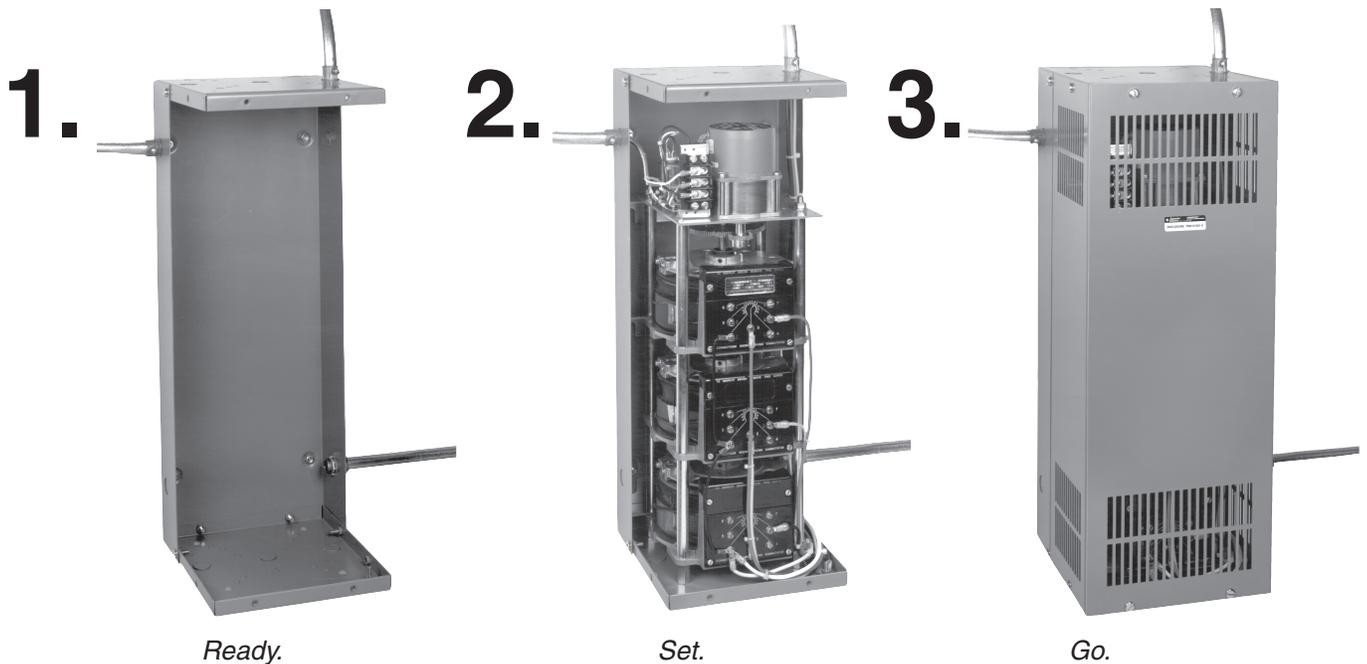


Installation Instructions for PBA10 Series POWERSTAT® Variable Transformer Enclosures

Back-Of-Panel Mounting

Bench or Wall Mounting

Installation is easy as 1-2-3 . . .



INSPECTION

Examine the Enclosure carefully for shipping damage or for missing parts. The "Damage and Shortage" instructions packed with the unit outline the procedures to follow if any parts are damaged or missing. In addition to the POWERSTAT Enclosure, a hardware pack which contains all hardware needed to mount the POWERSTAT Variable Transformer inside the Enclosure is supplied.

<u>Enclosure</u>	<u>Hardware Pack Number</u>
PBA10-N01-1	212293-001
PBA10-N01-2	212293-002
PBA10-N01-3	212293-002
PBA10-N01-4	212293-002

Hardware Pack 212293-001 contains the following items:

<u>Quantity</u>	<u>Description</u>	<u>Part Number</u>
4	Split Lock Washer, 1/4"	203604-112-AC
4	Flat Washer, 1/4"	203601-112-AB
4	Nut, 1/4"-20	203600-110-AB
1	Internal Tooth Lock Washer, #8	203603-108-AC
1	Split Lock Washer	203604-108-AC
1	Flat Lock Washer, #8	203601-108-AB
1	Nut, #8-32	203600-106-AB

Hardware Pack 212293-002 contains all items listed for Hardware Pack 212293-001, plus the following items:

<u>Quantity</u>	<u>Description</u>	<u>Part Number</u>
2	Cover Plate	212180-001-PA
8	Screw, #10-16 x 3/8" Long	203509-229-AB
8	Lock Washer, #10	203603-110-AC

DESCRIPTION

PBA10 Series Enclosures are for use with manual and motor-driven, single-, two- and three-gang POWERSTAT Variable Transformers of the 21, 21-40, 22, 116CU, 116CU-40, 117CU, 216CU and 217CU Series. Four Enclosures are available for use as indicated in the following charts.

MANUALLY OPERATED MODELS

Series	Ganged Assemblies	POWERSTAT Variable Transformer Type	Enclosure Type
21 & 22	1	21, 22, 21-40	PBA10-N01-1
	2	21-2, 22-2, 21-40-2	PBA10-N01-2
	3	21-3, 22-3, 21-40-3	PBA10-N01-3
116C & 117C	1	116CU, 117CU, 116CU-40	PBA10-N01-1
	2	116CU-2, 117CU-2, 116CU-40-2	PBA10-N01-2
	3	116CU-3, 117CU-3, 116CU-40-3	PBA10-N01-3
216C & 217C	1	216CU, 217CU	PBA10-N01-1
	2	216CU-2, 217CU-2	PBA10-N01-2
	3	216CU-3, 217CU-3	PBA10-N01-3

MOTOR-DRIVEN MODELS

Series	Ganged Assemblies	POWERSTAT Variable Transformer Type	Enclosure Type
21 & 22	1	M/ME21, M/ME22, M/ME21-40	PBA10-N01-2
	2	M/ME21-2, M/ME22-2, M/ME21-40-2	PBA10-N01-3
	3	M/ME21-3, M/ME22-3, M/ME21-40-3	PBA10-N01-4

PBA10 Series Enclosures are designed for use with open construction (suffix U) POWERSTAT Variable Transformers. They are constructed of heavy gauge sheet metal and are supplied completely assembled. The Enclosures have a full range of knockouts for wire entry and exit and are supplied with all necessary mounting hardware provided.

A PBA10 Enclosure is a NEMA Type 1 Enclosure as defined in NEMA Standard 250. It is designed to protect personnel from accidental contact with the enclosed POWERSTAT Variable Transformer.

PBA10 Series Enclosures are intended for use indoors in areas where unusual service conditions do not exist. They are designed for wall or bench mounting and provide the ventilation needed to allow the enclosed POWERSTAT Variable Transformer to operate at its maximum rating.

The Enclosures are supplied with covers which may be placed over the ventilation openings for additional protection from dust or chemicals in the atmosphere. Screws and lock washers are supplied for mounting the cover plates on the Enclosure. The plates should be mounted **inside** the Enclosure so that the ends of the mounting screws project inside.

CAUTION:

These Enclosures have been designed and tested to provide the ventilation needed to permit operation of the POWERSTAT Variable Transformer at its full rating, with the following exceptions.

The cover plates supplied with the PBA10-N01-2, PBA10-N01-3 and PBA10-N01-4 may be placed over the ventilation openings to provide greater protection. When these cover plates are installed, the current rating of the enclosed POWERSTAT unit must be derated by 15%. Due to the cooling provided by bolting a single gang, manually operated POWERSTAT Variable Transformer directly to the PBA10-N01-1 Enclosure, the POWERSTAT unit may be operated at its full rating, even with the ventilation covers in place.

All 21 Series POWERSTAT Variable Transformers must be derated an additional 15% when operated in a PBA Enclosure.

When ambient temperature exceeds 40°C, the current rating of the POWERSTAT unit must be further reduced as shown in the curve found in the instruction manual for your POWERSTAT model.

MOUNTING

The Enclosures have mounting pads on the rear for mounting against a flat surface. Enclosures for single-deck manually operated variable transformers also have mounting pads on the base of the unit for use when back-of-panel mounting is required. Follow these steps to mount the Enclosure.

Back-Of-Panel Mounting, Manually Operated Single-Gang Units of the 21-40, 21 and 22 Series

1. Remove the four screws that hold the front cover of the Enclosure in place and remove the front cover.
2. On the Enclosure end which does not have mounting pads, remove the knockouts for the center shaft and the four mounting bolts. Hold the Enclosure in position and mark the locations of the four mounting holes and the center shaft hole on the panel.
3. Drill the center hole to provide clearance for the 3/8" diameter shaft of the POWERSTAT Variable Transformer. Drill the four mounting holes to provide clearance for 1/4" diameter mounting screws.
4. Using the template provided with the POWERSTAT Variable Transformer instruction sheet, locate and drill the three dial mounting screw holes in the panel.
5. Remove the knob and the dial from the POWERSTAT assembly. Mount the dial on the panel using the same screws.

Obtain four 1/4" diameter screws that are 7/8" long plus the thickness of the panel. Insert the screws through the panel so that they project behind the panel. Install 1/4" diameter lock washers and nuts and tighten securely.

6. Hold the Enclosure in place behind the panel so that the mounting screws extend through the mounting holes in the Enclosure. Place the POWERSTAT assembly in position inside the Enclosure so that the mounting screws extend through its mounting holes. **BE SURE TO POSITION THE ASSEMBLY SO THAT THE TERMINAL PANEL IS ACCESSIBLE.** Install suitable 1/4" diameter lock washers and nuts and tighten securely.
7. Loosen the setscrews in the base of the variable transformer radiator and adjust the shaft so it projects through the panel about 3/4". Tighten the setscrews. Install the knob on the shaft with its pointer aligned with the dial markings. Tighten the knob setscrews.
8. Complete all wiring to the POWERSTAT Variable Transformer before replacing the front cover of the Enclosure. A grounding stud is provided in the Enclosure and hardware for this stud has been supplied. Several knockouts are provided in the Enclosure for wire entry and exit.

Back-Of-Panel Mounting, Manually Operated Single-Gang Units of the 116CU-40, 116CU, 117CU, 216CU and 217CU Series

1. Remove the four screws that hold the front cover of the Enclosure in place and remove the front cover.
2. Remove the center knockout from the Enclosure end which has the mounting pads. Hold the Enclosure in position and mark the locations of the center knockout and the four mounting pad holes on the mounting panel.
3. Drill the center hole to provide clearance for the 3/8" diameter shaft of the POWERSTAT Variable Transformer. Drill the four mounting holes to provide clearance for 1/4" diameter mounting screws.
4. Hold the Enclosure in position and install 1/4" diameter mounting hardware. Tighten securely.
5. Using the template provided with the POWERSTAT Variable Transformer instruction sheet, locate and drill the three dial mounting screw holes in the panel.
6. Remove the knob and dial from the POWERSTAT Variable Transformer. Place the POWERSTAT assembly in position in the Enclosure so that the center shaft extends through the hole provided and the mounting studs in the Enclosure project through mounting holes in the variable transformer. **BE SURE TO POSITION THE ASSEMBLY SO THAT THE TERMINAL PANEL IS ACCESSIBLE.**
7. Install a 1/4" flat washer, a 1/4" split lock washer and a 1/4"-20 nut (supplied) on each mounting stud. Tighten all four nuts.
8. Complete the mechanical installation by installing the dial and the knob as described in the instructions for the POWERSTAT Variable Transformer.
9. Complete all wiring to the POWERSTAT Variable Transformer before replacing the front cover. A grounding stud is provided in the Enclosure and hardware for this stud has been included. Several knockouts are provided in the Enclosure for wire entry and exit.

Back-Of-Panel Mounting, Manually Operated Ganged Assemblies of the 21-40, 21 and 22 Series

1. Remove the four screws that hold the front cover of the Enclosure in place and remove the front cover.
2. Find the end of the Enclosure that has the mounting hole knockouts which match the mounting holes on the POWERSTAT Variable Transformer. When the correct end has been selected, remove the four mounting hole knockouts and the center shaft hole knockout.
3. Ideally, the Enclosure should lay flat against the bottom of the chassis to provide support for the entire length of the assembly. If this is not possible, it will be necessary to provide a support for the end of the assembly. Once the mounting location has been determined, use Template No. 1 from the variable transformer instruction sheet to locate and drill the center shaft hole, the four mounting bolt holes and the three dial mounting screw holes in the mounting panel.
4. Install four 1/4" diameter mounting screws from the front of the panel so that they project behind the panel. The screws must be long enough to extend through the mounting holes on the Enclosure and the POWERSTAT Variable Transformer and allow lock washers and nuts to be fastened to them.
5. Hold the Enclosure in place behind the panel so that the mounting screws extend through the mounting holes in the Enclosure. Place the POWERSTAT assembly in position inside the Enclosure so that the mounting screws extend through its mounting holes. **BE SURE TO POSITION THE ASSEMBLY SO THAT THE TERMINAL PANEL IS ACCESSIBLE.**
6. Install a lock washer and nut on each mounting screw and tighten securely. Mount the dial on the front of the panel with the three screws provided. Install the knob on the variable transformer center shaft. Be sure the knob pointer is aligned correctly with the dial markings.
7. Complete all wiring to the POWERSTAT Variable Transformer before replacing the front cover. A grounding stud is provided in the Enclosure and hardware for this stud is supplied. Several knockouts are provided in the Enclosure for wire entry and exit.

Back-Of-Panel Mounting, Manually Operated Ganged Assemblies of the 116CU-40, 116CU, 117CU, 216CU and 217CU Series

1. Remove the four screws that hold the front cover of the Enclosure in place and remove the front cover.
2. Find the end of the Enclosure that has four predrilled clearance holes for 1/4" diameter mounting screws. Remove the center knockout to provide clearance for the center shaft of the POWERSTAT assembly.
3. Ideally, the Enclosure should lay flat against the bottom of the chassis to provide support for the entire length of the assembly. If this is not possible, it will be necessary to provide a support for the end of the assembly. Once the mounting location has been determined, use Template No. 1 from the variable transformer instruction sheet to locate and drill the center shaft hole, the four mounting bolt holes and the three dial mounting screw holes in the mounting panel. Drill the holes according to the specifications given on the mounting template.
4. Remove the knob and the dial from the POWERSTAT assembly. Mount the dial on the front panel using the three screws provided. Place the POWERSTAT assembly in position inside the Enclosure so that its shaft extends through the center hole in the end of the Enclosure and the mounting studs inside the Enclosure fit through the holes on the mounting brackets of the POWERSTAT unit. Install the 1/4" flat washers, lock washers and nuts on the mounting studs and tighten them.
5. Place the assembly in position. Insert 1/4"-28 mounting screws (not supplied) through the end panel of the Enclosure. Screw them into the standoffs on the end of the POWERSTAT assembly and tighten them securely. Install the knob on the shaft with its pointer correctly aligned with the markings on the dial.
6. Complete all wiring to the POWERSTAT Variable Transformer before replacing the front cover. A grounding stud is provided in the Enclosure and hardware for this stud is supplied. Several knockouts are provided in the Enclosure for wire entry and exit.

Bench or Wall Mounting, Manually Operated Single-Gang Units of the 21-40, 21 and 22 Series

1. Remove the four screws that hold the front cover of the Enclosure in place and remove the front cover.
2. Hold the Enclosure in position and mark the location of the mounting holes located in the mounting pads. Either set of mounting pads can be used.
3. The holes in the mounting pads provide clearance for 1/4" diameter bolts. Depending on the mounting method to be used, either drill through-holes in the mounting surface for 1/4" diameter bolts or drill and tap for 1/4" diameter mounting screws.
4. In the end which does not have mounting pads, remove the knockouts for the center shaft hole and the four mounting bolt holes. Remove the knob and the dial from the variable transformer and fasten the dial to the Enclosure using the mounting screws provided.
5. Mount the Enclosure by inserting suitable 1/4" diameter bolts or screws through the mounting pads and then through the holes drilled in step 3. Tighten securely.
6. Place the POWERSTAT assembly in the Enclosure so that its center shaft projects through the appropriate hole in the Enclosure and its mounting bolt holes are aligned with those in the Enclosure. Install four suitable 1/4" diameter mounting bolts, flat washers, lock washers and nuts. Tighten securely.

Mount the knob on the variable transformer shaft. Be sure its pointer is aligned correctly with the markings on the dial.

7. Complete all wiring to the variable transformer before replacing the front cover. A grounding stud has been provided. Several knockouts are provided in the Enclosure for wire entry and exit.

Bench or Wall Mounting, Manually Operated Single-Gang Units of the 116CU-40, 116CU, 117CU, 216CU and 217CU Series

1. Remove the four screws that hold the front cover of the Enclosure in place and remove the front cover.
2. Hold the Enclosure in position and mark the location of the mounting holes which are in the mounting pads. Either set of mounting pads can be used.
3. The holes in the mounting pads provide clearance for 1/4" diameter bolts. Depending on the mounting method to be used, either drill through-holes in the mounting surface for 1/4" diameter bolts or drill and tap for 1/4" diameter mounting screws.
4. Remove the knockout provided for shaft clearance in the end which does not have mounting pads. Remove the knob and the dial from the POWERSTAT Variable Transformer. Loosen the shaft setscrews in the insulator of the radiator and slide the shaft through so it projects from the other end of the assembly. Tighten the setscrews.
5. Place the variable transformer in the Enclosure so that the shaft projects through the hole in the Enclosure and the studs on the opposite end of the Enclosure project through the mounting holes on the variable transformer. **BE SURE THAT THE TERMINAL PANEL IS LOCATED SO THAT IT IS ACCESSIBLE FROM THE FRONT OF THE ENCLOSURE.** Install the 1/4" flat washers, lock washers and nuts on the studs and tighten them securely.
6. Mount the dial on the end of the Enclosure. Attach the knob with its pointer aligned correctly with respect to the variable transformer brush position and the dial indications. Tighten the knob setscrews.
7. Complete all wiring to the POWERSTAT Variable Transformer before replacing the front cover. A grounding stud is provided in the Enclosure and hardware for this stud has been included. Several knockouts are provided in the Enclosure for wire entry and exit.

Bench or Wall Mounting, Manually Operated Ganged Assemblies of the 21-40, 21 and 22 Series

1. Remove the four screws that hold the front cover of the Enclosure in place and remove the front cover.
2. Hold the Enclosure in the desired location and mark the locations of the holes in the Enclosure mounting pads. Depending on the mounting method to be used, either drill clearance holes for 1/4" diameter mounting bolts or drill and tap for 1/4" diameter mounting screws.
3. Fasten the Enclosure to the mounting surface using suitable mounting hardware.
4. Remove the center knockout and the four mounting hole knockouts from the end of the Enclosure that has the three predrilled holes for mounting the dial. Place the POWERSTAT Variable Transformer inside the Enclosure so that its shaft projects through the center hole in the end of the Enclosure. Install suitable 1/4"-28 mounting screws and lock washers through the mounting holes in the Enclosure and into the standoffs on the POWERSTAT assembly. **BE SURE THAT THE ASSEMBLY IS POSITIONED SO THAT THE TERMINAL PANEL IS ACCESSIBLE.**
5. Mount the dial on the end of the Enclosure. Attach the knob to the shaft with its pointer aligned correctly with respect to the POWERSTAT brush position and the dial indications.
6. Place the Enclosure in position. Insert and tighten suitable 1/4" diameter mounting hardware.
7. Complete all wiring to the POWERSTAT Variable Transformer before replacing the front cover. A grounding stud has been provided in the Enclosure and hardware for this stud is supplied. Several knockouts are provided in the Enclosure for wire entry and exit.

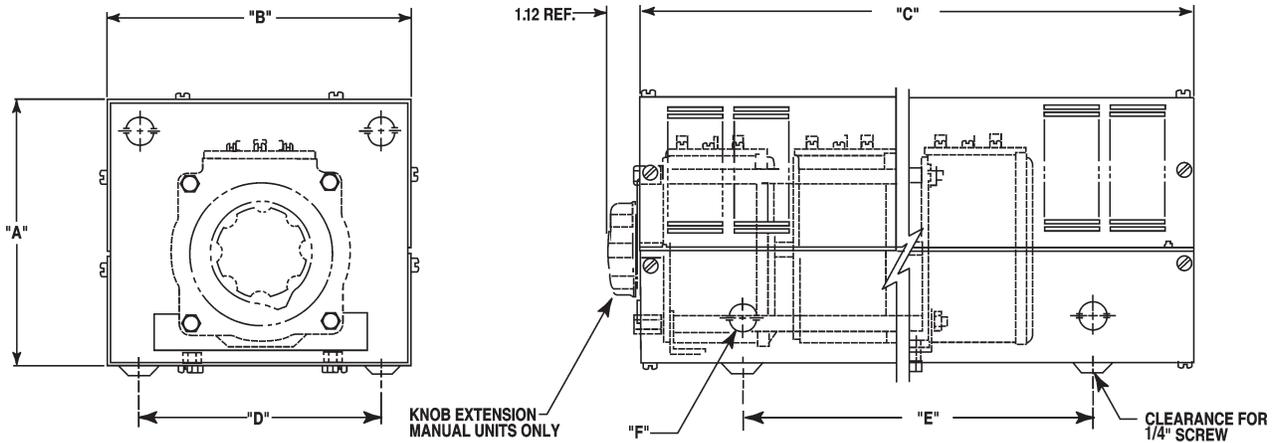
Bench or Wall Mounting, Manually Operated Ganged Assemblies of the 116CU-40, 116CU, 117CU, 216CU and 217CU Series

1. Remove the four screws that hold the front cover of the Enclosure in place and remove the front cover.
2. Hold the Enclosure in the desired location and mark the locations of the holes in the Enclosure mounting pads. Depending on the mounting method to be used, either drill clearance holes for 1/4" diameter bolts in the mounting surface or drill and tap for 1/4" diameter mounting screws.
3. Fasten the Enclosure to the mounting surface using suitable mounting hardware.
4. Remove the center knockout from the end of the Enclosure that has three predrilled holes for mounting the dial. Loosen the shaft setscrew located in the insulator of each radiator of the variable transformer and slide the shaft through so that it projects from the other end of the POWERSTAT assembly. Be sure the brushes are all in alignment before tightening the shaft setscrews.
5. Place the POWERSTAT assembly inside the Enclosure so that the shaft extends through the clearance hole in the end of the Enclosure and the mounting studs inside the Enclosure fit through the holes in the mounting brackets on the side of the POWERSTAT assembly. Install the 1/4" flat washers, lock washers and nuts (supplied) on the mounting studs and tighten them securely.
6. Mount the dial on the end of the Enclosure. Attach the knob to the shaft. Be sure its pointer is aligned correctly with respect to the POWERSTAT brush position and the dial indications.
7. Complete all wiring to the POWERSTAT Variable Transformer before replacing the front cover. A grounding stud is provided in the Enclosure and hardware for this stud is supplied. Several knockouts are provided in the Enclosure for wire entry and exit.

Bench or Wall Mounting, All Motor Driven Models

1. Remove the four screws that hold the front cover of the Enclosure in place and remove the front cover.
2. Place the Enclosure in the desired mounting location and mark the locations of the holes in the Enclosure mounting pads. Depending on the mounting method to be used, either drill clearance holes for 1/4" diameter bolts or drill and tap for 1/4" diameter mounting screws.
3. Position the POWERSTAT assembly inside the Enclosure so that the mounting studs fit through the holes in the mounting brackets on the side of the POWERSTAT assembly. Install the 1/4" flat washers, lock washers and nuts (supplied) on the mounting studs and tighten them.
4. Place the entire assembly in position. Install and tighten suitable mounting hardware.
5. Complete all wiring to the POWERSTAT Variable Transformer before replacing the front panel. A grounding stud is provided in the Enclosure and hardware for this stud is supplied. Several knockouts are provided in the Enclosure for wire entry and exit.

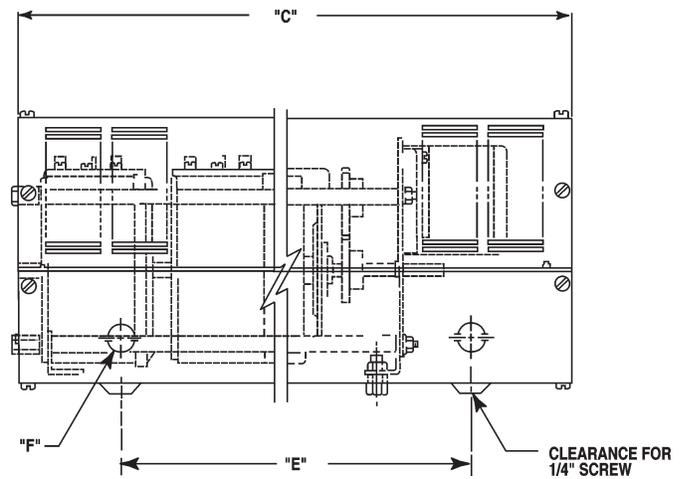
Dimensions



Manually Operated

Connectric Knockouts "F"

Type	Quantity	Diameter: Inches (Millimeters)
PBA10-N01-1	12	.88 (22.3)
PBA10-N01-2	14	
PBA10-N01-3	14	
PBA10-N01-4	14	



Motor Driven

Type	Dimensions				
	"A"	"B"	"C"	"D"	"E"
PBA10-N01-1	7.00 (177.80)	8.00 (203.20)	6.00 (152.40)	6.25 (158.75)	4.00 (101.60)
PBA10-N01-2	7.00 (177.80)	8.00 (203.20)	13.00 (330.20)	6.25 (158.75)	9.00 (228.60)
PBA10-N01-3	7.00 (177.80)	8.00 (203.20)	18.00 (457.20)	6.25 (158.75)	14.00 (355.60)
PBA10-N01-4	7.00 (177.80)	8.00 (203.20)	25.00 (635.00)	6.25 (158.75)	21.00 (533.40)



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