



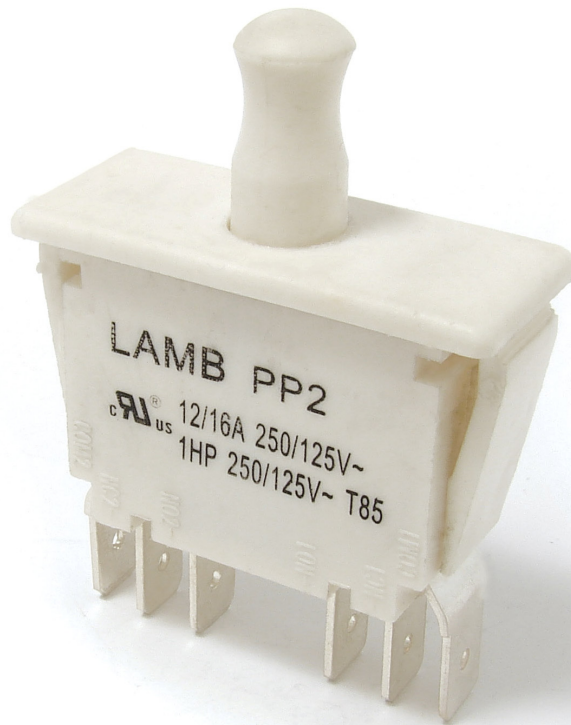
E-SWITCH®



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TECHNICAL SPECIFICATIONS

PP2 Series



**1.0 SCOPE**

This specification describes the operating parameters, testing requirements, approvals, materials, and part numbering for the PP2 Series including all suffixes.

2.0 CLASS

INTERLOCK PUSHBUTTON SWITCH, WITH DEFEAT: A pushbutton switch designed to disable an appliance when the access door is opened while in operation. The defeat mechanism allows normal operation when the access door is opened.

3.0 SERIES FEATURES

2 Pole, 2 Throw Functions
High Electrical Ratings
Panel Mounting
Optional Defeat Mechanism
Various Actuator and Terminal Styles

4.0 MODELS**4.1 PP2-1H7-xAx**

Function: 1 Pole ON-(ON), Without Defeat
Actuator: 21.7mm Straight, Short Body
Terminals: 4.8mm x 0.8mm Tab, Vertical

4.2 PP2-1H7-xDx

Function: 1 Pole ON-(ON), Without Defeat
Actuator: 11.4mm Short, Short Body
Terminals: 4.8mm x 0.8mm Tab, Vertical

4.3 PP2-1U7-xBx

Function: 1 Pole ON₂-ON₁-(ON₂), With Defeat
Actuator: 18.1mm with Finger Ridge, Short Body
Terminals: 4.8mm x 0.8mm Tab, Vertical

4.4 PP2-4H7-xAx

Function: 1 Pole ON-(ON), Without Defeat
Actuator: 21.7mm Straight, Short Body
Terminals: 6.3mm x 0.8mm Tab, Vertical

4.5 PP2-4U7-xBx

Function: 1 Pole ON₂-ON₁-(ON₂), With Defeat
Actuator: 18.1mm with Finger Ridge, Short Body
Terminals: 6.3mm x 0.8mm Tab, Vertical

4.6 PP2-4U7-xCx

Function: 1 Pole ON₂-ON₁-(ON₂), With Defeat
Actuator: 20.5mm with Finger Ridge, Long Body
Terminals: 6.3mm x 0.8mm Tab, Vertical

4.7 PP2-4H7-xDx

Function: 1 Pole ON-(ON), Without Defeat
Actuator: 11.4mm Short, Short Body
Terminals: 6.3mm x 0.8mm Tab, Vertical

5.0 SPECIFICATIONS**5.1 CONTACT RESISTANCE**

Requirements: 10mΩ Max.

5.2 INSULATION RESISTANCE

Requirements: 10MΩ Min.



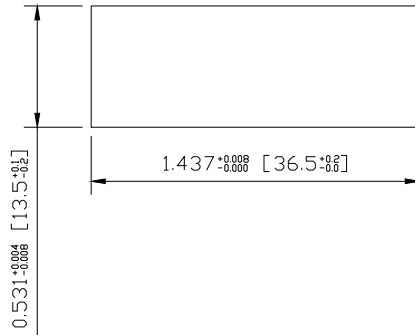
- 5.3 DIELECTRIC STRENGTH**
Requirements: 1500V for 1 Minute
- 5.4 OPERATING FORCE**
- 5.4.1 For PP2-1H7-xAx and PP2-4H7-xAx Models**
Requirements: 0.76±0.34lbf [0.34±0.15kgf]
- 5.4.2 For PP2-1U7-xBx and PP2-1U7-xBx Models**
Requirements: 0.72±0.34lbf [0.33±0.15kgf]
- 5.4.3 For PP2-4U7-xCx Model**
Requirements: 0.36±0.34lbf [0.16±0.15kgf]
- 5.4.4 For PP2-1H7-xDx and PP2-4H7-xDx Models**
Requirements: 1.08±0.34lbf [0.49±0.15kgf]
- 5.5 TRAVEL DISTANCE**
- 5.5.1 For PP2-1H7-xAx and PP2-4H7-xAx Models**
Requirements:
Operating: 0.146±0.031" [3.7±0.8mm]
Maximum Travel: 0.472±0.020" [12.0±0.5mm]
- 5.5.2 For PP2-1U7-xBx and PP2-4U7-xBx Models**
Requirements:
Pull: 0.224±0.020" [5.7±0.5mm]
Operating: 0.087±0.031" [2.2±0.8mm]
Maximum Travel: 0.185±0.020" [5.7±0.5mm]
- 5.5.3 For PP2-4U7-xCx Model**
Requirements:
Pull: 0.1±0.020" [3.8±0.5mm]
Operating: 0.095±0.031" [2.4±0.8mm]
Maximum Travel: 0.394±0.020" [10.0±0.5mm]
- 5.5.4 For PP2-1H7-xDx and PP2-4H7-xDx Models**
Requirements:
Operating: 0.102±0.031" [2.6±0.8mm]
Maximum Travel: 0.370±0.020" [9.4±0.5mm]
- 5.6 OPERATING LIFE**
Conditions: According to ANSI / UL 1054

Requirements: 6,000 Cycles
- 5.7 OPERATING TEMPERATURE RANGE**
Conditions: According to ANSI / UL 1054

Requirements: 0°C to 85°C
- 6.0 MISCELLANEOUS**
Refer to individual part number drawings for details per part number.
Specifications are subject to change without notice.
- 7.0 MOUNTING**
- 7.1 FRONT PANEL MOUNTING**
This mounting style is designed to quickly and easily snap into a hole in a panel from the front side.
The recommended hole size is shown below, but this can vary depending on the panel thickness and material. It is recommended to cut a test hole before final tooling.



7.1.1 Recommended Panel Cutout



7.1.2 Maximum Panel Thickness
0.079" [2.0mm]

8.0 STANDARDS COMPLIANCE

8.1 ANSI / UL 1054

Component Approval for the United States
Agency: Underwriters Laboratories
File Number: E194579
CCN: WOYR2
Marking:



8.1.1 All Models

Ratings: 16A 125VAC 50-60Hz 1HP
12A 250VAC 50-60Hz 1HP
Endurance: 6K
Temperature: 85°C
Poles: 2
Throws: 2
Circuit Code: -/
SPCOA: -

8.2 CAN / CSA C22.2 No. 55

Component Approval for the United States
Agency: Underwriters Laboratories
File Number: E194579
CCN: WOYR8
Marking:



8.2.1 All Models

Ratings: 16A 125VAC 50-60Hz 1HP
12A 250VAC 50-60Hz 1HP
Endurance: 6K
Temperature: 85°C
Poles: 2
Throws: 2
Circuit Code: -/
SPCOA: -

8.3 2002/95/EC Restriction of Hazardous Substances (RoHS)
Hazardous Materials Compliance for Europe



Agency: Self Certified

Marking:

RoHS
COMPLIANT

8.3.1 Substance Thresholds

By weight in homogenous materials:

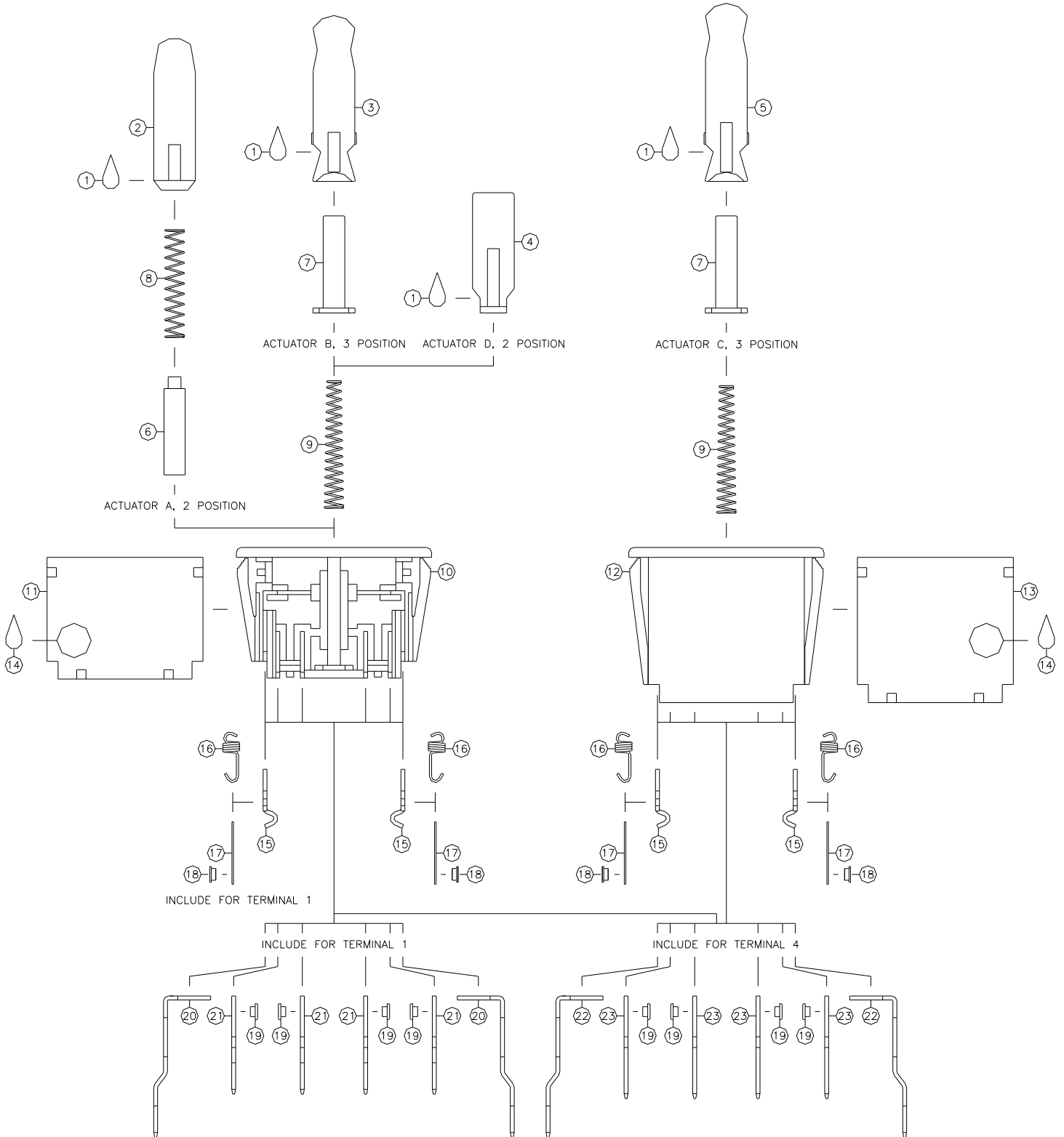
Lead	0.1%
Mercury	0.1%
Hexavalent Chromium	0.1%
Polybrominated Biphenyls	0.1%
Polybrominated Diphenyl Ethers	0.1%
Cadmium	0.01%

8.3.2 Exemptions Claimed

None



9.0 MATERIALS





- 9.1 GREASE**
RoHS Compliant

- 9.2 ACTUATOR A, FOR 2 POSITION**
- 9.3 ACTUATOR B, FOR 3 POSITION**
- 9.4 ACTUATOR D, FOR 2 POSITION**
- 9.5 ACTUATOR C, FOR 3 POSITION**
Type: Polyamide 6/6 (PA66)
RoHS Compliant

- 9.6 SPRING POST**
Type: Polyamide 6/6 (PA66)
RoHS Compliant

- 9.7 ACTUATOR SPRING**
Type: Steel (65Mn)
RoHS Compliant

- 9.8 BODY, SHORT, BACK SIDE**
- 9.9 BODY, SHORT, FRONT SIDE**
- 9.10 BODY, LONG, BACK SIDE**
- 9.11 BODY, LONG, FRONT SIDE**
Type: Polyamide 6/6 (PA66)
RoHS Compliant

- 9.12 MARKING INK**
RoHS Compliant

- 9.13 ACTUATION LEVER**
Type: Brass (H62)
RoHS Compliant

- 9.14 HOOK SPRING**
Type: Stainless Steel (1Cr13)
RoHS Compliant

- 9.15 MOBILE CONTACT BAR**
Type: Bronze (QSn6.5-0.1)
RoHS Compliant

- 9.16 MOBILE CONTACT PAD**
Type: Silver/Nickel (AgNi(10))
RoHS Compliant

- 9.17 STATIONARY CONTACT PADS**
Type: Silver/Nickel Clad Copper (AgNi(10)/Cu)
RoHS Compliant

- 9.18 COMMON TERMINAL 1**
- 9.19 NO/NC TERMINAL 1**
- 9.20 COMMON TERMINAL 4**
- 9.21 NO/NC TERMINAL 4**
Type: Brass (H62) / Silver Plated
RoHS Compliant



Part Numbering

Switch Series PP2 = Pushbutton Switch Push/Pull Capabilities, 2 Pole

Terminal Type

PP2	
1 = 4.8mm Tabs, Vertical	K
4 = 6.3mm Tabs, Vertical	K

Function

PP2	
H = On-(On)	K
U = On[1]-On[2]-(On[1])	K

Rating

PP2	
7 = 16A 125VAC, 12A 250VAC, 1HP 125/250V	K

Body Color

PP2	
1 = Black	K
2 = White	K

Actuator Height

PP2		
A = 21.7mm, Straight	K	<i>For H Function Only</i>
B = 18.13mm, With Finger Ridge	K	<i>For U Function Only</i>
C = 20.5mm, With Finger Ridge	K	<i>For U Function and 4 Terminals Only</i>
D = 11.4mm, Short	K	<i>For H Function</i>

Actuator Color

PP2	
2 = White	K

Example: PP2-1H7-2A2



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10.0 REVISION HISTORY

REV.	DATE	DESCRIPTION	PCR
A	Aug. 5, 2010	New Release	19238