

Instructions

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Push-Pull Operator
For Type 3, 4, 7, 9 Enclosures
Class 14, 18, 22, 40 & 51
Cat No 51PA3A2

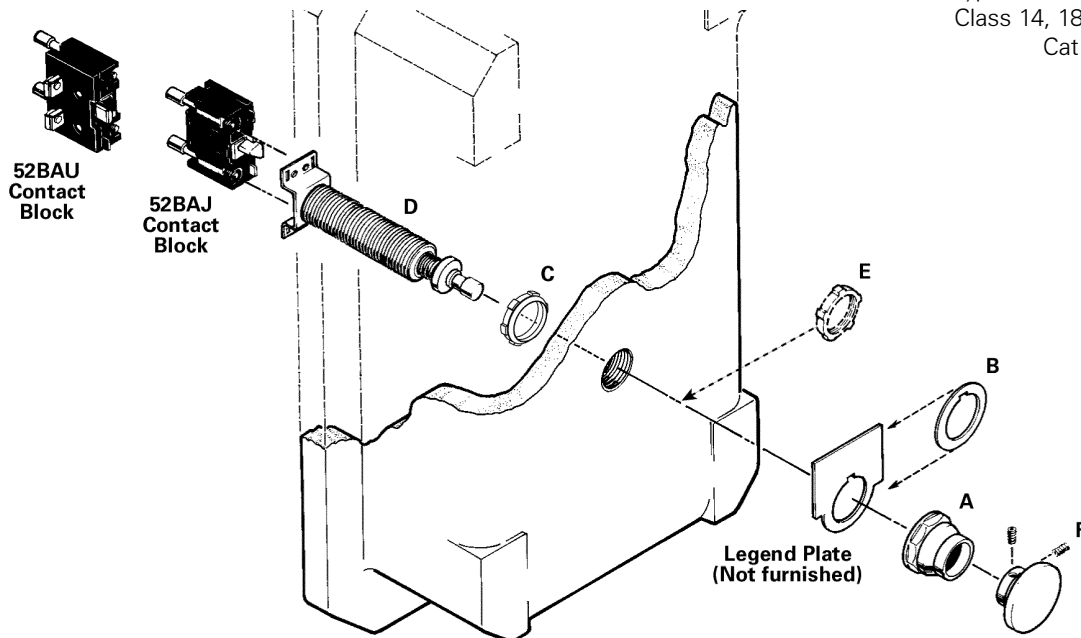


Figure 1

DESCRIPTION

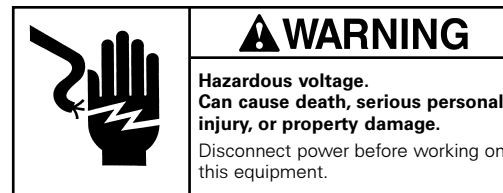
The Class 51 push-pull operator is a momentary operator with spring return from the push and pull positions to a neutral position. The actuator and the spring return mechanism for the pull position are contained in the operator bushing. The spring return mechanism for the push position is mounted on the operator bracket which accommodates up to four Furnas brand Class 52 contact blocks (NEMA A600 rating).

The operator is available in two bushing lengths, short or long. The short bushing is for use on an enclosure cover with maximum thickness of $\frac{7}{8}$ inch. The long bushing can be used on a standard enclosure with an additional front panel or on a very thick enclosure ($2\frac{1}{8}$ inch maximum cover thickness). A sealing lock nut and an octagonal lock nut secure the bushing in position. For long bushing installation in an enclosure and panel, an additional lock nut secures the bushing behind the panel.

Use with Type 3, 4, 7, 9 enclosures. When used in a Type 3 or 4 enclosure, mount on a flat surface.

Contents of kits with catalog number beginning with 51PA3A2:

- 1 **A** octagonal lock nut
- 1 **B** trim washer
- 1 **C** sealing lock nut
- 1 **D** operator assembly with two contact blocks (one 52BAJ, one 52BAU)
- 1 **E** plain lock nut for long bushing kits only
- 1 **F** mushroom head, with two set screws and $\frac{1}{16}$ inch Allen wrench



CONTACT BLOCK INSTALLATION

The push-pull operator is furnished with two factory assembled contact blocks. One or two additional contact block can be attached to the operator bracket before or after installing the push-pull operator. Mounting the contact blocks first avoids the problem of limited access in an enclosure. Check enclosure depth for adequate space and the $\frac{1}{2}$ inch air clear contact blocks can be attached to the operator bracket before or after installing the push button operator. Mounting the contact blocks first avoids the problem of limited access in an enclosure. Check enclosure depth for adequate space and the $\frac{1}{2}$ inch air clearance note in the warning. A typical three-wire control circuit is shown in Figure 2.

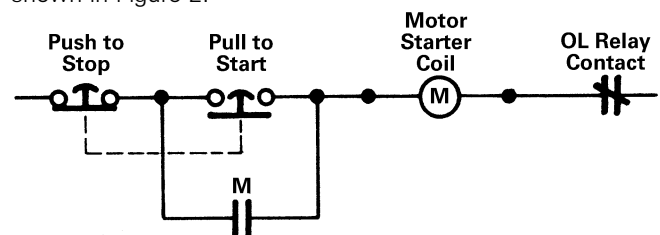



Figure 2

(For Engineering Reference Only - Rev. E)

CONTACT BLOCK INSTALLATION (Continued)

When adding contact blocks, observe the following:

1. For normally open contacts, the 52BAJ (normally closed) contact block is used. When mounted on this operator, the contact block becomes normally open.
2. For normally closed contacts, the special 52BAU contact block is used. This contact block must be mounted last.

	<p>WARNING</p>
	<p>Hazardous voltage. Can cause death, serious personal injury, or property damage. Maintain 1/2 inch minimum clearance through air between uninsulated live parts, such as contact block terminals, and enclosure.</p>

BUSHING INSTALLATION

1. Mount operators on 2 1/4 inch minimum centers.
2. On the enclosure panel or cover, drill and tap a 3/4 14NPSM-2A hole for each operator. The thickness of the enclosure panel must allow a 5-thread minimum engagement with the bushing.
3. For operators mounted near the edge of the enclosure panel, be sure to maintain 1/2 inch minimum air clearance between contact block terminals and enclosure wall.
4. Use the 1/16 inch Allen wrench to loosen the two set screws in the mushroom head **F** and remove the head from the actuator shaft.
5. Remove octagonal lock nut **A** and trim washer **B** from the assembly **D**.
6. Move sealing lock nut **C** to the rear of the bushing.
7. From inside the enclosure, install assembly **D** through a 3/4 inch 14NPSM tapped hole until the front of the bushing projects 5 or 6 threads from the front surface of the enclosure. If vertical alignment of the contact block terminals is desired, position the bushing with the contact block bracket as shown in Figure 1.
8. Place trim washer **B**, or the legend plate (optional), and lock nut **A** on the projecting bushing. Align the legend plate as desired. Tighten the lock nut securely.
Note: When the legend plate is used, discard trim washer **B**.
9. To secure the operator in position, tighten the sealing lock nut **C** securely against the enclosure.
10. Install mushroom head **F** on the actuator shaft and tighten set screws securely.

Using wrench catalog number 52MAWA or 52MAWB facilitates assembly and prevents scoring of the octagonal lock nut **A**; however, neither tool is required for installation.

When the long bushing operator is used on a very thick enclosure, follow the instructions for short bushing installation, discarding plain lock nut **E**.

For an enclosure with panel mounting, observe the following mounting dimensions:

1. On the graphics panel, drill a 1 1/32 inch diameter minimum clearance hole in line with the tapped hole for each operator.
2. When installing assembly **D**, include lock nut **E** and front panel as shown in Figure 3.

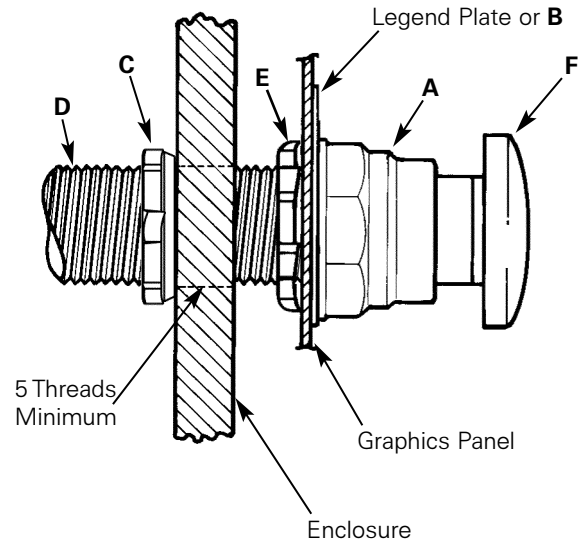


Figure 3