

# ALCOSWITCH PUSHBUTTON EMERGENCY STOP SWITCH

ILLUMINATED AND NON-ILLUMINATED

## INTRODUCTION

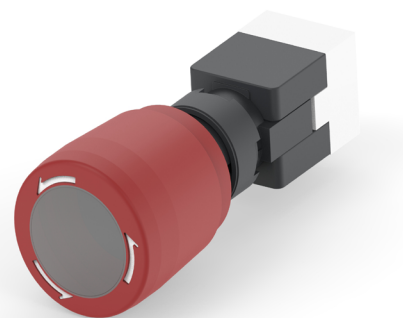
TE Connectivity (TE)'s PBES16 Series pushbutton emergency stop switch is offered as an illuminated and non-illuminated switch with two different actuator button styles, multiple lighting options, agency approvals, and meets IEC 60947-5-1 & IEC 60947-5-5 standards. The PBES16 series comes equipped with a 20N actuation force for ruggedized applications. It helps avoiding accidental actuations and is IP65 rated to resist harsh environments.

## FEATURES

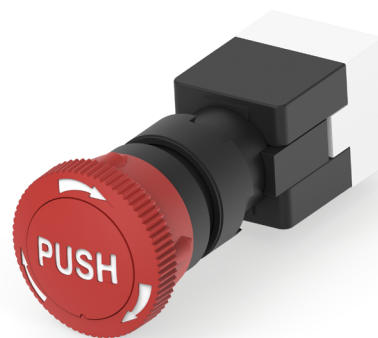
- IP65 rated
- IEC 60947-5-1 & IEC 60947-5-5
- 16mm mounting hole
- Simple easy mounting
- Solder to wire or quick connect disconnect terminals
- Gold plating
- Illuminated & non-illuminated
- LED & incandescent
- High actuation force

## APPROVALS

- UL: E60363
- TUV: B 047175 0033 REV. 01



PBES16L



PBES16N

# ALCOSWITCH Pushbutton Emergency Stop Switch

Illuminated and Non-Illuminated

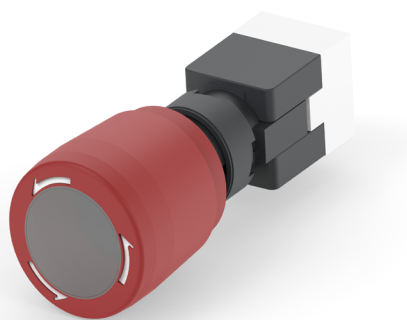
## PRODUCT SPECIFICATION

Mechanical Life	>100,000 Operations	
Electrical Life	>50,000 Operations	
Motion Tolerance	< 20 Operations/Minute (Mechanical and Electrical Life)	
Degree of Protection	IP65	
Panel Thickness	0.5mm to 5mm	
Mounting Torque	1.1 N-m	
Maximum Insulation Voltage	1500VAC 60Hz, 10mA, 1 minute	
Insulation Resistance	100M $\Omega$ @500 VDC, 100mA, 1 minute	
Storage Temperature	-40 °C to +85 °C	
Operating Temperature	-25 °C to +55 °C (-25 °C to +70 °C Without Lamp)	
Contact Resistance	<= 50 m $\Omega$ (Initial)	
Operating Forces	Push - Lock 20 +0/-10N, Turn - Reset 0.06 N-m	
Operating Travel	PBES16L	Push - Lock 3.6 + 0/-0.6 mm, Turn - Reset CCW 30°
	PBES16N	Push - Lock 3.3 + 0.3 mm, Turn - Reset CW 30°
Pollution Degree	3	

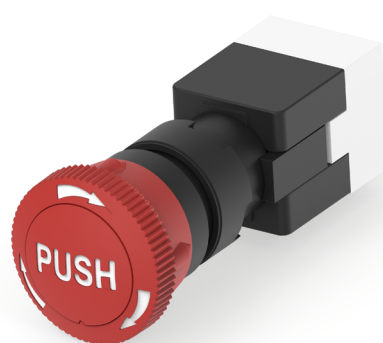
## ELECTRICAL RATINGS

Rated Insulation Voltage (Ui)	300V	
Conventional Enclosed Thermal Current (Ithe)	5A	
Rated Operational Voltage (Ue)	125 V	250 V
Utilization Category	Rated Operational Current (Ie)	
AC-15	3	1.5
DC-13	0.22	0.11

## SWITCH STYLES



PBES16L - ILLUMINATED  
(WITH OR WITHOUT LAMP)

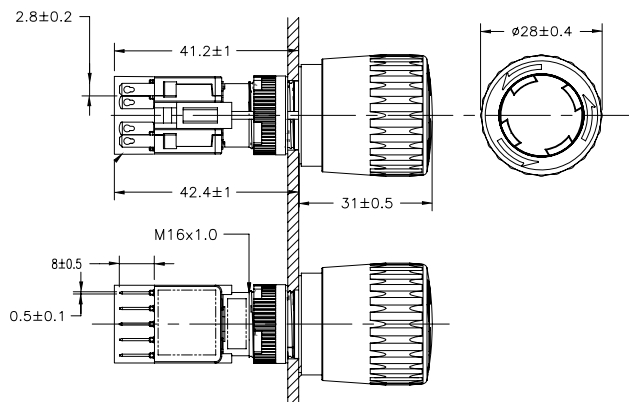


PBES16N - NON-ILLUMINATED

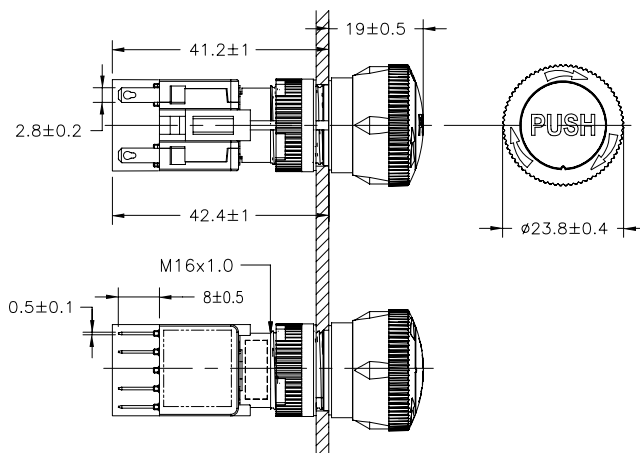
# ALCOSWITCH Pushbutton Emergency Stop Switch

Illuminated and Non-Illuminated

## ACTUATOR BUTTON SHAPE (Unit: mm)

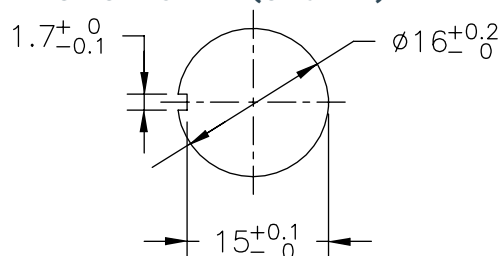


PBES16L - ILLUMINATED  
(WITH OR WITHOUT LAMP)

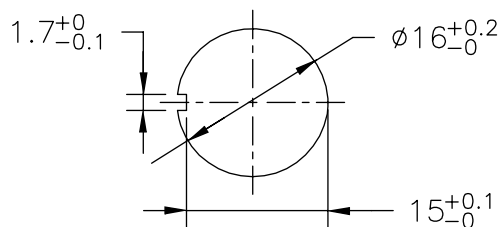


PBES16N - NON-ILLUMINATED

## MOUNTING HOLE SHAPE (Unit: mm)

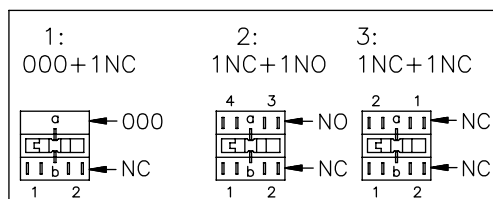


MOUNTING HOLE  
PBES16L - ILLUMINATED  
(WITH OR WITHOUT LAMP)

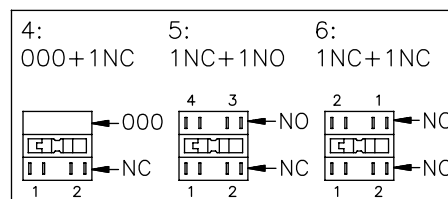


MOUNTING HOLE  
PBES16N - NON-ILLUMINATED

## SWITCH FUNCTIONS

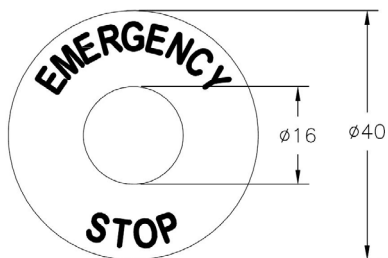


PBES16L - ILLUMINATED  
(WITH OR WITHOUT LAMP)



PBES16N - NON-ILLUMINATED

## IDENTIFICATION PLATE (Unit: mm)



### Notes:

1. Dimensions in millimetres unless otherwise specified.
2. Dimensions shown for reference purposes only. Specifications subject to change.

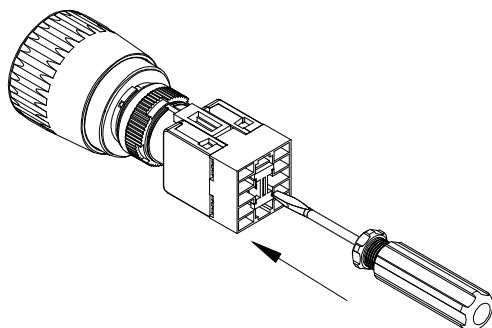
# ALCOSWITCH Pushbutton Emergency Stop Switch

Illuminated and Non-Illuminated

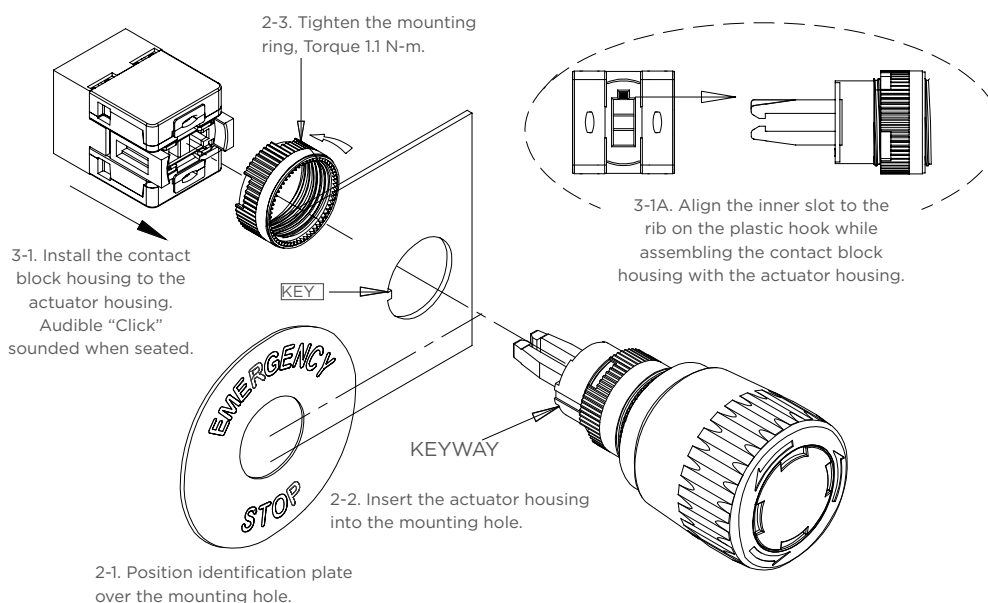
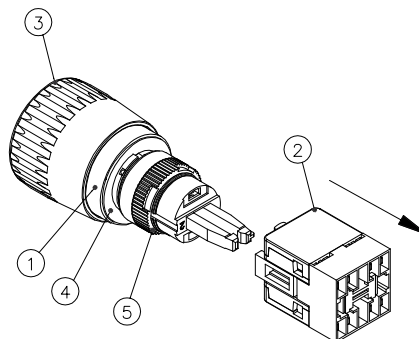
## INSTALLATION PROCEDURE

### PBES16L (WITH OR WITHOUT LAMP)

1-1. Depress release tab with screwdriver until contact block housing releases from actuator housing.



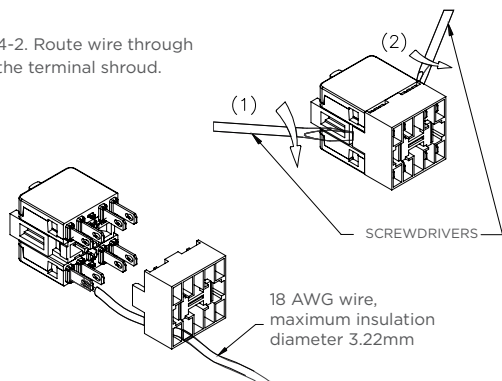
1-2. Separate contact block housing from actuator housing. Wires can be terminated to the terminals of the contact block housing.



### SOLDER TERMINATIONS:

4-1. Remove terminal shroud - affix two screwdrivers about the tabs of the shroud and gently apply force so as to release shroud from the contact block housing.

4-2. Route wire through the terminal shroud.



4-3. Solder wires to terminals. Soldering temperature is 360°C for 3 seconds.

### Notes:

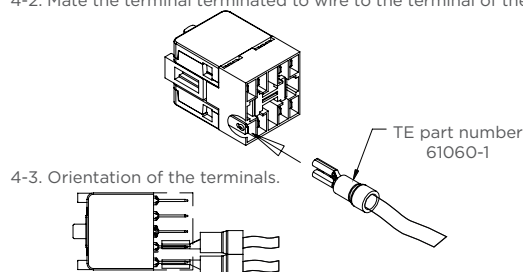
1. Dimensions in millimetres unless otherwise specified.
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### FASTON TERMINAL TERMINATION:

Noted lamp terminals are labelled A- and B+

4-1. Crimp TE FASTON receptacle 110 series terminal part number 61060-1 to 18 AWG wire, maximum insulation diameter 2.54mm.

4-2. Mate the terminal terminated to wire to the terminal of the switch.

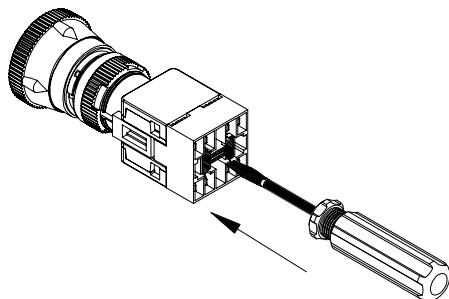


# ALCOSWITCH Pushbutton Emergency Stop Switch

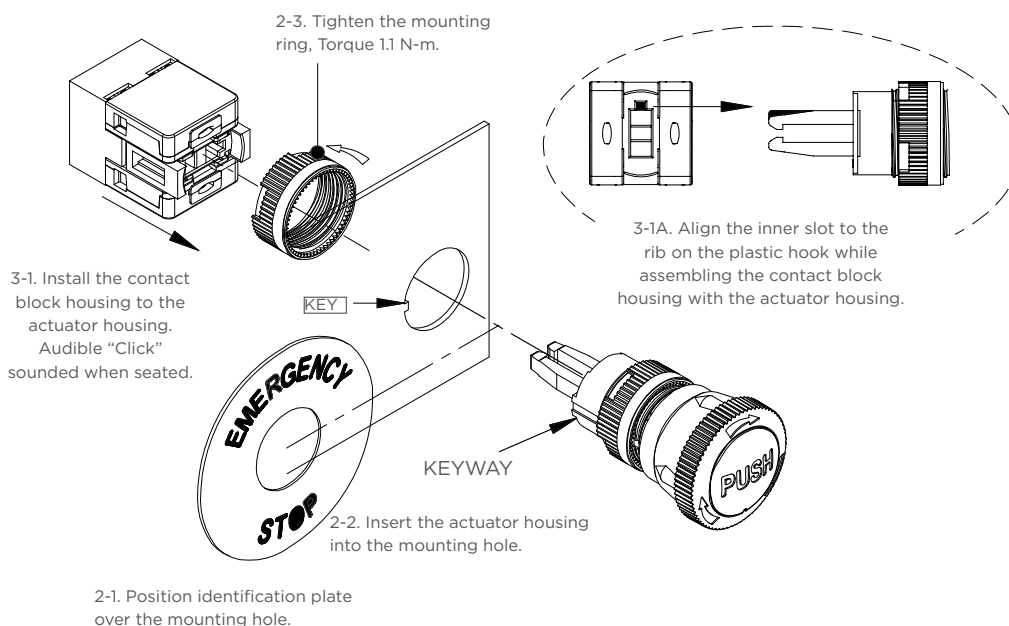
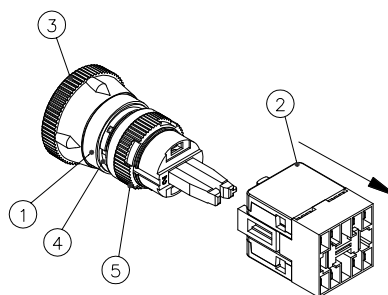
Illuminated and Non-Illuminated

## PBES16N - NON-ILLUMINATED

1-1. Depress release tab with screwdriver until contact block housing releases from actuator housing.



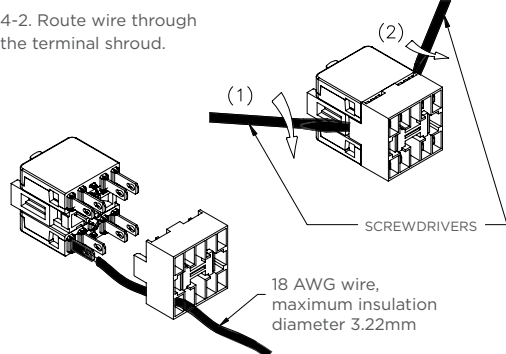
1-2. Separate contact block housing from actuator housing. Wires can be terminated to the terminals of the contact block housing.



### SOLDER TERMINATIONS:

4-1. Remove terminal shroud - affix two screwdrivers about the tabs of the shroud and gently apply force so as to release shroud from the contact block housing.

4-2. Route wire through the terminal shroud.

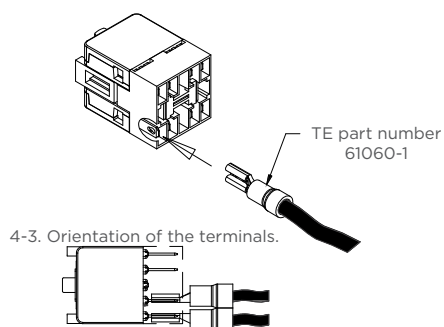


### FASTON TERMINAL TERMINATION:

Noted lamp terminals are labelled A- and B+

4-1. Crimp TE FASTON receptacle 110 series terminal part number 61060-1 to 18 AWG wire, maximum insulation diameter 2.54mm.

4-2. Mate the terminal terminated to wire to the terminal of the switch.



### Notes:

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# ALCOSWITCH Pushbutton Emergency Stop Switch

Illuminated and Non-Illuminated

## ORDERING INFORMATION

### PBES16L ILLUMINATED PUSHBUTTON EMERGENCY STOP SWITCH WITH OR WITHOUT LAMP

Part Number  
PBES16L \_ \_ R E

Model No

PBES16L

Switch Function

1	000 + NC
2	1NC + 1NO
3	1NC + 1NC

Packaging

Blank	Standard package
E	Single Box

Actuator Color

R	Not Included
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Lamp Options

O	No Lamp
A	LED 6V DC 28mA
B	LED 12V DC 19mA
C	LED 24V DC 12mA
D	LED 12 to 24V AC/DC 11mA
H	INCANDESCENT 6V AC/DC 200mA
I	INCANDESCENT 14 V AC/DC 80mA
J	INCANDESCENT 28V AC/DC 40mA
K	INCANDESCENT 48V AC/DC 25mA
L	INCANDESCENT 60V AC/DC 20mA
M	INCANDESCENT 33V AC/DC 35mA
N	INCANDESCENT 6VAC/DC 40mA
O	INCANDESCENT 14V AC/DC 40mA

### PBES16N NON-ILLUMINATED PUSHBUTTON EMERGENCY STOP SWITCH

Part Number  
PBES16N \_ O R E

Model No

PBES16N

Switch Function

4	000 + NC
5	1NC + 1NO
6	1NC + 1NC

Packaging

Blank	Standard package
E	Single Box

Actuator Color

R	Red
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Lamp Options

O	No Lamp
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# ALCOSWITCH Pushbutton Emergency Stop Switch

Illuminated and Non-Illuminated

## PART NUMBER LIST

### PBES16L EMERGENCY STOP SERIES

TE Smart Part Number	Function	Lamp Type	Product Description	TE Part Number
PBES16L1NR	000 + 1NC	INCANDESCENT 6VAC/DC 40mA	PBES16 28 INCA 6V AC/DC 40mA 000 1NC	2381880-1
PBES16L1HR		INCANDESCENT 6V AC/DC 200mA	PBES16 28 INCA 6V AC/DC 200mA 000 1NC	2381880-2
PBES16L1OR		INCANDESCENT 14V AC/DC 40mA	PBES16 28 INCA 14V AC/DC 40mA 000 1NC	2381880-3
PBES16L1IR		INCANDESCENT 14 V AC/DC 80mA	PBES16 28 INCA 14 V AC/DC 80mA 000 1NC	2381880-4
PBES16L1JR		INCANDESCENT 28V AC/DC 40mA	PBES16 28 INCA 28V AC/DC 40mA 000 1NC	2381880-5
PBES16L1MR		INCANDESCENT 33V AC/DC 35mA	PBES16 28 INCA 33V AC/DC 35mA 000 1NC	2381880-6
PBES16L1KR		INCANDESCENT 48V AC/DC 25mA	PBES16 28 INCA 48V AC/DC 25mA 000 1NC	2381880-7
PBES16L1LR		INCANDESCENT 60V AC/DC 20mA	PBES16 28 INCA 60V AC/DC 20 mA 000 1NC	2381880-8
PBES16L1AR		LED 6V DC 28mA	PBES16 28 LED 6V DC 28mA 000 1NC	2381880-9
PBES16L1BR		LED 12V DC 19mA	PBES16 28 LED 12V DC 19mA 000 1NC	1-2381880-0
PBES16L1DR		LED 12 to 24V AC/DC 11mA	PBES16 28 LED 12 to 24V AC/DC/11mA 000 1NC	1-2381880-1
PBES16L1CR		LED 24V DC 12mA	PBES16 28 LED 24V DC 12 mA 000 1NC	1-2381880-2
PBES16L2NR	1NC + 1NO	INCANDESCENT 6VAC/DC 40mA	PBES16 28 INCA 6VAC/DC 40mA 1NC 1NO	1-2381880-6
PBES16L2HR		INCANDESCENT 6V AC/DC 200mA	PBES16 28 INCA 6V AC/DC 200mA 1NC 1NO	1-2381880-7
PBES16L2OR		INCANDESCENT 14V AC/DC 40mA	PBES16 28 INCA 14V AC/DC 40mA 1NC 1NO	1-2381880-8
PBES16L2IR		INCANDESCENT 14 V AC/DC 80mA	PBES16 28 INCA 14 V AC/DC 80mA 1NC 1NO	1-2381880-9
PBES16L2JR		INCANDESCENT 28V AC/DC 40mA	PBES16 28 INCA 28V AC/DC 40mA 1NC 1NO	2-2381880-0
PBES16L2MR		INCANDESCENT 33V AC/DC 35mA	PBES16 28 INCA 33V AC/DC 35mA 1NC 1NO	2-2381880-1
PBES16L2KR		INCANDESCENT 48V AC/DC 25mA	PBES16 28 INCA 48V AC/DC 25mA 1NC 1NO	2-2381880-2
PBES16L2LR		INCANDESCENT 60V AC/DC 20mA	PBES16 28 INCA 60V AC/DC 20 mA 1NC 1NO	2-2381880-3
PBES16L2AR		LED 6V DC 28mA	PBES16 28 LED 6V DC 28mA 1NC 1NO	2-2381880-4
PBES16L2BR		LED 12V DC 19mA	PBES16 28 LED 12V DC 19mA 1NC 1NO	2-2381880-5
PBES16L2DR		LED 12 to 24V AC/DC 11mA	PBES16 28 LED 12 to 24V AC/DC/11mA 1NC 1NO	2-2381880-6
PBES16L2CR		LED 24V DC 12mA	PBES16 28 LED 24V DC 12 mA 1NC 1NO	2-2381880-7
PBES16L3NR	1NC + 1NC	INCANDESCENT 6VAC/DC 40mA	PBES16 28 INCA 6VAC/DC 40mA 1NC 1NC	3-2381880-1
PBES16L3HR		INCANDESCENT 6V AC/DC 200mA	PBES16 28 INCA 6V AC/DC 200mA 1NC 1NC	3-2381880-2
PBES16L3OR		INCANDESCENT 14V AC/DC 40mA	PBES16 28 INCA 14V AC/DC 40mA 1NC 1NC	3-2381880-3
PBES16L3IR		INCANDESCENT 14 V AC/DC 80mA	PBES16 28 INCA 14 V AC/DC 80mA 1NC 1NC	3-2381880-4
PBES16L3JR		INCANDESCENT 28V AC/DC 40mA	PBES16 28 INCA 28V AC/DC 40mA 1NC 1NC	3-2381880-5
PBES16L3MR		INCANDESCENT 33V AC/DC 35mA	PBES16 28 INCA 33V AC/DC 35mA 1NC 1NC	3-2381880-6
PBES16L3KR		INCANDESCENT 48V AC/DC 25mA	PBES16 28 INCA 48V AC/DC 25mA 1NC 1NC	3-2381880-7
PBES16L3LR		INCANDESCENT 60V AC/DC 20mA	PBES16 28 INCA 60V AC/DC 20 mA 1NC 1NC	3-2381880-8
PBES16L3AR		LED 6V DC 28mA	PBES16 28 LED 6V DC 28mA 1NC 1NC	3-2381880-9
PBES16L3BR		LED 12V DC 19mA	PBES16 28 LED 12V DC 19mA 1NC 1NC	4-2381880-0
PBES16L3DR		LED 12 to 24V AC/DC 11mA	PBES16 28 LED 12 to 24V AC/DC/11mA 1NC 1NC	4-2381880-1
PBES16L3CR		LED 24V DC 12mA	PBES16 28 LED 24V DC 12 mA 1NC 1NC	4-2381880-2
PBES16L10R	000 + 1NC	NO LAMP	PBES16 28 NO LAMP 000 1NC	4-2381880-6
PBES16L20R	1NC + 1NO	NO LAMP	PBES16 28 NO LAMP 1NC 1NO	4-2381880-7
PBES16L30R	1NC + 1NC	NO LAMP	PBES16 28 NO LAMP 1NC 1NC	4-2381880-8

## PBES16L EMERGENCY STOP SERIES

TE Smart Part Number	Function	Lamp Type	Product Description	TE Part Number
PBES16L1ARE	000 + 1NC	LED 6V DC 28mA	PBES16 28 LED 6V DC 28mA 000 1NC	2463582-1
PBES16L1BRE	000 + 1NC	LED 12V DC 19mA	PBES16 28 LED 12V DC 19mA 000 1NC	2463582-2
PBES16L1CRE	000 + 1NC	LED 24V DC 12mA	PBES16 28 LED 24V DC 12 mA 000 1NC	2463582-3
PBES16L2ORE	1NC + 1NO	NO LAMP	PBES16 28 NO LAMP 1NC 1NO	2463582-4
PBES16L3ORE	1NC + 1NC	NO LAMP	PBES16 28 NO LAMP 1NC 1NC	2463582-5
PBES16L1DRE	000 + 1NC	LED 12-24V AC/DC	PBES16 28 LED 12 to 24V AC/DC 11mA 000 1NC	2463582-6
PBES16L2DRE	1NC + 1NO	LED 12-24V AC/DC	PBES16 28 LED 12 to 24V AC/DC 11mA 1NC 1NO	2463582-7
PBES16L3DRE	1NC + 1NC	LED 12-24V AC/DC	PBES16 28 LED 12 to 24V AC/DC 11mA 1NC 1NC	2463582-8

## PBES16N EMERGENCY STOP SERIES

TE Smart Part Number	Function	Lamp Type	Product Description	TE Part Number
PBES16N40R	000 + 1NC	NO LAMP	PBES16 23.8 RB NO LAMP 000 1NC	2381881-1
PBES16N50R	1NC + 1NO	NO LAMP	PBES16 23.8 RB NO LAMP 1NC 1NO	2381881-2
PBES16N60R	1NC + 1NC	NO LAMP	PBES16 23.8 RB NO LAMP 1NC 1NC	2381881-3
PBES16N40RE	000 + 1NC	NO LAMP	PBES16 23.8 RB NO LAMP 000 1NC	2463583-1
PBES16N50RE	1NC + 1NO	NO LAMP	PBES16 23.8 RB NO LAMP 1NC 1NO	2463583-2
PBES16N60RE	1NC + 1NC	NO LAMP	PBES16 23.8 RB NO LAMP 1NC 1NC	2463583-3

### Notes:

1. Dimensions in millimetres unless otherwise specified.
2. Dimensions shown for reference purposes only. Specifications subject to change.
3. For email, phone or live chat, go to: [www.te.com/help](http://www.te.com/help)

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