

Type BP3 By-Pass Switch

- 3-Pull Operation
- Rated 600 Amps & 900 Amps
- 14.4, 25 & 34.5kV
- Single- and Three-Phase Units

Principal Application: Recloser Maintenance

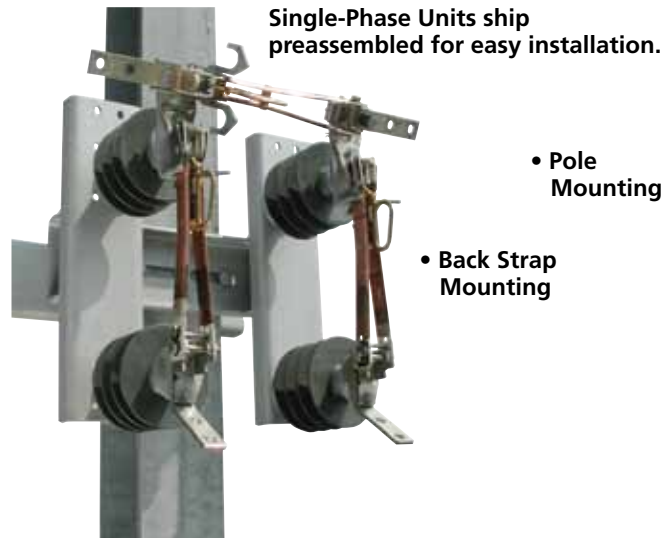
By design, the Type BP3 Switch provides an economical means for bypassing and disconnecting a pole-mounted distribution recloser. This permits de-energized periodic maintenance of the recloser without interrupting service. The BP3 Switch accomplishes this by a combination of three disconnect switches mounted on a common base. By operating the blades in proper sequence, the recloser is bypassed and isolated from the distribution system.



Three-Phase Units ship pre-assembled on a crossarm, the complete assembly ready for easy installation at the site. Choose steel or fiberglass crossarm.

Rated at 600 or 900 Amps, the BP3 Switch is available in nominal ratings of 14.4kV - 110kV LIW*, 25kV - 125kV or 150kV LIW*, and 34.5kV - 150kV LIW*. All are available with either a right or left opening direction of the by-pass blade.

*LIW = Lightning Impulse Withstand



Operation

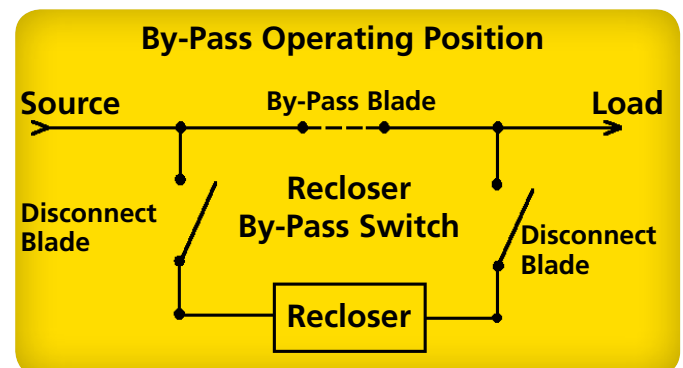
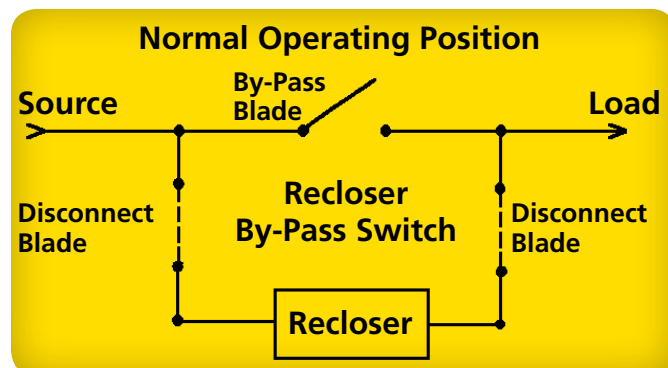
Figures below illustrate the BP3 By-Pass Switch operation.

In normal operation, the by-pass switchblade is open and the two disconnect blades are closed, allowing the recloser to be in the circuit.

When recloser maintenance, testing, repair or removal is

required, first close the by-pass blade to provide a parallel current path. Then open the recloser's internal contacts. And last, open both disconnect blades of the by-pass switch.

In this way, service continuity is maintained and the recloser is isolated from the line. To put the recloser back in service, the switch operating procedure is reversed.



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Power Systems

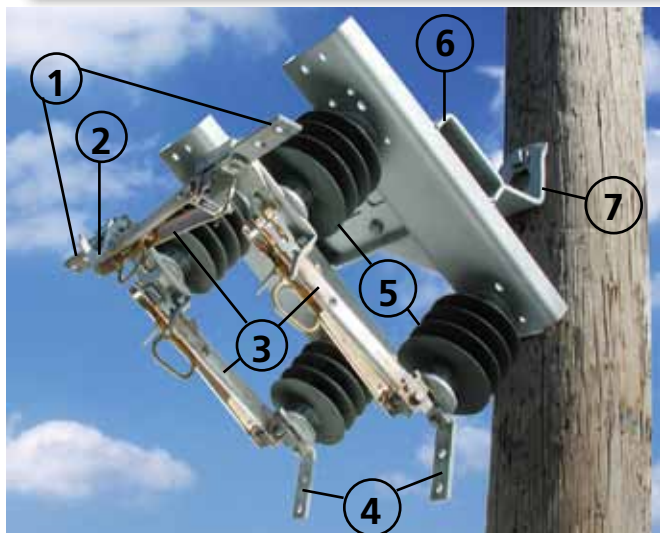
Type BP3 By-Pass Switch

Feature —

- ESP™ Silicon Alloy Rubber 2.25 in. Bolt-Circle Insulators
- Fully-welded mounting base
- Angled Terminal Pads
- Utilizes live parts from M3 switches

Advantage —

- Time proven insulator material provides maximum leakage distance and minimizes weight, up to 25% lighter than competitive designs
- Maximum rigidity, eliminates possibility of misalignment compared to bolt-together designs
- Maintains switch alignment for smooth, positive blade operation
- Facilitates connection to recloser with maximum pole clearance
- Time proven design provides reliable service under anticipated service conditions



BP3 Switch Components

1. Terminal Pads (All)

Tin-plated high conductivity copper, NEMA two-hole terminal pad. Parallel Groove connectors (ATC1343) and captive hardware are available as options.

2. Loadbreak Hooks

Hot dipped galvanized steel hooks. To allow use of portable loadbreak tool. Provided on by-pass blade only.

3. By-Pass and Disconnect Blades

The by-pass and disconnect blades are of the same construction as those used on the M3 Hookstick Disconnect Switch. They are high conductivity copper blades, silver-plated at all contact areas. Stainless-steel back-up springs are used to maintain efficient current transfer between the stationary contact and the end of the blade. The by-pass blade is available in either right or left opening configurations (hinge on right or left). See Catalog page 14B-2 for further description.

4. Angled Terminal Pads

Angled construction allows for easier connection to a recloser while maintaining maximum pole clearance.

5. Insulators

ESP™ silicon alloy rubber, 2.25-inch bolt circle insulators. See Catalog page 14B-3 for further description.

6. Switch Base

Welded-construction galvanized steel base provides maximum rigidity to maintain consistent switch alignment for positive blade operation.

7. Pole Mounting Bracket

Single-piece galvanized steel mounting bracket facilitates ease of installation. A backstrap mounting option also is available.

Performance Specifications

- 600 Amps & 900 Amps Continuous
- 65 kA Peak Withstand

Max. Design, kV	Lightning Impulse Withstand Rating, kV	Leakage Distance, in.	Weight, lb.
17.1	110	17.2	56
29	125	21.9	62
29	150	28.2	65
38	150	28.2	65

Switch Variations

- Right or Left By-Pass Blade Opening (BP3R or BP3L)

Right or left by-pass blade opening may be specified. Right opening by-pass blade opens to the right of the operator when standing in front of the switch. Left opening by-pass blade opens to the left.

- Angled or Non-Angled By-Pass Blade (see drawings, pp 17 & 18)

Switch Mounting — Four options available:

- No Mounting Bracket (No option letter in Cat. No.)

Provides holes and slots in the switch base for direct mounting to a vertical structure. The user supplies the mounting hardware and must drill structure to match the hardware.

- Back Strap (Option B)

Provides a galvanized-steel back strap and hardware for vertical-structure mounting, includes two each 1/2" by 8" and 10" long carriage bolts, square nuts and flat washers.

- Pole Mounting Bracket (Option M)

Provides a galvanized-steel bracket for wood pole mounting and hardware to attach the switch to the bracket. The user supplies the bracket-to-pole hardware. (If the pole is other than wood, contact your factory representative.)

- Three-Phase Mounting alternative

Terminal Connectors — Five options available:

- No Terminal Hardware (No option letter in Cat. No.)

User supplies terminal connectors and mounting hardware.

- Captive Hardware (Option C)

Provides 1/2" by 1 3/4" long stainless bolt secured into each terminal pad hole. Each bolt is supplied with a hex nut and lock washer. Terminal connectors supplied by the user.

- By-Pass Blade Only Aluminum Terminals (Option D)

Provides cast-aluminum compression terminal for connecting aluminum cable to flat pad. Conductors 0.772" – 0.814".

- Bronze Terminal Connectors (Option G)

Provides bronze-alloy terminal connectors with 3/4"-dia hex clamping bolt for connecting copper cable to copper flat. Conductors 0.204" – 0.575".

- Aluminum Terminal Connectors (Option P)

Four fortified cadmium-plated aluminum parallel-groove terminal connectors (ATC1343) with terminal pad mounting hardware supplied. Connectors accommodate conductor sizes from No. 2 solid Cu through 500 MCM Cu or Aluminum.

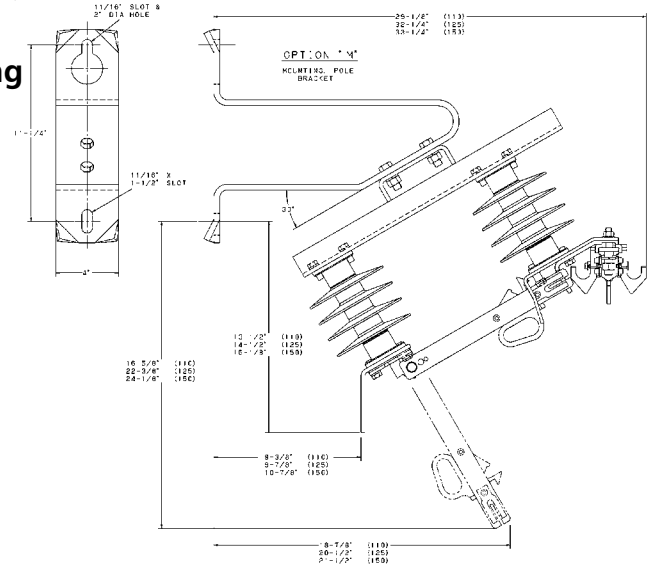


BP3 Switch SINGLE-PHASE Weights and General Dimensions

Rating	Net Weight (lb.)			Crate Dimensions (inches)			
	Switch	Opt. B	Opt. M	Crate	L	W	H
110kV LIW (17.1kv)	56						
125kV LIW (29kv)	60	19	14	40	29	29	22
150kV LIW (29kv)	65						
150kV LIW (38kv)	65						

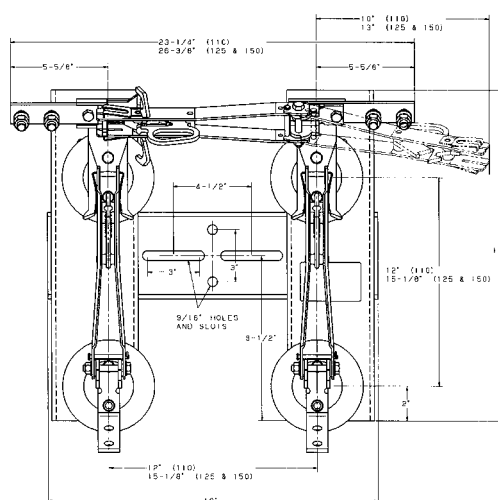
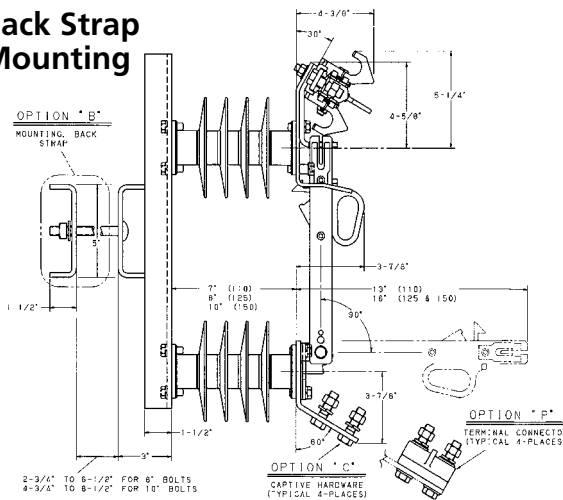
NOTE: Illustrations here show only Right by-pass switch blade opening. Left by-pass switch blade opening will be opposite as shown but does not change installation or operation procedures.

Angled By-Pass Blade Pole Mounting



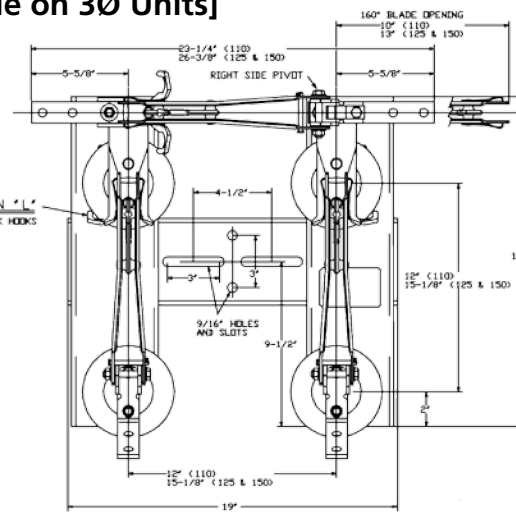
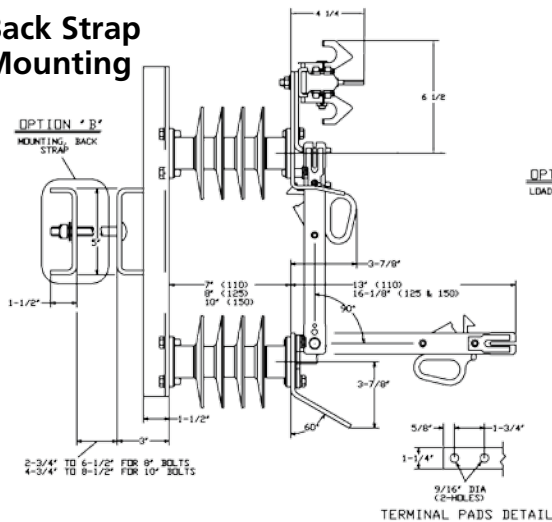
Angled By-Pass Blade

Back Strap Mounting



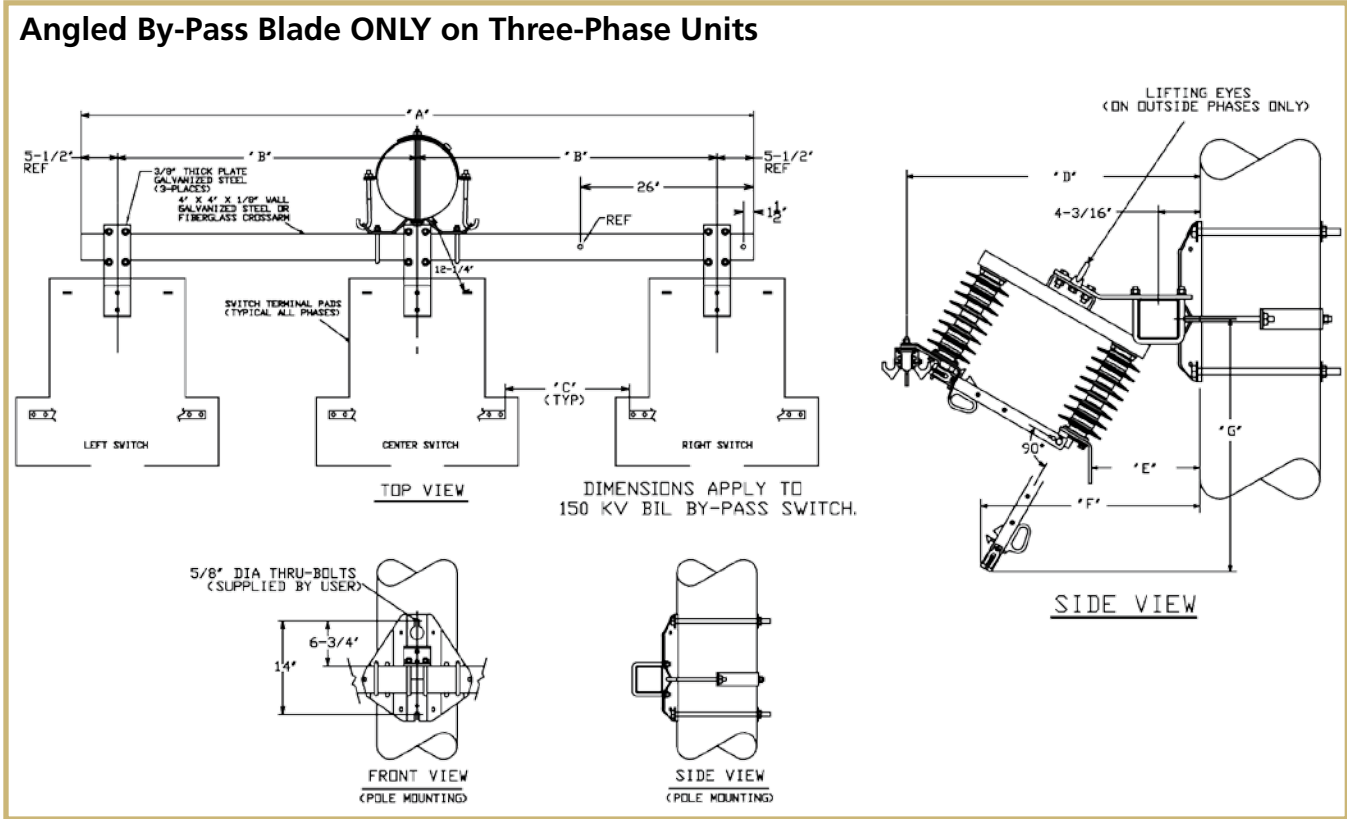
Non-Angled By-Pass Blade [Not Available on 30 Units]

Back Strap Mounting



BP3 Switch THREE-PHASE Weights and General Dimensions

Rating	Dimensions (inches)							Net Weight (lb.)			Crate Dimensions (inches)		
								Switch		Crate			
	A	B	C	D	E	F	G	Steel Crossarm	Fiberglass Crossarm		Length	Width	Height
110kV LIW 101" Crossarm	101	45	22-3/4	25-3/8	9-1/2	19	20	280	265	110	123	33-1/2	38-1/4
125kV LIW 101" Crossarm			18-5/8	28-1/2	10	21-1/8	23-1/2	290	275				
150kV LIW 101" Crossarm			18-5/8	29-1/2	11	22-1/8	25-1/4	305	290				
110kV LIW 124" Crossarm	124	56-1/2	23-3/8	25-3/8	9-1/2	19	20	285	275	135	147	33-1/2	38-1/4
125kV LIW 124" Crossarm			30-3/8	28-1/2	10	21-1/8	23-1/2	295	285				
150kV LIW 124" Crossarm			30-3/8	29-1/2	11	22-1/8	25-1/4	310	300				



NOTE: Illustrations here show only Right by-pass switch blade opening. A Right opening by-pass blade opens to the right of the operator when standing in front of the switch. Left by-pass switch blade opening will be opposite as shown but does not change installation or operation procedures.

Type BP3 By-Pass Switch

Ordering Information for Single-Phase and Three-Phase Units

Ordering Information
Catalog No. System



<p>Non-Angled By-Pass Blade [Not available for 3-phase units]</p> <p>A = Left hand opening</p> <p>B = Right hand opening</p>
<p>Angled By-Pass Blade</p> <p>R = Right hand opening</p> <p>L = Left hand opening</p>

INSULATION	
600A Rating	
1 =	14.4kV, 110kV LIW* (17.1kV max. design, 17.2" leakage distance)
2 =	25kV, 125kV LIW* (29kV max. design, 21.9" leakage distance)
3 =	25kV, 150kV LIW* (29kV max. design, 28.2" leakage distance)
4 =	34.5kV, 150kV LIW* (38kV max. design, 28.2" leakage distance)
900A Rating	
5 =	14.4kV, 110kV LIW* (17.1kV max. design, 17.2" leakage distance)
6 =	25kV, 125kV LIW* (29kV max. design, 21.9" leakage distance)
7 =	25kV, 150kV LIW* (29kV max. design, 28.2" leakage distance)
8 =	34.5kV, 150kV LIW* (38kV max. design, 28.2" leakage distance)

*LIW = Lightning Impulse Withstand

OPTIONS
B = Mounting, Back Strap (not available with Option M)
C = Captive Terminal Hardware (not available with Option P)
D = CCLS814C Connectors (by-pass blade terminals only)
G = SWL025B Terminal Connectors
L = Loadbreak Hooks included on disconnect blades
M = Mounting, Pole Bracket (not available with Option B)
P = ATC1343 Terminal Connectors
For 3-Phase BP3 units only:
W = 3 Switches mounted on standard 101" steel crossarm
X = 3 Switches mounted on 124" steel crossarm
Y = 3 Switches mounted on standard 101" fiberglass crossarm
Z = 3 Switches mounted on 124" fiberglass crossarm

NOTE: Illustrations here show only Right by-pass switch blade opening. A Right opening by-pass blade opens to the right of the operator when standing in front of the switch. Left by-pass switch blade opening will be opposite as shown but does not change installation or operation procedures.

- NOTES:**
- Options C and P cannot be specified together.
 - If Option D is specified with Option G or P, Option D is applied to the by-pass blade terminals and Option G or P is applied to the disconnect blade terminals.
 - Options B and M are not used for 3-phase configuration.