

GEH6503 Installation Instructions

Power Break II Circuit Breakers in NEMA 1 Enclosures

800,1600, and 2000 Amperes

Introduction

These instructions describe the installation of 800, 1600, and 2000 ampere frame-size Power Break® II insulated-case circuit breakers in NEMA 1 enclosures, illustrated in Figure 1. Table 1 lists the catalog numbers of the enclosures and the corresponding field-installed neutrals for the various breaker frame sizes.

Enclosure Catalog Number	Circuit Breaker	
	Envelope Size	Neutral Catalog Number
SPB08W	800 A	TNT800
SPB16W	1600 A	TNT1600
SPB20W	2000 A	TNT2000

Table 1. Catalog numbers of enclosures and field-installed neutrals for Power Break II circuit breakers.

Conduit Openings

1. Conduit openings in the top and/ or bottom end walls should be completed before the enclosure is mounted to the wall.
2. It may be easier to remove the enclosure end walls to make the conduit openings. Remove the door hinge screws and then detach the door.
3. Remove either the top or bottom end wall, but not both, since side wall stability would be greatly reduced. Make the conduit openings in the removed end wall. Replace the end wall. Ensure that all mounting screws are replaced and tight-ened to 40-50 lb-in torque.
4. If required, remove the other end wall, make the conduit openings, and replace the end wall, as in step 3.
5. For easier cable and device installation, do not reattach the door until installation is complete.



Figure 1. 2000 ampere enclosure, catalog number SPB20W.

Enclosure Wall Mounting

NOTE:The enclosure weighs approximately 270 -285 pounds and must be adequately supported. All six mounting holes must be used. Weights and mounting dimensions are given in Table2.

1. Lifting plates are attached to the inside of the enclosure near the top for shipping. Remove the two lifting plates and reattach them to the outside of the enclosure side walls, as shown in Figures 2 and 3.
2. Remove the two enclosure mounting plates from the enclosure and reattach them to the outside of the rear wall, one at the top and one at the bottom, as shown in Figures 2 and 3, using the same screws, washers, and nuts. Key-slotted holes are on 12-inch centers.
3. Use 3/8-inch diameter bolts (not provided) to mount the enclosure to the wall.

Catalog No.	Dimensions (in)				Weight (lb)
	H	w	D	C	
SPB08W	51.5	29.5	14.5	53.5	270
SPB16W	86	39	14.5	88	485
SPB20W					

Table2. Enclosure dimensions and weight

Circuit Breaker Installation

The circuit breaker is best installed after the line, load, and neutral cables have been terminated within the enclosure. (The breaker may be installed before pulling and terminating the cables, but it is easier to install cable without the breaker in place.)

1. Observing correct line-end orientation, hang the circuit breaker from the 1;2-13 threaded studs on the center mounting pads.
2. Assemble a flat washer, Belleville conical washer, and nut over each stud, but do not tighten them at this time.
3. Lineup the remaining circuit breaker terminal holes with the tapped holes in the remaining mounting pads. Insert the 1/2-13 hex-head bolts with flat and conical washers into the tapped holes in the mounting pads.
4. Tighten all terminal bolts and nuts to 300-400 lb-in (25-33 lb-ft) torque.

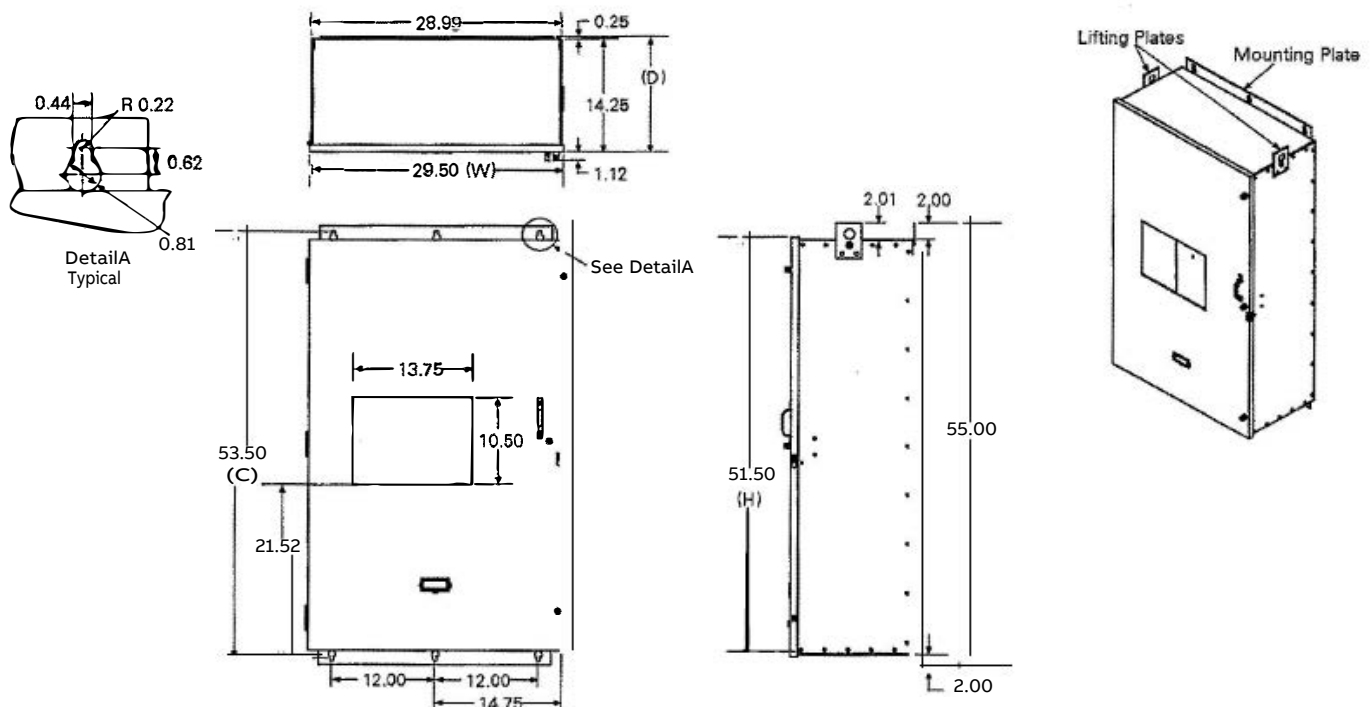


Figure2. Dimensions of 800A Enclosure.

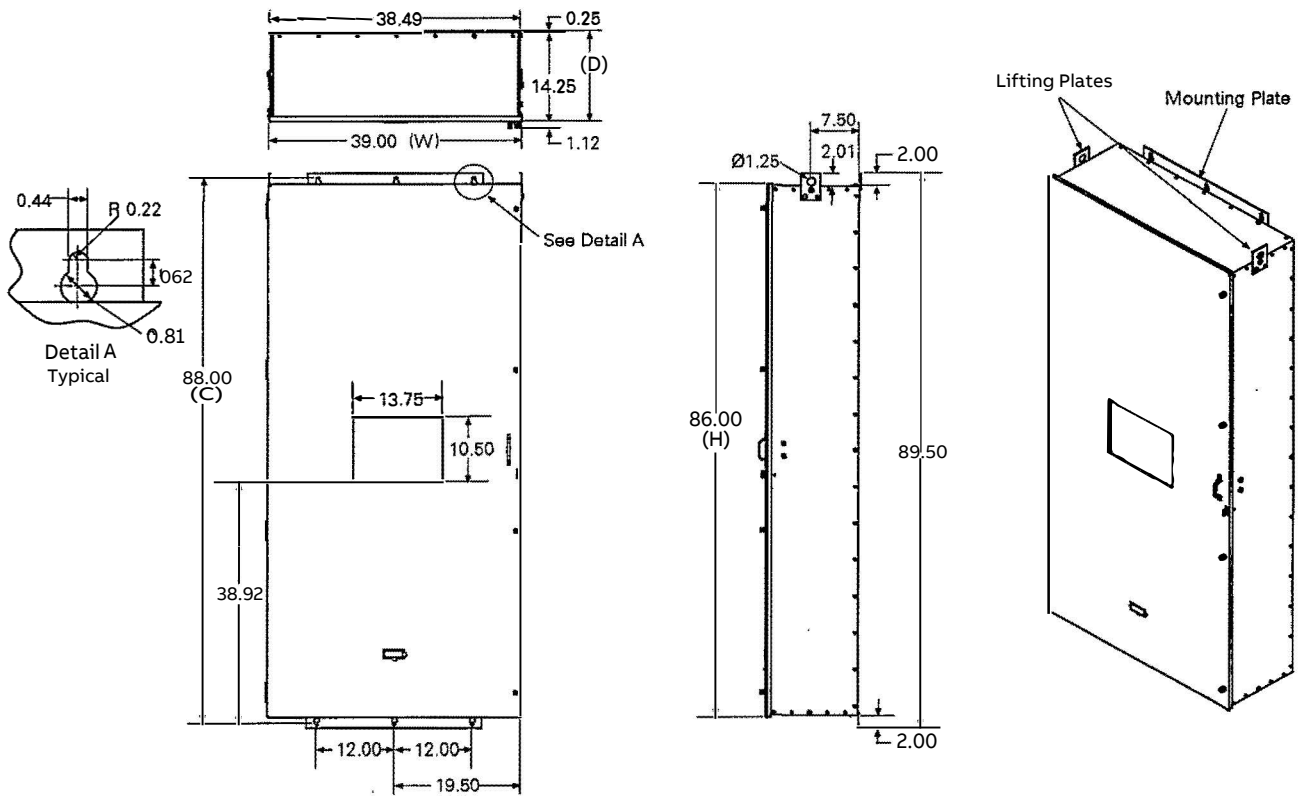


Figure 3. Dimensions of 1600-2000A Enclosures.

Final Installation Checks

1. Check all cable-to-lug connections. Tighten each lug screw to the torque range specified in Table 3 for the "across-flats" dimension of the screw, as shown in Fig 4.
2. Check all bolts and nuts securing the lugs to the straps and the straps to the breaker pad. Tighten these 1/2-inch-diameter bolts to a torque of 300- 400 lb-in (25-33 lb-ft).
3. If equipment ground-fault protection is provided and a neutral current transformer (CT) is provided, connect the neutral CT line side to the line side of the neutral, as illustrated in Figure 5 and on the rating label on the enclosure door.
4. If the breaker is being used as service equipment, bond the neutral to the enclosure on the line side using the bonding strap provided with the neutral kit. Attach the "Service Disconnect" label provided to the outside of the door near the operating handle. (Discard the label if the breaker is not being used as service equipment.)
5. Breakers with integral ground-fault protection must be checked in accordance with Art. 230- 95(c) of the 1993 National Electrical Code, if the approving authority so requires. Refer to instructions packaged with the enclosure.
6. Reattach the enclosure door if this was not done previously.

Dimension A (in)	Torque (lb-in)
3/16	100-120
7/32	120-150
1/4	150-200
5/16	225-275
3/8	300-375

Table 3. Tightening torque for lug screws according to the "across-flats" dimension.

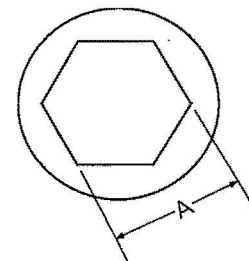


Figure 4. Across-flats dimension (A) on lug screws.

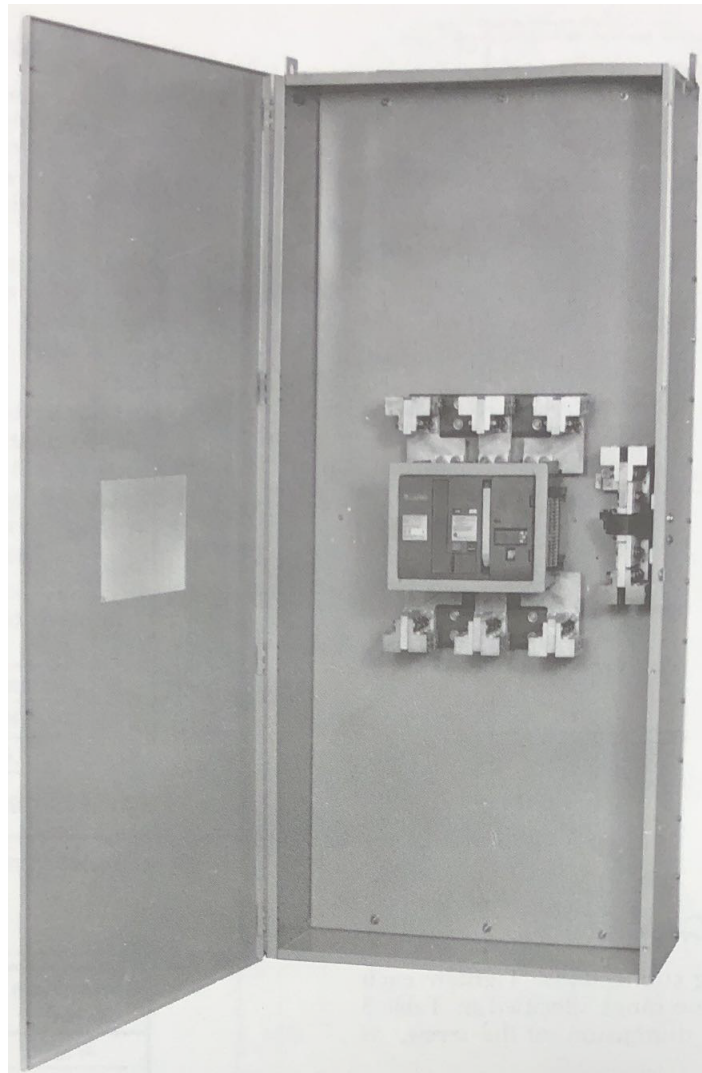


Figure 5. Enclosure interior, showing installation of circuit breaker and field-installed neutral.

These instructions do not cover all details or variations in equipment nor do they provide for every possible contingency that may be met in connection with installation, operation, or maintenance. Should further information be desired or should particular problems arise that are not covered sufficiently for the purchaser's purposes, the matter should be referred to the ABB Company.