5A 250VAC
Momentary (NO)			X					
Momentary (NC)				X				
Momentary (NO) tactile	X	X	Mom. (NO)					
Momentary (NO/NC)							X	X
Latching						X		
Alternate action					X			
Diameter and shape								
Ø 19 (.748)	Flat	AV09C7	AV9S					
	Curved	AV19C7						
Ø 22 (.866)	Flat		AV3S	AV03	AV031200	AV044700	AV03..EA	AV22LP
	Curved			AV02	AV021200		AV02..EA	AV22LB
Ø 24 (.944)	Flat							AV22PNA
	Concave							

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