



# SQUARE D Instruction Bulletin

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## 2- and 3-Pole Mechanically Held Panelboard Lighting Contactors Type PB, Series A Class 8903

### Introduction

The Class 8903 Type PBM (30 A), PBP (60 A), PBN (75 A), PBQ (100 A), PBR (150 A), PBV (200 A) and PBW (225 A) panelboard lighting contactors are electrically operated and mechanically held. The contactors are available in two- or three-pole versions. Coil clearing contacts isolate the solenoid from control power after operation of the contactor. Momentary or maintained energization of the latch or "C" circuit will close the contacts. Momentary or maintained energization of the unlatch or "O" circuit will open the contacts. This lighting contactor is not designed for rapid, repetitive operation. Consult Square D Company for alternative contactor choices if rapid operation is desired.

The Class 8903 Type PB lighting contactor fits in standard depth NQOD and NEHB Lighting Panelboards.

### Ratings

Please refer to the nameplate markings on this contactor to confirm that the electrical load contact ratings and operating coil voltages are correct for your application.

### Terminals\*

Power terminals on contactors are suitable for use with either copper or aluminum conductors. Refer to the device instruction sheet for recommended tightening torques. For further information on terminal wire sizes, contact your local Square D field office for Product Data SM845.

### Remote Operation

The Class 8903 Type PB lighting contactor is designed to be operated from a remote operating station. Table 1 lists the maximum one way distance allowed between the remote operating station and this contactor.

**Table 1 Maximum Control Distance**

Wire Gauge AWG	Distance (feet) Coil Voltage (60 Hz)				
	120 V	208 V	240 V	277 V	480 V
14	550	1650	2200	2925	8800
12	900	2700	3600	4700	14400
10	1425	4275	5700	7550	22800

Select the wire size indicated for the coil voltage marked on the nameplate and one that satisfies the distance requirement of the installation. If the installation distance is greater than provided for in this table or if for any reason the voltage drop at the coil terminals is over 15% of the control circuit voltage rating, use a control circuit relay (Form R6 or R62).


### Short Circuit Protection\*

Provide branch-circuit overcurrent protection for each contactor in accordance with the National Electric Code.

**Mounting**

This lighting contactor is available in both bus mount and panel mount versions. It can be mounted in any position if proper control voltage can be assured.

**Installation\***

 <b>DANGER</b>
<b>HAZARDOUS VOLTAGE.</b> <b>Electrical shock will cause severe injury or death.</b> <b>Disconnect all power before working on equipment.</b>

**Service Connections**

For bus mount devices, the bus bars provide mechanical and electrical connections. Panel mount devices are supplied with lugs (refer to terminals).


<b>NOTE</b>
<b>Panel mount devices must be mounted through the insulator bushings and backing insulator supplied.</b>

Prepare bus bar surfaces to insure good electrical contact. **Bus connection must be to copper bus only.** Tighten terminals while maintaining proper electrical clearance.

**Control Connections**

Control terminals are marked "L", "O" and "C" for Line, Open and Close. Insert appropriate control wires and tighten terminals. Apply power to the power and control circuits and check for proper system performance.

**Manual Operation\***

 <b>WARNING</b>
<b>UNINTENTIONAL OPERATION OF EQUIPMENT.</b> <b>Can cause severe personal injury or death.</b> <b>Disconnect all power before manual operation of this device.</b>

Manual operation is provided for maintenance purposes only. This may be accomplished by inserting a tool to rotate operator open or closed.

**Please Note:**

Electrical equipment should be serviced only by qualified electrical maintenance personnel, and this document should not be viewed as sufficient instruction for those who are not otherwise qualified to operate, service, or maintain the equipment discussed. Although reasonable care has been taken to provide accurate and authoritative information in this document, no responsibility is assumed by Square D for any consequences arising out of the use of this material.



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**Schneider Electric USA, Inc.**  
800 Federal Street  
Andover, MA 01810 USA  
888-778-2733  
[www.schneider-electric.us](http://www.schneider-electric.us)

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**Schneider Electric México, S.A. de C.V.**  
Av. Ejercito Nacional No. 904  
Col. Palmas, Polanco 11560 México, D.F.  
55-5804-5000  
[www.schneider-electric.com.mx](http://www.schneider-electric.com.mx)

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**Schneider Electric Canada, Inc.**  
5985 McLaughlin Road  
Mississauga, ON L5R 1B8 Canada  
800-565-6699  
[www.schneider-electric.ca](http://www.schneider-electric.ca)