



Agency Certifications, Recognition and Approvals

WATROD™ and FIREBAR® Element and Assemblies 554



Agency Certifications, Recognition and Approvals



WATROD™ and FIREBAR® Element and Assemblies

Agency Recognition

UL® and CSA recognition information charts are provided to ensure:

- Safety parameters in relationship to stated voltage and amperage
- Approved sheath materials, end seals and assembly electrical enclosures

Watlow® believes that UL® and CSA recognition information is necessary to confirm the reliability of our heating products in relationship to your application. As such, the accompanying *Agency Recognition* charts illustrate the extent of coverage each heater type provides. Specific end use application information is required for each agency marking. Some products carry U.S. and Canada approvals.



UL® Recognition and Listing

File Number E52951 (UL® 499) – Component Recognition

All information for UL® File #E52951 can be found in the UL® Directory, Volume 2 under “Heaters Miscellaneous” (Classification KSOT2).

Elements (Volume 2, Section 1)

| WATROD Diameter | | Allowable Part Numbers | Max. Volts | Max. Watt Density | | Min. Bend Radius | Allowable Sheath Materials | End Seal Types |
|-----------------|--------|------------------------|--------------|-------------------|-------------------|------------------|---|---|
| in. | (mm) | | | W/in ² | W/cm ² | | | |
| 0.210 | (6.0) | RK series | U0-xx | 250 | ① | ① | Nickel alloy 400, 600, 800, 840, 800H, 304, 316 SS, Steel, Titanium, Copper coated steel, Hastelloy C22, C276 | Epoxy resin, Lavacone, Silicone resin, Silicone rubber, Silicone fluid, Ceramic potting |
| 0.260 | (6.6) | RA series | U1-xx | 250 | | | | |
| 0.315 | (8.0) | RB series | U3-xx | 480 | | | | |
| 0.375 | (9.5) | RD, RS series | U5-xx | 480 | | | | |
| 0.430 | (10.9) | RC series | U6-xx | 600 | | | | |
| 0.475 | (12.0) | RG series | U7-xx | 600 | | | | |

① Dependent on application, contact your Watlow representative.

Note: All end seal types apply to all diameter heaters.

Elements (Volume 2, Section 6)

| MULTICOIL Diameter | | Allowable Part Numbers | Max. Volts | Max. Watt Density | | Min. Bend Radius | Allowable Sheath Materials | End Seal Types |
|--------------------|--------|------------------------|------------|-------------------|-------------------|---|---|----------------|
| in. | (mm) | | | W/in ² | W/cm ² | | | |
| 0.375 | (9.5) | U5M series | ① | ① | ① | Nickel alloy 800, 840, 304, 316 SS, Steel, Titanium | Epoxy resin, Silicone resin, Silicone rubber, Lavacone, Ceramic potting, Silicone fluid | |
| 0.430 | (10.9) | U6M series | | | | | | |
| 0.475 | (12.0) | U7M series | | | | | | |

① Dependent on application, contact your Watlow representative.

Notes: All end seal types apply to all diameter heaters.

UL® and CSA must be requested at the time order is placed.



WATROD and FIREBAR Element and Assemblies

UL® Recognition and Listing (Continued)

Elements (Volume 2, Section 4)

| FIREBAR Height in. (mm) | Allowable Part Numbers | Max. Volts | Max. Watt Density W/in ² W/cm ² | Min. Bend Radius | | Allowable Sheath Materials | End Seal Types |
|--------------------------------------|----------------------------------|------------|--|------------------------|------------------------|-------------------------------|---|
| | | | | Major Axis in. (mm) | Minor Axis in. (mm) | | |
| Air or Immersion Heating | | | | | | | |
| 5/8 (16) | FA, FS series Axxx | 480 | ① | 1 (25) | ① | Nickel alloy 800, 840, 304 SS | Epoxy resin, Lavacone, Silicone resin, Silicone rubber, Silicone fluid, Ceramic potting |
| 1 (25) | FS series | 480 | | 1 (25) | | | |
| Liquid Immersion Heating Only | | | | | | | |
| 5/8 (16) | FA, FS series Uxxx | 480 | ① | 1 (25) | ① | Nickel alloy 800, 840, 304 SS | Epoxy resin, Lavacone, Silicone resin, Silicone rubber, Silicone fluid, Ceramic potting |
| 1 (25) | FS series | 480 | | 1 (25) | | | |

① Dependent on application, contact your Watlow representative.

Notes: All sheath materials and end seal types apply to all diameter heaters. UL® and CSA must be requested at the time order is placed.

Assemblies

Refer to applicable WATROD and FIREBAR elements for maximum voltage, watt density and sheath materials.

| Heater Type | Allowable Part Numbers | Electrical Enclosure Options |
|---------------|---|--|
| Screw Plug | All catalog models B Series U1 to U7 | General purpose or moisture resistant with or without thermostat |
| Flange | All catalog models FE, FG, FH, FK, FL, FM, FN, FO, FP, FR, FS, FT, FW —Series U1 to U9 | General purpose or moisture resistant with or without thermostat |
| Circulation | All catalog models CB, CF, CP Series U1 to U7 | General purpose or moisture resistant with or without thermostat |
| Over-the-Side | All catalog models OL and OR Series U1 to U7 , except U2 and U4 | Moisture resistant with or without thermostat |
| Duct | All catalog models D6 to D125 , MDH6 to MDH60 , LDH9 to LDH225 Series U0 to U7 | General purpose enclosure only |

Note: If CE Marking to the 2014/35/EU European Low Voltage Directive (LVD) is required please contact your Watlow representative.

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WATROD and FIREBAR Element and Assemblies

CSA Certification

File Number LR 31388

All information for CSA file LR 31388 can be found in the *CSA List of Certified Electrical Equipment* catalog, Volume II, under Heaters—Miscellaneous.

Elements

| Heater Type— Diameter/Height in. (mm) | Allowable Part Numbers | Max. Volts | Max. Watt Density W/in ² (W/cm ²) | | Allowable Sheath Materials ^④ | End Seal Type (All Diameters) |
|---|---------------------------------|---------------|--|--------|---|--|
| WATROD: | | | | | | |
| 0.260 (6.6) | All catalog models, 1-xx | 250 | 120 | (18.5) | Nickel alloy 400, 600, 800, 840, 304, 316 SS, Steel, Copper coated steel | Epoxy resin, Lavacone, Silicone resin, Silicone rubber, Ceramic, Silicone fluid |
| 0.315 (8.0) | All catalog models, 3-xx | 480 | 120 | (18.5) | | |
| 0.375 (9.5) | All catalog models, 5-xx | 600 | 120 | (18.5) | | |
| 0.430 (10.9) | All catalog models, 6-xx | 600 | 120 | (18.5) | | |
| 0.475 (12.0) | All catalog models, 7-xx | 600 | 120 | (18.5) | | |
| FIREBAR: | | | | | | |
| ⁵ / ₈ (15.9) | FA, FS models, 4-xx | 480 | 120 | (18.5) | Nickel alloy 800, 840 304 SS | Epoxy resin, Lavacone, Silicone resin, Silicone rubber Ceramic, Silicone fluid |
| 1 (25.0) | FB, FS models, 2-xx | 480 | 120 | (18.5) | | |
| MULTICELL: Contact Watlow | | | | | | |

^④ Some sheath materials not available on all diameters. Contact your Watlow representative.

Note: Heating elements are certified only for use in equipment where the acceptability of the construction combination is determined by the Canadian Standards Association.

Note: All sheath materials and end seal types apply to all diameter heaters.

Assemblies

| Heater Type | Allowable Part Numbers | Electrical Enclosure Options |
|---------------|---|---|
| Screw Plug | Catalog series “ B ” Series 1-xx to 7-xx | General purpose with or without thermostat Enclosure 4 with or without thermostat |
| Flange | Catalog series “ F ” Series 1-xx to 7-xx | General purpose with or without thermostat Enclosure 4 with or without thermostat ^⑤ |
| Circulation | Catalog series “ C ” Series 1-10 to 7-10 | General purpose with or without thermostat Enclosure 4 with or without thermostat ^⑤ |
| Over-the-Side | Catalog series “ OL ” and “ OR ” Series 1-30 to 7-30 | Enclosure 4 with or without thermostat |
| Duct | Catalog series “ D ”, “ LDH ” and “ MDH ” Series 1-1 to 7-1 | General purpose enclosure only |

^⑤ 4, 5, 6 and 8 inch flange size only.

File Number LR 61707—Heater Assemblies—Miscellaneous—For Hazardous Locations

| Heater Type | Allowable Part Numbers | Electrical Enclosure Options |
|-------------|---|---|
| Screw Plug | Catalog series “ B ” Series 1-xx to 7-xx | Class 1, Div. 1 and 2, Groups B, C and D and enclosure 4 with or without thermostat |
| Flange | Catalog series “ F ” Series 1-xx to 7-xx , 700 , 701 , 702 , 703 , 704 , 713 , 714 | Class 1, Div. 1 and 2, Groups B, C and D and enclosure 4 with or without thermostat |
| Circulation | Catalog series “ C ” Series 1-10 to 7-10 | Class 1, Div. 1 and 2, Groups B, C and D and enclosure 4 with or without thermostat |

Note: UL[®] and CSA must be requested at the time the order is placed.



WATROD Element Assemblies

Watlow can provide flange heaters with European ATEX or International IECEx certifications for Flameproof (Ex 'db') and increased safety (Ex 'eb') protection methods. Contact your Watlow representative for details.

SERIES F Flange Heaters:

IECEx Certification IECEx CSA 09.0010X

ATEX Certification SIRA10ATEX1155X

SERIES FE Flange Heaters:

IECEx Certification IECEx SIR 12.0056X

ATEX Certification SIRA12ATEX3082X