

600 Series Portable Fluorescent Extension Light. Model 36a-600 (for 115 V, 60 Hz)

a = Cord length 05 through 20.

650 Series Portable Fluorescent Extension Light. Model ab-650 (for 115 V, 60 Hz)

a = Watts 13, 15 or 36.  
b = Cord length 05 through 99.

Work Station Light. Models SL-4-36-600, SL-6-36-600 and SL-8-36-600 (for 115 V, 60 Hz).

Midget Series Portable Fluorescent Light. Model ab-MIG (for 118 V, 60 Hz)

a = Watts 6 or 8.  
b = Cord length 05 through 99 or CC.

Mighty Series Portable Fluorescent Light. Model 15a-ML (for 118 V, 60 Hz)

a = Cord length 05 through 99.

Handi-Lite Series Portable Fluorescent Light. Model 9a-HL (for 118 V, 60 Hz)

a = Cord length 05 through 99 or CC.

T-5 Series Portable Fluorescent Light. Model 8a-T5 (for 118 V, 60 Hz)

a = Cord length 05 through 99.

T-8 Series Portable Fluorescent Light. Model ab-T8 c (for 118 V, 60 Hz)

a = Watts 14, 15 or 30.  
b = Cord length 05 through 99.  
c = Series SB, DH, SBDH or blank.

T-12 Series Portable Fluorescent Light. Model ab-T12 c (for 118 V, 60 Hz)

a = Watts 14, 20 or 40.  
b = Cord length 05 through 99.  
c = Series BH or blank.

#### **O'Brien Corp, 1900 Crystal Industrial Court, Saint Louis MO 63114**

Instrument Heater. Models CW-918, CW-918L. Provides freeze protection and temperature maintenance for equipment enclosures which house pneumatic and/or electronic instrumentation. Rated at 100, 150 or 200 W (CW-918) or 50, 75 or 100 W (CW-918L) at 120 or 240 V ac, 50/60 Hz. Has a T2D (419°F, 215°C) temperature rating. Suitable for Class I, Divisions 1 and 2, Groups A, B, C and D hazardous locations.

NI / I / 2 / ABCD; DIP / II,III / EFG; AEx n IIC

Instrument Heater. Models CT1D2, CT2D2, CT3D2, CT4D2.

P/N W4260ab

a = Nominal temperature 160°, 120°, 85°, 60°C (320°, 248°, 185°, 140°F).  
b = Optional st. st. heater block.

XP / I / 1 / ABCD; DIP / II,III / EFG; AEx d IIC

Instrument Heater. Models CT1D1, CT2D1, CT3D1, CT4D1.

P/N W4260ab

a = Nominal temperature 160°, 120°, 85°, 60°C (320°, 248°, 185°, 140°F).  
b = Optional st. st. heater block.

## **TRANSFORMER FLUIDS**

These fluids are Approved as components for use in FM Approved liquid-insulated transformers. Use of a less-flammable or nonflammable transformer fluid, by itself, does not render a transformer Approvable. Approval Standard 3990 describes the other required criteria for Approval of a transformer assembly.

### **Less Flammable Transformer Fluids**

Less flammable transformer fluids are used in the cooling and insulating of liquid-cooled transformers. They have a fire point greater than 572°F (300°C) when tested per ASTM D-92.

#### **ABB Inc, 1021 Main Campus Dr, Raleigh NC 27606**

BIOTEMP® Less-Flammable Transformer Fluid.

**Cooper Power Systems, Fluids Products, 1900 E North St, Waukesha WI 53188**

Envirotemp® FR3™ Natural Ester-Based Transformer Insulating Fluid.  
R-Temp™ Fluid.

**Dielectric Systems Inc, Box 420, Tyler TX 75710**

Alpha-1 Fluid.  
Beta Fluid.

**The Dow Chemical Company, 2030 Dow Center, Midland MI 48648**

Transformer Fluid L-305.  
Y-7582 Silicone Transformer Fluid.

**Dow Corning Corp, Midland MI 48686**

Dow Corning 561 Silicone Transformer Fluid.

**Equilon Enterprises LLD, 1100 Louisiana, Houston TX 770082**

Shell Diala HFX.

**General Electric Co, General Electric Silicones, 260 Hudson River Rd, Waterford NY 12188**

Silicone Dielectric Fluid SF97-50.

**M&I Materials Ltd, Box 136, Manchester M60 1AN, England**

MIDEL 7131, biodegradable less flammable transformer insulating fluid.

## Nonflammable Transformer Fluids

Nonflammable Transformer Fluids do not exhibit any fire point up to their boiling point when tested per ASTM D-92. In addition, they do not exhibit fire point after being conditioned for four hours at 100°F (38°C) while being completely agitated.

Nonflammable transformer fluids are for use in new transformer assembly and as an askarel substitution fluid. Askarel substitution fluids may also find application in new transformer construction.

**The 3M Co, 3M Center, Saint Paul MN 55144**

PF-5060.

## LESS OR NONFLAMMABLE LIQUID INSULATED TRANSFORMERS

These transformers comply with ANSI/IEEE C57.12.00 and FM Approval Standard 3990 for liquid insulated distribution and power transformers. They are of the 35 kV Class or lower, rated at 5 kVA or greater and are insulated with FM Approved less or nonflammable transformer fluids. Naturally cooled (OA) class transformers are limited to a maximum rating of 10,000 kVA. They are equipped with electrical protection for clearing of high and low current faults. Tanks are capable of withstanding an internal pressure of 20 psi (140 kPa) for cylindrical type, 15 psi (105 kPa) for rectangular type, without rupture and they are equipped with pressure relief devices.

**ABB Inc, 500 West Highway 94, Jefferson City MI 65101-5032**

Single Phase Distribution Transformers (Product Codes B, D, and E), 10 to 250 kVA, System voltages up to 35 KV, Class OA.  
Three Phase Distribution Transformers (Product Codes F and V), 30 to 2500 kVA, System voltages up to 35 KV, Class OA.

**ABB Power T & D Co Inc, Small Transformer Div, 2135 Philpott Rd S, Boston VA 24592**

Three Phase: Pad mount and Substation, 250 to 20,000 kVA System voltages up to 35 kV; OA or OA/FA cooling class; 55° or 65°C (99° or 117°F) temperature rise.

**Cooper Power Systems, Fluids Products, 1900 E North St, Waukesha WI 53188**

Envirotran™, Envirotran K-Plus™, R-Tran™ and R-Tran K-Plus™ Transformers.  
Single Phase: Pole mount, 5 to 500 kVA; Pad mount, 10 to 167 kVA; Substation, 250 to 4000 kVA.  
Three Phase: Pole mount, 30 to 300 kVA; Pad mount, 45 to 7500 kVA; Substation, 150 to 10,000 kVA.  
System voltages up to 35 kV; OA or OA/FA cooling class; 65°C (117°F) temperature rise standard, 55°C (99°F) rise optional.

**Eaton Cutler-Hummer, 221 Heywood Rd, Arden NC 28704**

Three Phase: Pad mount and Substation, 250 to 20,000 kVA System voltages up to 35 kV; OA or OA / FA cooling class; 55° or 65°C (99° or 117°F) temperature rise.