OEM Equipment

COOPER Power Systems

Electrical Apparatus

1210 – 2410 A 1.2 kV Class Externally Removable Secondary Bushings

800-16

GENERAL

The Cooper Power Systems 1210-2410 A Secondary Bushings are designed for external mounting and removal on distribution transformers filled with transformer oil, R-Temp® fluid or an approved equivalent. They are designed for use inside cubicles of fluid-filled transformers.

Tin plated spade terminations are dimensioned per **ANSI®** Standard C57.12.26 for use with most available connectors and terminals, allowing a wide range of applications. The external spade is available in 4, 6, 8, 10, or 12 hole configurations and the internal spade is available with either one or two holes.

The secondary bushings are molded with a specially formulated high strength epoxy. The gasket surfaces are tapered to provide controlled compression and containment of the highly resilient Buna-N rubber gasket.

INSTALLATION

Clamping studs must be welded around the 2.25 inch hole to accommodate the clamp. The gasket is installed over the bushing shank onto the bushing gasket surface. The bushing assembly is installed through the tank hole and the clamp is placed over the studs against the shoulder flange of the bushing. A plated lockwasher and nut are installed on each stud and tightened to the recommended torque. Refer to Installation Instruction Sheet S800-16-1 (5000050609) for details.

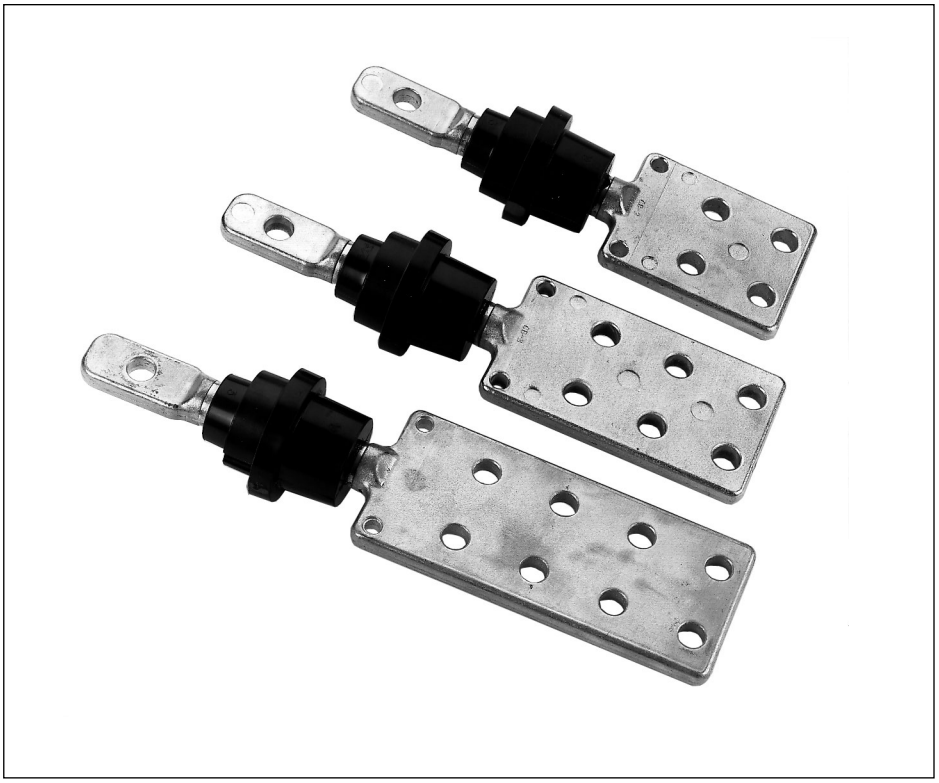

Figure 1.
1210-2410 A 1.2 kV Class Aluminum and Copper Spade Secondary Bushings.

TABLE 1
Voltage Ratings and Characteristics

Description	kV
Standard Voltage Class	1.2
AC 60 Hz 1 Minute Withstand	10
BIL and Full Wave Crest	30

TABLE 2
Current Ratings and Characteristics

Description	Amperes Continuous
Aluminum Bushing	910-1210 A rms
Copper Bushing	1390-2410 A rms

Current ratings and characteristics are in accordance with **ANSI®** Standard C57.12.

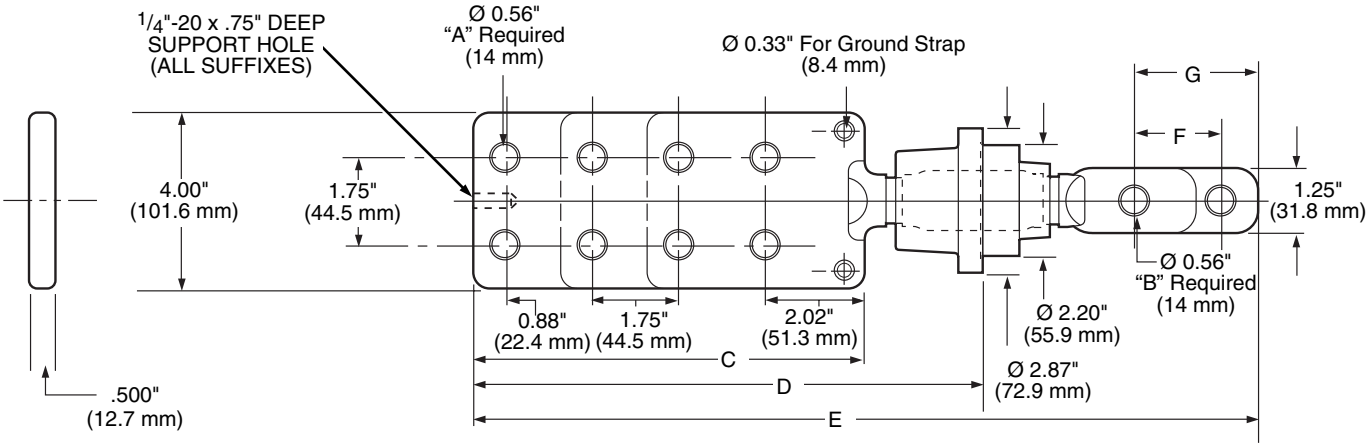

Figure 2.
1210-2410 A 1.2 kV Class Externally Removable Secondary Bushings.

Notes:
Dimensions given are for reference only.
All Sizes have external end support holes.

TABLE 3
Secondary Bushing Dimensions In./mm.

Catalog Number	Quantity of Holes		Dimensions in./mm					Material
	A	B	C	D	E	F	G	
2690225D01	4	1	4.65 (118.11)	7.02 (178.30)	11.33 (287.78)	– –	1.25 (31.75)	Aluminum
2690225D02	4	2	4.65 (118.11)	7.02 (178.30)	12.58 (319.53)	1.75 (44.45)	2.50 (63.50)	Aluminum
2690225D03	6	1	6.40 (162.56)	8.77 (222.75)	13.08 (332.23)	– –	1.25 (31.75)	Aluminum
2690225D04	6	2	6.40 (162.56)	8.77 (222.75)	14.33 (363.98)	1.75 (44.45)	2.50 (63.50)	Aluminum
2690225D05	8	1	8.15 (207.01)	10.52 (267.20)	14.83 (376.68)	– –	1.25 (31.75)	Aluminum
2690225D06	8	2	8.15 (207.01)	10.52 (267.20)	16.08 (408.43)	1.75 (44.45)	2.50 (63.50)	Aluminum
2690225D13	10	1	9.90 (251.46)	12.27 (311.66)	16.58 (421.13)	–	1.23 (31.75)	Aluminum
2690225D14	10	2	9.90 (251.46)	12.27 (311.66)	17.83 (452.88)	1.75 (44.45)	2.50 (63.50)	Aluminum
2690225D15	12	1	11.65 (295.91)	14.02 (356.11)	18.33 (465.58)	–	1.23 (31.75)	Aluminum
2690225D16	12	2	11.65 (295.91)	14.02 (356.11)	19.58 (497.33)	1.75 (44.45)	2.50 (63.50)	Aluminum
2690225D07	4	1	4.65 (118.11)	7.02 (178.30)	11.33 (287.78)	– –	1.25 (31.75)	Copper
2690225D08	4	2	4.65 (118.11)	7.02 (178.30)	12.58 (319.53)	1.75 (44.45)	2.50 (63.50)	Copper
2690225D09	6	1	6.40 (162.56)	8.77 (222.75)	13.08 (332.23)	– –	1.25 (31.75)	Copper
2690225D10	6	2	6.40 (162.56)	8.77 (222.75)	14.33 (363.98)	1.75 (44.45)	2.50 (63.50)	Copper
2690225D11	8	1	8.15 (207.01)	10.52 (267.20)	14.83 (376.68)	– –	1.25 (31.75)	Copper
2690225D12	8	2	8.15 (207.01)	10.52 (267.20)	16.08 (408.43)	1.75 (44.45)	2.50 (63.50)	Copper
2690225D21	10	1	9.90 (251.46)	12.27 (311.66)	16.58 (421.13)	–	1.25 (31.75)	Copper
2690225D22	10	2	9.90 (251.46)	12.27 (311.66)	17.83 (452.88)	1.75 (44.45)	2.50 (63.50)	Copper
2690225D23	12	1	11.65 (295.91)	14.02 (356.11)	18.33 (465.58)	–	1.25 (31.75)	Copper
2690225D24	12	2	11.65 (295.91)	14.02 (356.11)	19.58 (497.33)	1.75 (44.45)	2.50 (63.50)	Copper

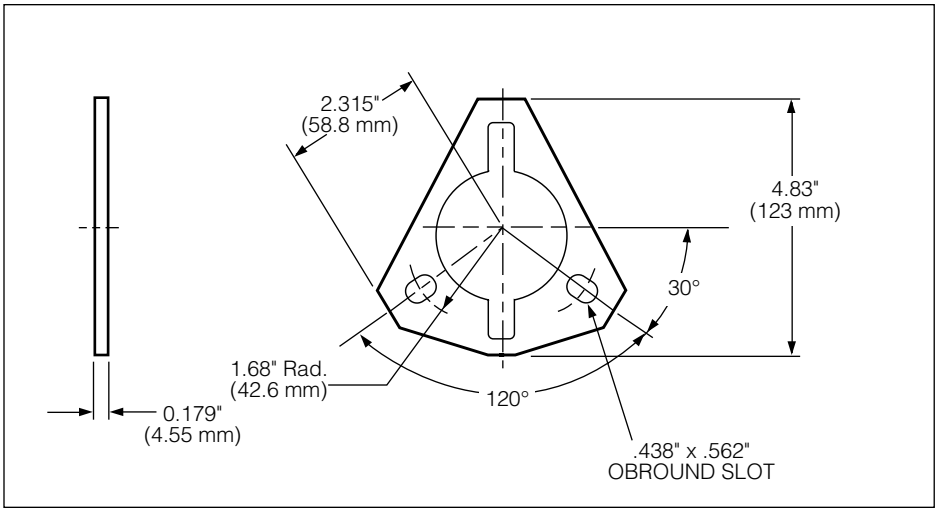

Figure 3.
3-Hole Clamp.

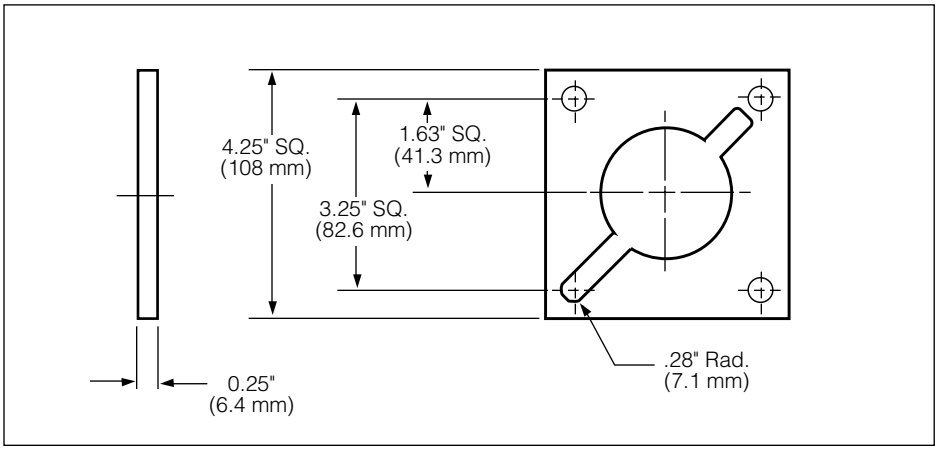

Figure 4.
4-Hole Clamp.

Note: Dimensions given are for reference only.

TABLE 4
Accessories

Description	Catalog Number	Figure Number
4-Hole Square Clamp (3.25 in. C. C. Hole Spacing)	2005835A04	4
3-Hole Triangular Clamp (3.38 in. Bolt Circle)	2037488A03	3
Gasket	0537980C09	6

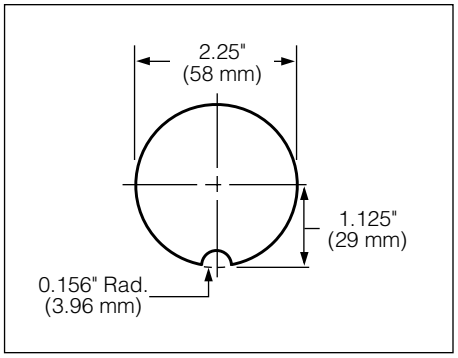

Figure 5.
Standard Hole for all bushings.

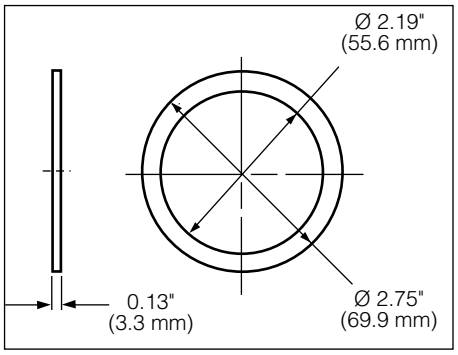

Figure 6.
Gasket.

TABLE 5
Recommended Internal (oil side) Connections

Nominal Rating	Maximum Current	Number of Holes	Sides of Spade
1210 A	910 A	1	1
	1210 A	2	1
2410 A	1390 A	1	1
	2410 A	2	2

Notes:
1. Ratings are the maximum current level that can be used with a particular configuration.
2. Ratings are based on maintaining a bushing temperature rise that is no more than 15 degrees above 85 degree top oil temperature (20 degree ambient) when the bushings are conducting rated current (**ANSI®** Standard C57.12.00-1987, Section 5.11)
3. Ratings are based on maintaining a bushing absolute temperature below the level that would damage the insulation system or seal integrity (with top oil temperature in the range of 113-114 degrees absolute) when the bushing is conducting 150% peak load for 24 hours and 191% peak load for 2 hours. (**IEEE Standard C57.92™**-1981, Table 3[d])

(All temperature references are in degrees Celsius)

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