

HUBBELL Type M3 Hookstick Disconnect Switches

Up to 38kV 600 or 900 Amp 40kA Momentary

Application

The Chance Type M3 Disconnect Switch is a single-phase hookstick operated switch. It is for manual switching of overhead lines on electrical distribution systems up to 38kV. Design variations allow for applications as a distribution switch or a substation switch. Rated for 600 or 900 amps continuous, 40,000 amps momentary and 25,000 amps sym. 2-seconds short-time withstand, the M3 may be applied on:

- Dip/Riser poles
- Single crossarm
- Double crossarm
- Aluminum or steel structure

and wherever a disconnect switch is desirable for line sectionalizing. The addition of optional bypass studs allows for bypassing reclosers, regulators, capacitor banks or metering devices.

Operation

All Chance M3 disconnect switches include loadbreak hooks which serve both as a blade closing guide and for use with a portable loadbreak tool. To open the switch under load, use only an approved loadbreak tool and refer to the tool manufacturer for instructions.

Positive latching is provided. Silver-plating on the contact areas enhances efficient current transfer. For easy opening and ice-breaking action, the pull ring activates the latch as a pry-out lever.

Components of the M3 Switch

1. By-pass Studs (Optional)

Two copper alloy by-pass studs used for regulator, reclosers, and metering devices for by-passing operations. Provides superior corrosion protection as well as high conductivity. Chance hot line clamps are to be used in conjunction with this option (refer to section 13 of the Chance catalog for selection of proper clamp).

2. Terminal Pad (Standard)

High conductivity tin-plated copper, NEMA two-hole terminal pad.

3. Back-up Springs (Standard)

Two stainless steel springs (300 series) for high strength and superior corrosion resistance to maintain efficient current transfer at the stationary contact and end of blade.

4. Loadbreak Hooks (Standard)

Hot dipped galvanized steel to ASTM A153 for corrosion protection to be used with portable loadbreak tool. Also acts as a blade guide to increase the side loading capabilities during switch closing.

5. Copper Blade (Standard)

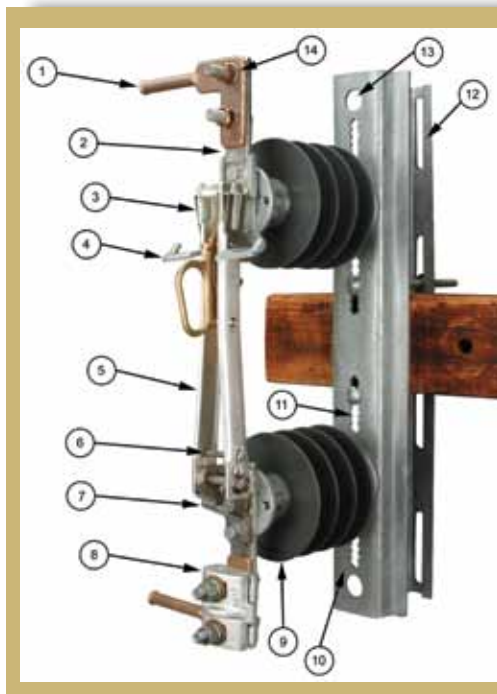
High conductivity copper blade and silver-plated moving contact areas. The blade utilizes four-finger contact design for superior performance on momentary currents. Blade is triangulated and edge-formed for superior stiffness and blade side-loading capability during closing.

6. Stainless steel pin (Standard)

Stainless steel pin can be positioned to stop the blade at 90° (as supplied) or 160°.

7. 160° Open Position Latch (Optional)

This is a 300 series stainless steel latch to hold the blade in the 160° open position.



8. Parallel Groove Connectors, (Optional)

Catalog No. ATC1343, fortified cadmium-plated aluminum parallel groove clamp, furnished with galvanized steel bolts and nuts and will accept #2 through 500 kcmil aluminum or copper conductor.

9. Insulators

Available in 2.25-inch bolt circle distribution insulators of light weight ESP™ silicon alloy rubber or porcelain.

10. Switch Base

Bases are hot dip galvanized to ASTM A153 for corrosion protection and can be mounted with the supplied back-strap on a single or double crossarm; they can also be mounted on aluminum or steel equipment mounts. See drawings on following pages for dimensions.

11. Serrated Slots (Standard)

For retaining 3/8" carriage bolts, which are included, with the mounting back-strap when ordered. Smooth slots are available as an

option. (Distribution switches only)

12. Back-strap (Standard)

Comes with hardware to match the distribution base ordered: U-shaped for rigidity and strength. Galvanized to ASTM A153 for corrosion protection. (Distribution switches only)

13. Dead-end Provision (Standard)

Holes for dead-ending conductors are stamped out of the galvanized steel base. Rated for 8,000 lb. working load. Hole size is 1"

14. Captive Hardware (Optional)

Two stainless steel spline bolts pressed into each terminal pad, bronze nut and stainless steel lock washer included.

DISTRIBUTION CLASS (2.25" Bolt-Circle) Switch Ratings

Max. kV	Rated BIL*	Material	Switch Electrical Ratings				Insulator Mechanical Ratings				
			Leakage Distance, inches	Dry Arc Distance, inches	60 Hz Flash-over, kV*		Cantilever, pounds	Tension, pounds	Torsion, in.-lb.	Compression, pounds	Weight, lb.
					Wet	Dry					
15.5	110	ESP Rubber	17.2	7.1	30	38	1,200	5,000	3,000	5,000	2.90
		Porcelain	10.5	6.0	30	38	1,200	5,000	3,000	5,000	7.73
27	125	ESP Rubber	21.9	8.1	45	50	1,000	5,000	3,000	5,000	3.30
		Porcelain	15.5	7.0	45	50	1,000	5,000	3,000	5,000	9.00
38	150	ESP Rubber	28.0	10.0	60	70	800	5,000	3,000	5,000	4.50
		Porcelain	24.0	9.5	60	70	800	5,000	3,000	5,000	11.45

*ANSI Rating. Less than test results. Test reports available upon request.

Distribution Class Ratings

Nominal Voltage/BIL: 14.4kV/110kV, 25kV/125kV, 34.5/150kV
Continuous Current: 600 or 900 amp
Momentary Current: 40,000 amperes asymmetrical
Short Time Withstand Current 2-sec.: 25,000 amperes sym.
Deadending: 8,000 lb. working load

DISTRIBUTION Class Insulators

Distribution class insulators are 2 1/4" bolt-circle, provided with 110, 125 or 150kV BIL respectively for the 15.5, 27 and 38kV ratings. These are available in either ESP™ silicon alloy rubber or porcelain insulators.

ESP™ Insulator, available in three sizes



• End Fittings

Ductile iron castings are mechanically crimped directly to the fiberglass rod. The crimp requires no intermovement of the parts to achieve high strength, nor does it introduce potting compounds or adhesives.

• Weathersheds

ESP™ insulators are the same proven material used in PDV arresters, Hi*Lite and Veri*Lite insulators and PDI dead-ends. ESP™ is a polymer compound made by alloying silicone and EPDM rubber. This alloy offers the desirable toughness and resistance to tracking of Ohio Brass's original EPR, with the hydrophobic characteristics derived from low molecular weight silicone oils.

Ohio Brass uses several tests to evaluate materials. Tracking, QUV, corona cutting, salt fog, oxidative stability and variations of differential thermal analysis tests assure the quality of OB's shed material. For further information on our polymers ask your Hubbell representative for the publication "Polymer Materials for Insulator Weathersheds" EU1264-H.

Structural design of ESP™ insulator:

• Rod

ESP™ insulator fiberglass rod is produced from the highest quality material. Strands are aligned for the maximum tensile strength. The rod is filled with electrical grade glass fibers.



STATION CLASS (3" Bolt-Circle) Switch Ratings

Rated BIL*	Material	Electrical				Mechanical			
		Leakage Distance, inches	Dry Arc Distance, inches	60 Hz Flash-over, kV*		Cantilever, pounds	Tension, pounds	Torsion, in.-lb.	Compression, pounds
				Wet	Dry				
110	Polymer	19.0	8.0	45	50	2,000	8,500	7,000	10,000
	Porcelain	15.5	7.0	45	50	2,000	8,500	7,000	10,000
150	Porcelain	24.0	9.5	60	70	2,000	10,000	8,000	10,000

*ANSI Rating. Less than test results. Test reports available upon request.

STATION Class Insulators

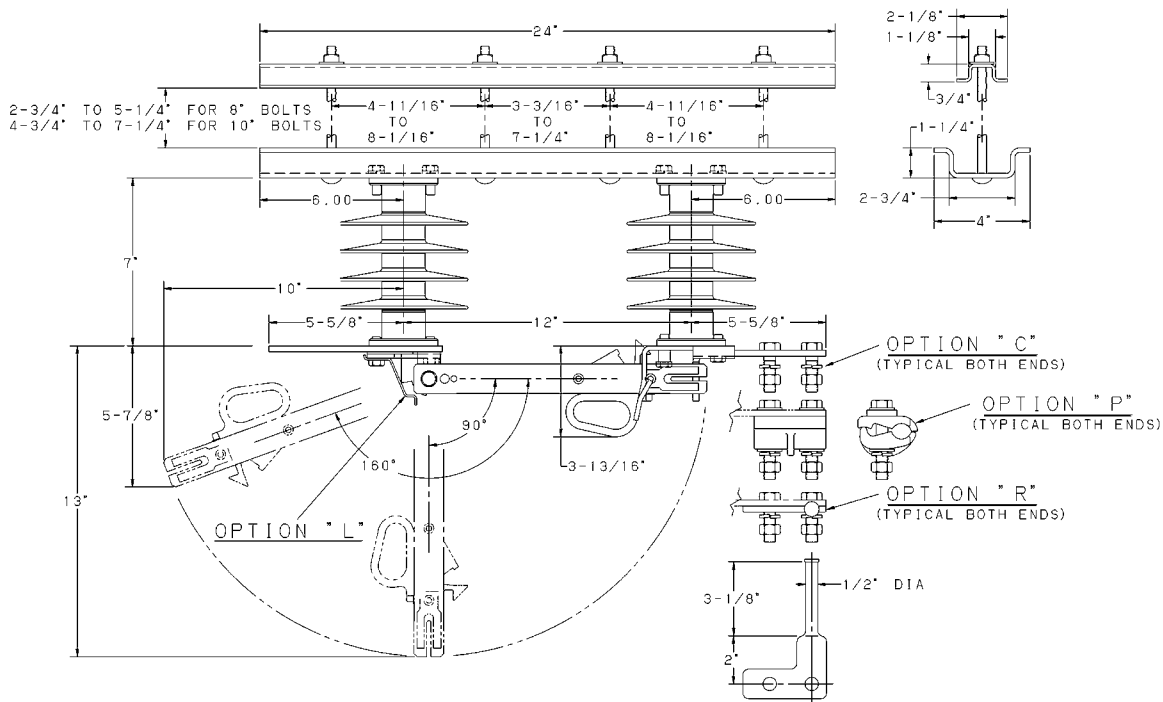
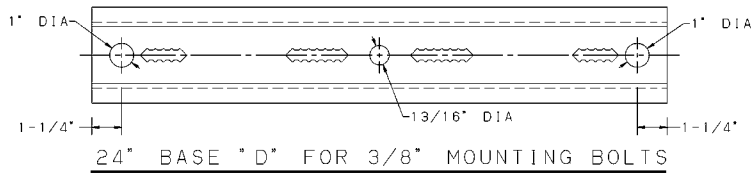
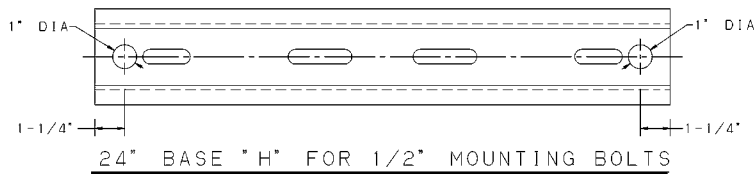
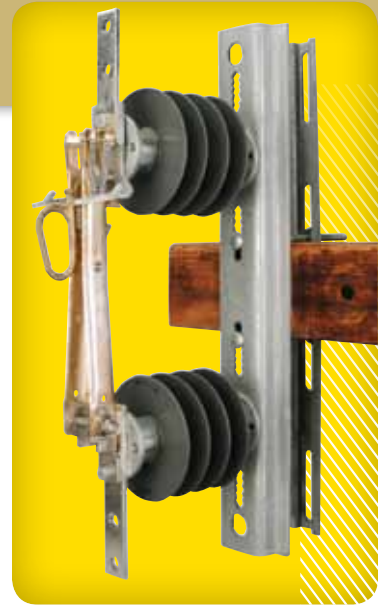
Station class insulators are available with Sky-Glaze horizon-blending 3" bolt-circle, which provide 110 and 150kV BIL respectively for the 15 and 27kV substation switches. These are available in porcelain or at 15kV polymer (cycloaliphatic).

Substation-style Station Class Type M3S switch is made for mounting on a steel structure or on a pole-mounted aluminum or steel equipment mount.

Distribution Class

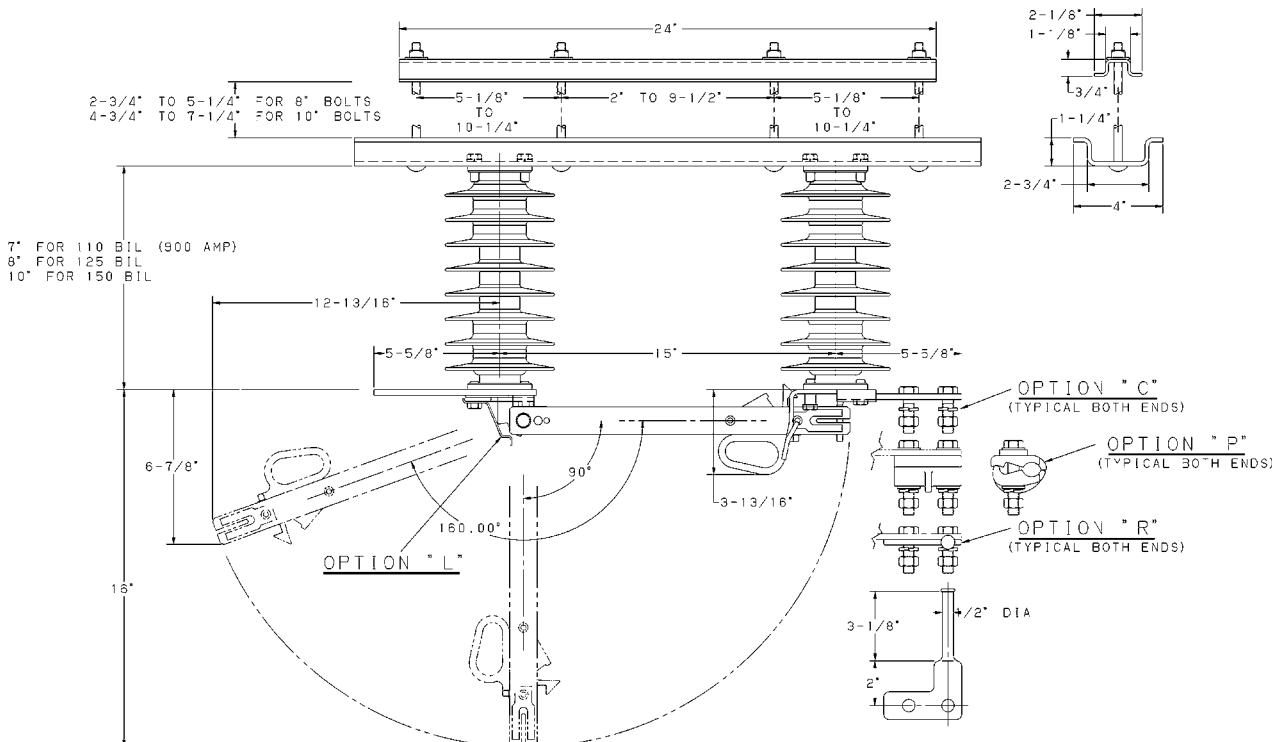
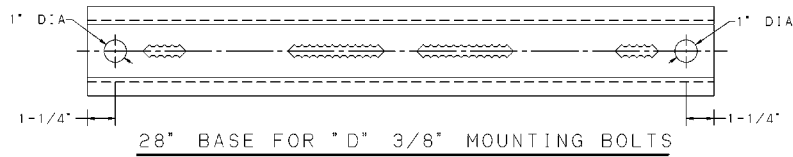
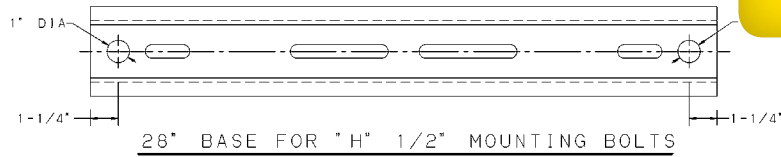
M3 Switch - Dimensional Data

110kV BIL - 600 Amp



Distribution Class M3 Switch - Dimensional Data

110kV BIL - 900 Amp
125kV BIL - 600 Amp
150kV BIL - 600 & 900 Amp

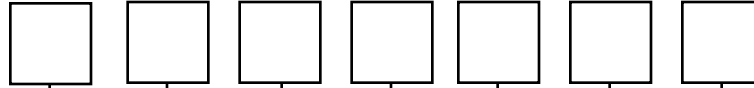


Type M3 Switch DISTRIBUTION CLASS

RUS Listed

Ordering Information

M3



BASE

D = Distribution base, serrated slots with four 3/8" x 8"/10" carriage bolts and backstrap

H = Distribution base, smooth slots with four 1/2" x 8"/10" carriage bolts and backstrap

RATED CURRENT

6 = 600 AMP

9 = 900 AMP

INSULATION

2 = 15kV 110BIL Porcelain

3 = 25kV 125BIL Porcelain (not available in 900 amp)

4 = 35kV 150BIL Porcelain

6 = 15kV 110BIL Polymer

7 = 25kV 125BIL Polymer (not available in 900 amp)

8 = 35kV 150BIL Polymer

OPTIONS

C = Captive Hardware*
Consists of 4 each: 1/2" 13 stainless steel bolts, 1/2" flatwasher / lockwasher, 1/2" 13 bronze nut

L = Open Position Latch (P8070181P)
Stainless steel latch for holding the blade in the 160° open position

P = Parallel Groove Terminals* (ACT1343 2 per switch)
Two complete connectors and hardware. Accepts #2 - 500 kcmil (Copper or Aluminum)

R = Bypass Studs (P8070166P 2 per switch)
Two copper alloy bypass studs, which can be used for regulator or recloser bypassing

*NOTE: Captive Hardware and Parallel Groove Terminals CANNOT be ordered together.

BOLT LENGTH

A = 10" Length

B = 8" Length

