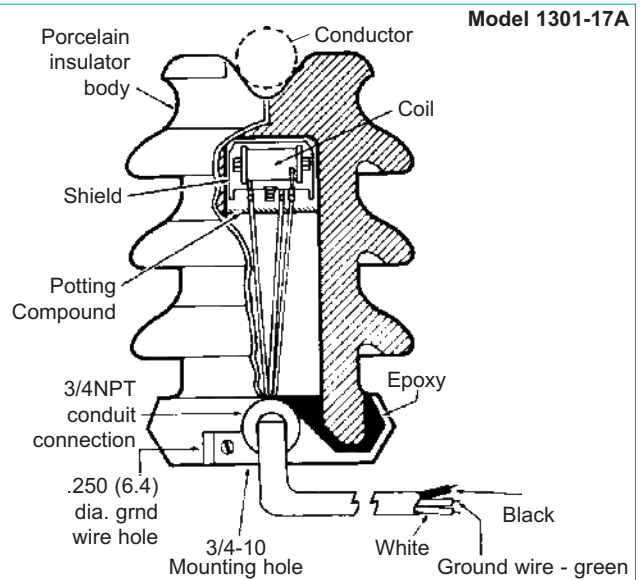


POWERFLEX™

High Accuracy
Line Post Current Sensors



15kV Model 1301-17A **25kV** Model 1301-47A **35kV** Model 1301-27A



POWERFLEX current sensors provide a reliable measuring method for distribution systems...from zero to thousands of amperes. The sensor consists of a porcelain line post insulator with an embedded coil. This coil is inductively coupled to the conductor mounted in the insulator top groove. The voltage induced in the coil is directly proportional to the alternating current in the primary conductor. This signal may be used for capacitor switching, load surveying, or protective relaying. The high accuracy Models 1301-17A, -47A and 27A have a black aluminum base.

The Series 1301 high accuracy sensors may be used interchangeably with all Series 1301 input current sensing controls (except VAR controls). VAR controls are field adjustable for either high accuracy or discontinued standard sensors. Refer to model number cross reference guide on page 4.

The POWERFLEX sensor offers a unique combination of safety, installation without service interruption, space saving, and low installed cost.

- 1. No line cutting or dead ending** is required for installation. Any nonferrous conductor-tie material can be used to fasten the conductor to either sensor. There is no service interruption or loss of revenue.
- 2.** The sensors require no maintenance. They have been designed to **last as long as the porcelain** housing. Rugged and with no moving parts, they withstand continuous high current, transients and switching surges.
- 3.** Because of the sensor's broad operating range, **it will never need to be changed** as loads increase.
- 4. Low output voltage** (only 1 volt for each 60 amperes of line current) eliminates dangerous shock hazard. Output need not be shorted when disconnected.

Characteristics

Performance Characteristics

	High Accuracy
Sensitivity (A / OutputV)	60 a/Vac @60 Hz 72 A/Vac @ 50 Hz
Source Impedance (ohms)	2.1 K = (1.2 K = j1.7K)
Calibration Accuracy at 120 A	1%
Linearity Error, % Change In Sensitivity	< 1.0% (3-1200 A)
Angle Error, 3-600 A, Change In Degrees	< 0.5°
Temperature Error Change In Sensitivity	+/- 0.02%/°C
7th Harmonic Response %, (100% = 7 x 60 Hz output)	82%

Typical Sensor Installation Characteristics

	Amplitude Percent	Angle Degree	
Conductor Size % Correction	See Correction Curve (Page 3)	N/A	
Left and Right * ** Center	-0.8 -1.3	+/-0.5 0.0	
30" Horizontal Phase Spacing Left and Right * ** Center	-0.4 -0.6	+/-0.2 0.0	
20" Vertical Phase Spacing Top Center * Bottom **	+9.1 +3.1 -7.7	+/-3.0 +/-10.9 +/-2.5	
30" Vertical Phase Spacing Top Center * Bottom **	+5.9 +1.4 -5.3	+/-1.9 +/-7.3 +/-1.7	
Triangular Left * ** Center Right	-1.6 +3.8 -2.5	+/-1.5 +/-0.9 +/-2.4	

* Recommended for current sensing.

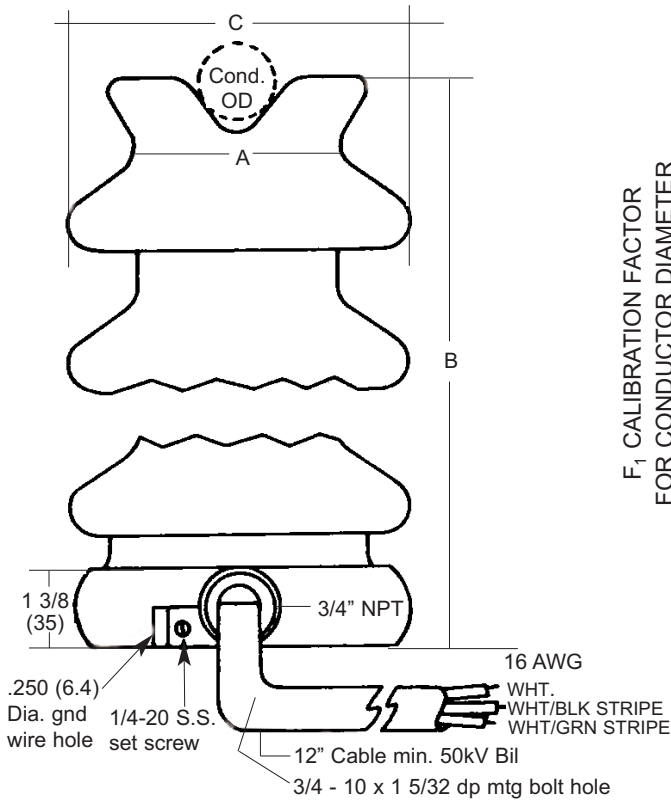
** Recommended for VAr sensing.

Recommend Shielded Cable for Applications Where Power + Sensor Cables are Routed in a Common Conduit.

Specifications

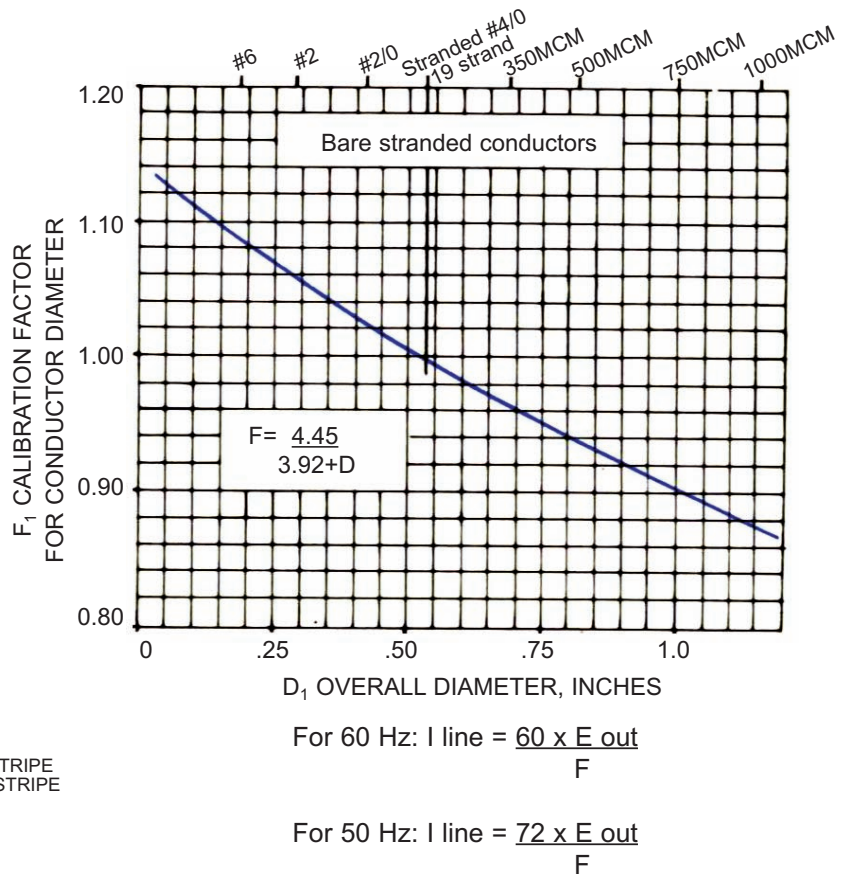
	Model 1301-17A	Model 1301-47A	Model 1301-27A
Nominal 3-phase rating, kV	15	25	35
Maximum operating voltage to ground, kV	9.5	15	22
60 Hz dry flashover, kV	80	95	110
60 Hz wet flashover, kV	55	60	85
Impulse flashover, positive kV	105	140	180
Impulse flashover, negative kV	130	175	205
Impulse withstand, kV	95	130	160
Radio influence test voltage, kV	10	15	22
Radio influence voltage at 1 MHz, microvolts	110	500	500
Dry arcing distance, inches	6.5	9.5	11.5
Leakage distance, inches	11	17	25
Weight, pounds	13	19	28
Cantilever strength, pounds	2000	1700	1500

Mechanical Data



DIMENSIONS A, B, AND C

Model	A	B	C	Max. Cond. Dia.
1301-17A (15kV)	3.3 (84)	9.3 (236)	5.6 (142)	1.5 (38)
1301-47A (25kV)	5.0 (127)	12.5 (317)	7.0 (178)	2.0 (51)
1301-27A (35kV)	5.0 (127)	14.5 (366)	7.0 (178)	2.0 (51)



CORRECTION CURVE The output voltage of a sensor varies inversely with the center-line spacing between the sensing coil and the primary conductor. While output differences are small, it may be desirable to provide correction in certain applications. Variations from the Fisher Pierce standard size of #4/0 bare stranded copper cable are given above. This information is for round conductors only. Information regarding special conditions is available upon request.

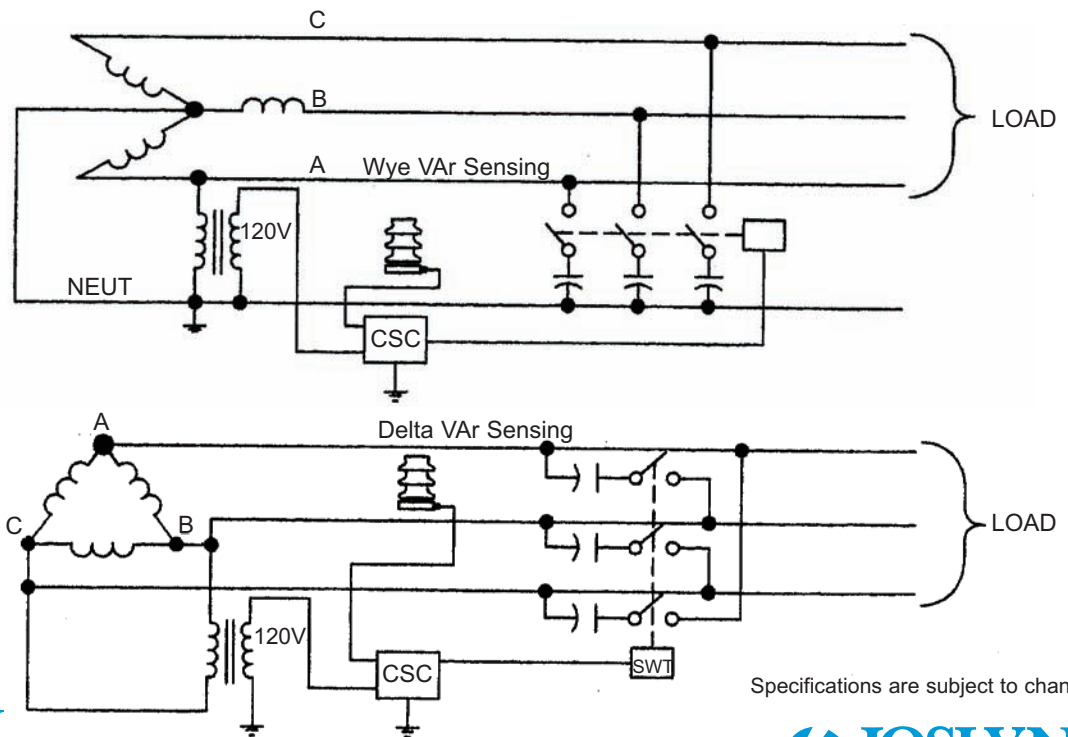
Capacitor Switching Control Model Number Cross Reference

Type of Control	Standard Sensor Series (For Replacement Only)	High Accuracy Sensor Series
Maximum Ampere Demand Register	2551	2551
Current Sensing	4844 (B generation) 4844 (C generation) 4844-(70A/80A Series)	4844 (B generation) 4844 (C generation) 4844-(70A/80A Series)
VAr Sensing	4604 (B generation) 4614 (B generation) 4604 (C generation) 4605 (C generation) 4614 (C generation) 4604-(70A/80A Series) 4605-(70A/80A Series) 4615 (C generation) 4616 (C generation)	Not Applicable - discontinued Not Applicable - discontinued 4620 - discontinued 4621 - discontinued Not Applicable - discontinued 4620-(70A/80A Series) 4621-(70A/80A Series) 4615 (C generation) 4616 (C generation)

Ordering Information

Voltage Class (L-L)	Standard Accuracy (For Replacement Only)	High Accuracy
15kV	1301-11A	1301-17A
25kV	1301-41A	1301-47A
35kV	1301-21A	1301-27A

Installation and Preferred Sensor Location



Specifications are subject to change.



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