

GEH6460 INSTRUCTIONS

Power Break II Circuit Breaker Accessories

Draw-Out Substructure Secondary Disconnect Kit

Introduction

The Draw-Out Secondary Disconnect Kit can be installed in 800-4000 ampere Power Break® II Substructures. The catalog number is SPDOSD36S.

The kit consists of a single 36-position plug style secondary disconnect block, shown in Figure 1, that may be assembled to either side wall of a Power Break II substructure for connecting and disconnecting control circuits. The kit also includes two screws and spacers, a spring washer, and a plastic grommet. Two such secondary disconnect kits, providing a total of 72 control circuits, may be used in each substructure as follows:

- One Secondary Disconnect Kit must be mounted on the right side of the substructure for all control power and signals except auxiliary switches. Such signals include those for Shunt Trip, Under voltage Release, Motor Operator, Bell Alarm-Alarm Only, Bell Alarm With Lockout, Neutral CT, and Trip . Unit communication.
- One Secondary Disconnect Kit must be mounted to the left side of the substructure when auxiliary switches are to be connected.

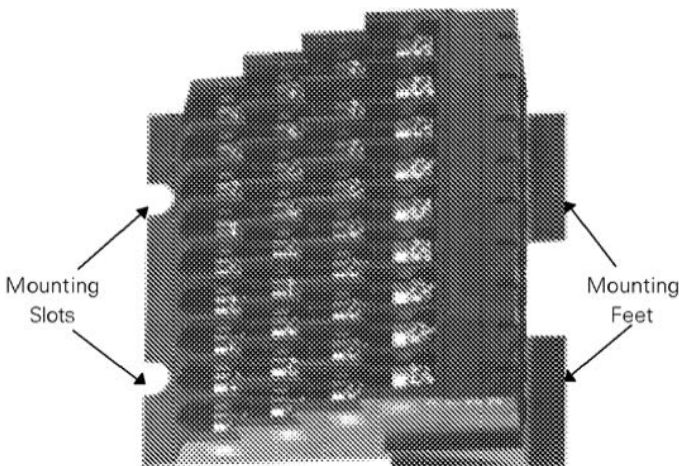


Figure 1. Secondary Disconnect for Power Break II Draw-Out Substructures.

All circuits are wired to dedicated positions, as illustrated in Figures 2 and 3. Figure 2 shows the two labels that are mounted to either side of the breaker's front cover. Figure 3 shows the numbering scheme for the Secondary Disconnect. Note that the numbers shown in Figure 3 are molded into the plastic housing near the metal slabs.

Write on spaces for switch board circuit identification

AUXILIARY SWITCH		INTERNAL WIRE HARNESS COLOR CODES:	
INTERNAL WIRE COLORS: Brown/White, White When Dielectric Testing be sure all 3 terminals are connected together. Do not apply high voltage between terminals.		R = RED, W = WHITE, Y = YELLOW, N = BROWN, P = PURPLE, G = GREEN, B = BLACK, L = BLUE	
CONTACT RATING: 6 AMP - 240V AC, 16 AMP - 125V DC, 14 AMP - 250V DC 1005402P1-A		1005402P1-B	
19 AUX. 11 "A"	1 AUX. 12 "A"	18 ELECT. OPER. R	36 ELECT. OPER. B
20 AUX. 11 "B"	2 AUX. 12 "B"	17 RMT. CHG. + W	35 RMT. CHG. - L
21 AUX. 11 COM	3 AUX. 12 COM	16 RMT. CLS. + Y	34 RMT. CLS. - N
22 AUX. 9 "A"	4 AUX. 10 "A"	15 B.A. ONLY COM Y	33 CHG. IND. G
23 AUX. 9 "B"	5 AUX. 10 "B"	14 B.A. ONLY N.O. N	32 SHUNT TRIP B
24 AUX. 9 COM	6 AUX. 10 COM	13 B.A. ONLY N.C. P	31 SHUNT TRIP B
25 AUX. 7 "A"	7 AUX. 8 "A"	12 LOCKOUT COM W	30 U.V.R. L
26 AUX. 7 "B"	8 AUX. 8 "B"	11 LOCKOUT N.O. R	29 U.V.R. L
27 AUX. 7 COM	9 AUX. 8 COM	10 LOCKOUT N.C. B	28 INPUT+ B
28 AUX. 5 "A"	10 AUX. 6 "A"	9 UVIND COM W	27 INPUT- W
29 AUX. 5 "B"	11 AUX. 6 "B"	8 UVIND N.O. W	26 ZSI INPUT- W
30 AUX. 5 COM	12 AUX. 6 COM	7 COMM- W	25 ZSI INPUT+ G
31 AUX. 3 "A"	13 AUX. 4 "A"	6 COMM+ W	24 ZSI OUTPUT- W
32 AUX. 3 "B"	14 AUX. 4 "B"	5 C # VOLTS R	23 ZSI OUTPUT+ R
33 AUX. 3 COM	15 AUX. 4 COM	4 B # VOLTS W	22 OUTPUT- W
34 AUX. 1 "A"	16 AUX. 2 "A"	3 A # VOLTS L	21 OUTPUT+ W
35 AUX. 1 "B"	17 AUX. 2 "B"	2 24VOLTS DC- B	20 A # TAP B
36 AUX. 1 COM	18 AUX. 2 COM	1 24VOLTS DC- R	19 B # COM. W

Far Low Near Low

LEFT SIDE

TERMINAL BLOCK LABEL

■ SCREW TERMINAL POSITION RELATIVE TO FRONT OF CIRCUIT BREAKER

Block A

Far Low Near Low

RIGHT SIDE

TERMINAL BLOCK LABEL

Block B

Figure 2. Labels mounted on the sides of the breaker front cover, show in the circuit positions on the Secondary Disconnects

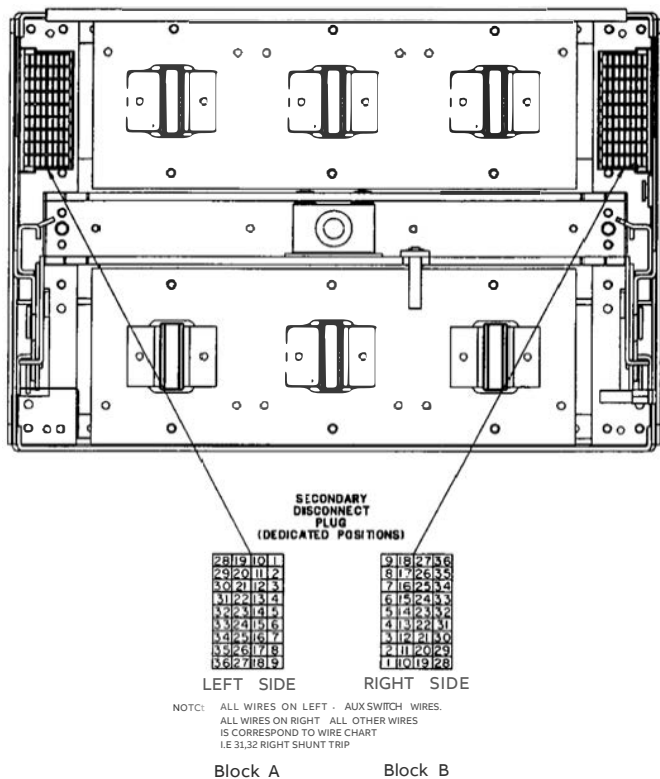


Figure 3. Secondary Disconnect dedicated wire positions are indicated by molded-in numbers.

Installation

WARNING: Before beginning any installation disconnect the Draw-Out Substructure from all voltage sources, both primary and control

AVERTISSEMENT: Avant de commencer toute installation assurez-vous que le berceau est déconnecté de toute source de tension (primaire ou secondaire).

There are three Secondary Disconnect mounting designs, each of which is described below:

- Type 1 - Older 800-2000 A substructures.
- Type 2 - Older 2500-4000 A substructures.
- Type 3 - All substructures built after May 1998.

When the installation is complete, check the following two notes:

NOTE: When it is installed correctly, the Disconnect block is spring loaded away from the wall and will float so that it can align with the disconnect on the draw-out circuit breaker.

NOTE: Lorsque correctement installé, le bloc de sectionnement de filerie est écarté de la paroi par le ressort et flotte légèrement de façon à s'aligner librement avec le bloc de la partie mobile.

NOTE: Be sure that the wires are not pulling on the Disconnect block. The block must be free to float so that it can align properly with the mating disconnect on the draw-out circuit breaker.

NOTE: Assurez-vous que les fils ne tirent pas sur le bloc de sectionnement de filerie. Le bloc de sectionnement doit flotter légèrement de façon à s'aligner librement avec le bloc de la partie mobile.

Type 1 Installation

Use the following procedure to install the Secondary Disconnect Kit on older 800-2000 A Power Break II Draw Out Substructures:

1. Install the 6.38-inch-long grommet into the oblong wire exit hole as shown in Figure 4.
2. Attach the Secondary Disconnect block to the wall of the draw-out enclosure by hooking the front two mounting feet of the Disconnect through the rectangular holes in the enclosure, while keeping the spring washer balanced on the post, as illustrated in Figure 4.

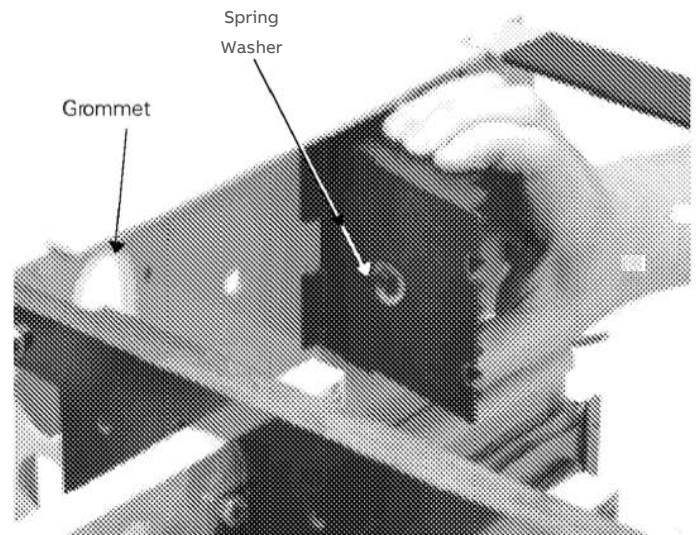


Figure 4. Installing the Secondary Disconnect with spring washer into a Type 1 enclosure.

3. With a 5/16 inch nut driver or socket, insert the two #10-32 thread forming screws through the two spacers, as illustrated in Figure 5. Torque the screws to 50 lb-in. The spacers prevent the screws from being tightened down against the plastic block.
4. Install the wiring to the Secondary Disconnect block, beginning with the rear row. Route the wires out through the grommetted hole in the side wall, as illustrated in Figure 6.

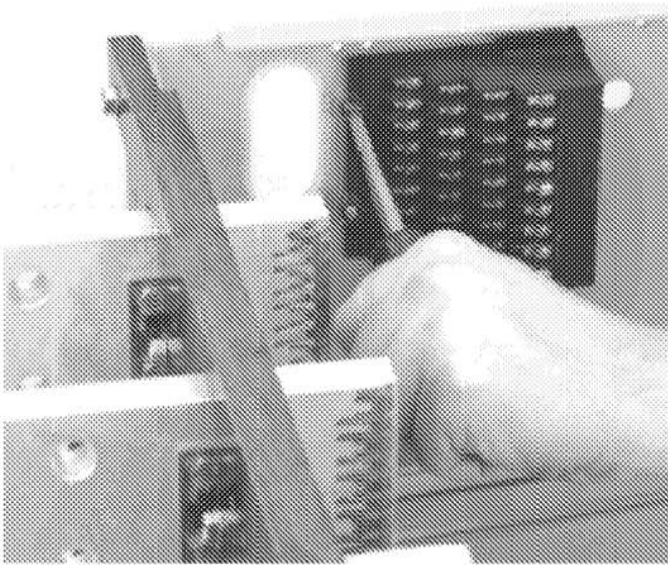


Figure 5. Installing the screws and spacers holding the Secondary Disconnect block against the enclosure side wall.

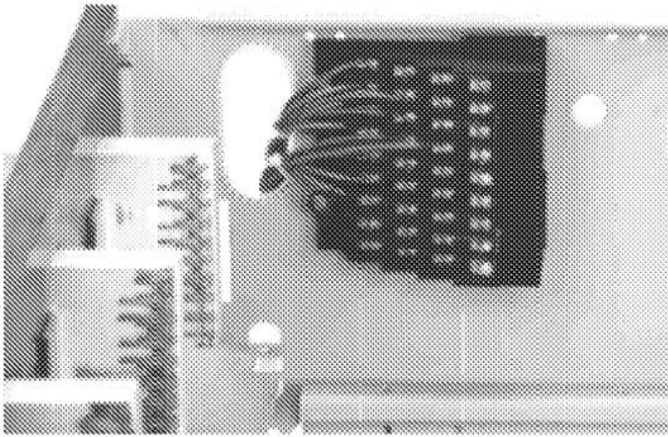


Figure 6. Wiring attached to the Secondary Disconnect block and routed through the grommeted hole in the enclosure side wall.

Type 2 Installation

Use the following procedure to install the Secondary Disconnect kit on older 2500-4000A PowerBreak II Draw-Out Substructures:

1. Install the 6.38-inch-long grommet into the oblong wire-exit hole shown in Figure 7.
2. Loosen, but do not remove, the two #10 screws holding the mounting slide, shown in Figure 7, just enough to loosen the slide. Move the slide forward in the Substructure to make room for the Secondary Disconnect mounting feet.
3. Place the spring washer on the post on the Disconnect block, as shown in Figure 8. Place the two mounting slots on the rear of the Disconnect against the two spacers next to the wire exit hole, then drop the mounting feet on the front of the Disconnect into the opening created by moving the mounting slide forward.

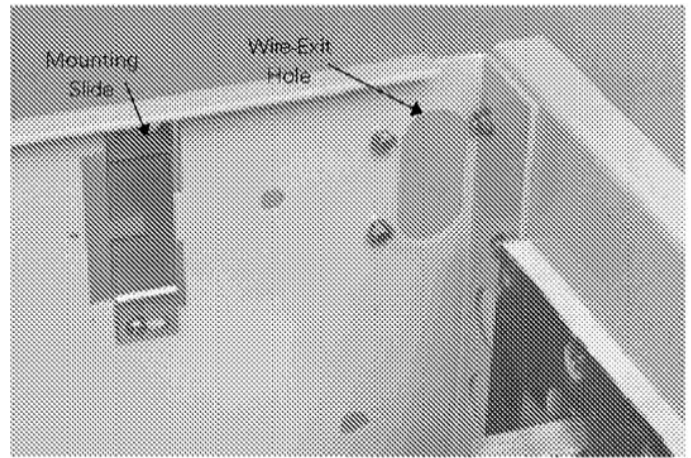


Figure 7. Inside rear corner of the type 2 draw out substructure showing the wire exit hole and the mounting slide

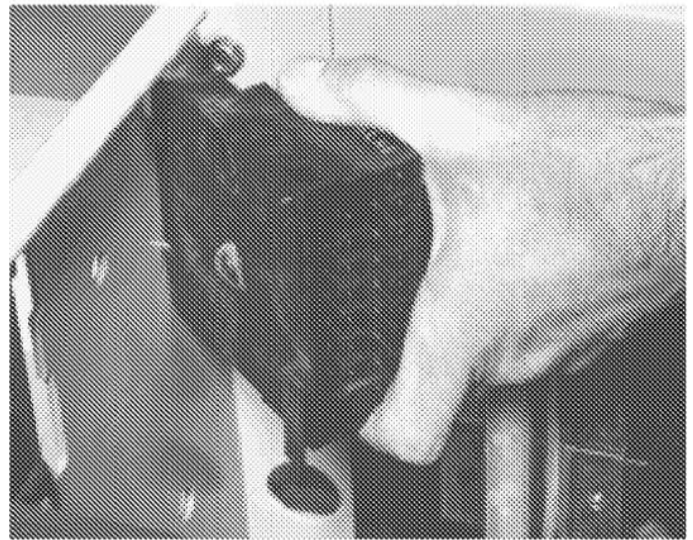


Figure 8. Mounting slots of the Secondary Disconnect mounted against the spacers on the Substructure.

4. Move the mounting slide back to capture the Secondary Disconnect mounting feet, as shown in Figure 9. Tighten the two mounting screws to 32 lb in. The heads of the screws holding the rear bushings capture the Secondary Disconnect mounting slots.
5. Install the wiring to the Disconnect block, beginning with the rear row. Route the wires out through the grommeted wire-exit hole, as shown in Figure 9.

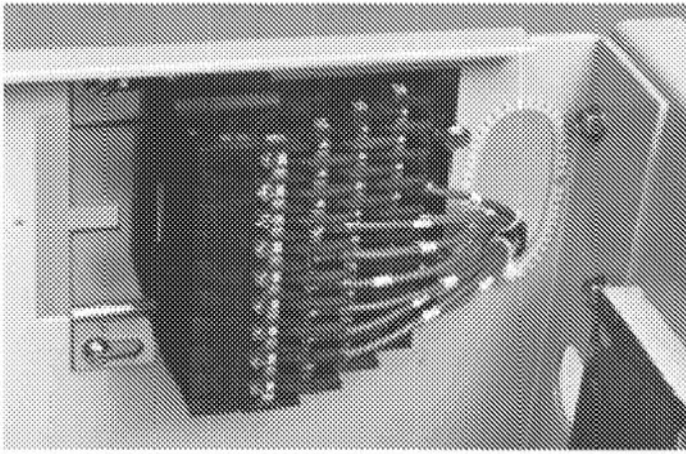


Figure 9. Wiring Attached to the secondary disconnect and routed through the hole in the type 2 enclosure side wall

Type 3 Installation

Use the following procedure to install the Secondary disconnect kit on Power Break II Draw-Out Substructures built after May 1998

1. Connect the external control circuit wiring to the new Secondary Disconnect block.
2. Loosen, but do not remove, the two #10 screws holding the mounting slide, shown in Figure 10, just enough to loosen the slide. Move the slide forward in the Substructure to make room for the Secondary Disconnect mounting reel.
3. Locate the Secondary Disconnect block inside the Sub-structure with the wires routed through the wire exit slot. Place the spring washer on the post on the Secondary Disconnect block as shown in Figure 8. Place the two mounting slots on the rear of the Disconnect against the two bushings next to the wire-exit hole, then drop the mounting feet on the front of the Disconnect into the opening created by moving the mounting slide forward.

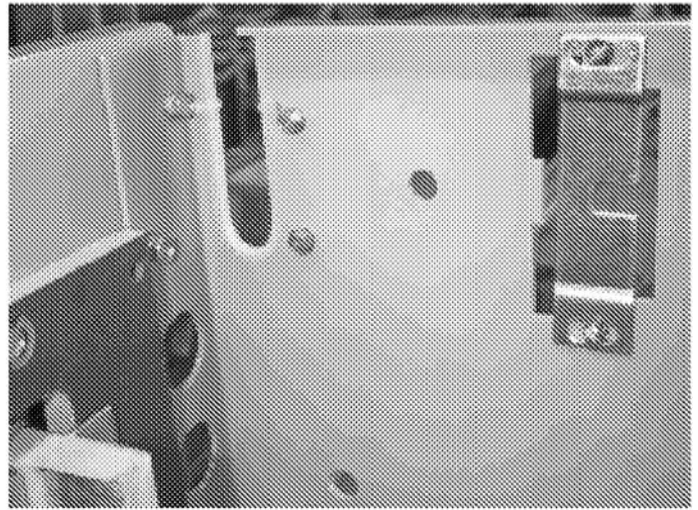


Figure 10. Inside rear corner of the Type 3 Draw-Out Substructure, showing the wire-exit hole and the Secondary Disconnect mounting slide.

4. Move the mounting slide back to capture the Secondary Disconnect mounting feet, as shown in Figure 11. Tighten the two mounting screws to 32 lb-in. The heads of the screws holding the rear spacers capture the Secondary Disconnect mounting slots.

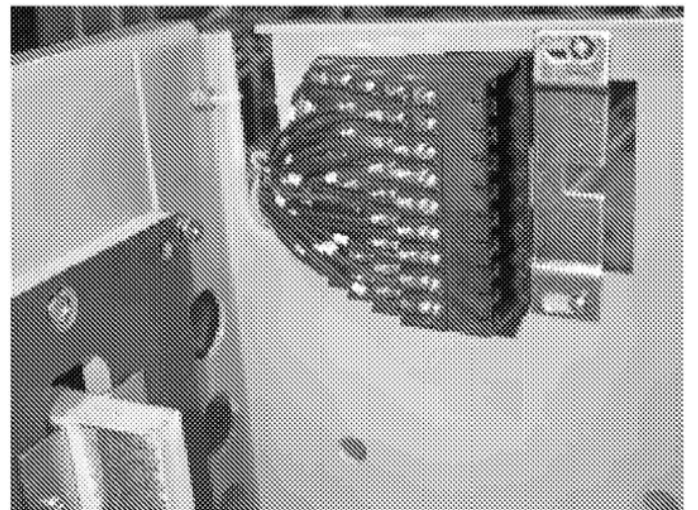


Figure 11. Secondary Disconnect installed in Substructure.