

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 in. (mm)	Allowable Part Numbers			Max. Volts	Max. Watt Density W/in ² W/cm ²		Min. Bend Radius in. (mm)	Allowable Sheath Materials	End Seal Types
	Series	Part Number	RO/R1/R3/R5/R6/R7						
0.210 (6.0)	RK series	U0-xx	xxxxx-xxxx	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	xxxxx-xxxx	250					
0.315 (8.0)	RB series	U3-xx	xxxxx-xxxx	480					
0.375 (9.5)	RD, RS series	U5-xx	xxxxx-xxxx	480					
0.430 (10.9)	RC series	U6-xx	xxxxx-xxxx	600					
0.475 (12.0)	RG series	U7-xx	xxxxx-xxxx	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 in. (mm)	Allowable Part Numbers		Max. Volts	Max. Watt Density W/in ² W/cm ²		Min. Bend Radius in. (mm)	Allowable Sheath Materials	End Seal Types
	Series	Part Number						
0.375 (9.5)	U5M series	xxxxx-xxxx	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	xxxxx-xxxx						
0.475 (12.0)	U7M series	xxxxx-xxxx						

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.

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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
	FA, FS series	Axxx	xxxxx-xxxx FS4			Major Axis in. (mm)	Minor Axis in. (mm)		
5/8 (16)	FA, FS series	Axxx	xxxxx-xxxx FS4	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		xxxxx-xxxx FS2	480		1 (25)			

Air or Immersion Heating

Liquid Immersion Heating Only

5/8 (16)	FA, FS series	Uxxx	xxxxx-xxxx FS4	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		xxxxx-xxxx FS2	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 xxxxx-xxxx SP1 to SP7	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 xxxxx-xxxx FL1 to FL9	General purpose or moisture resistant with or without thermostat
Circulation	All catalog models CB, CF, CP Series U1 to U7 xxxxx-xxxx CSP1 to CSP7 xxxxx-xxxx CFL1 to CFL7	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 xxxxx-xxxx OR1, OR3, OR5, OR6 or OR7 xxxxx-xxxx OL1, OL3, OL5, OL6 or OL7	Moisture resistant with or without thermostat
Duct	All catalog models D6 to D125 , MDH6 to MDH60 , LDH9 to LDH225 Series U0 to U7 xxxxx-xxxx D1 to D7 xxxxx-xxxx LDH1 to LDH7 xxxxx-xxxx MDH1 to MDH7	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	xxxxx-xxxx R1	250	120 (18.5)	Nickel alloy 400 600, 800, 840, 304, 316 SS, Steel, Copper coated steel
0.315 (8.0)	All catalog models, 3-xx	xxxxx-xxxx R3	480	120 (18.5)	
0.375 (9.5)	All catalog models, 5-xx	xxxxx-xxxx R5	600	120 (18.5)	
0.430 (10.9)	All catalog models, 6-xx	xxxxx-xxxx R6	600	120 (18.5)	
0.475 (12.0)	All catalog models, 7-xx	xxxxx-xxxx R7	600	120 (18.5)	
FIREBAR:					
⁵ / ₈ (15.9)	FA, FS models, 4-xx,	xxxxx-xxxx FS4	480	120 (18.5)	Epoxy resin, Lavacone, Silicone resin, Silicone rubber, Ceramic, Silicone fluid
1 (25.0)	FB, FS models, 2-xx	xxxxx-xxxx FS2	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	xxxxx-xxxx SP1 to SP7	General purpose with or without thermostat Enclosure 4 with or without thermostat
Flange	Catalog series " F " Series 1-xx to 7-xx	xxxxx-xxxx FL1 to FL9	General purpose with or without thermostat Enclosure 4 with or without thermostat ^⑤
Circulation	Catalog series " C " Series 1-10 to 7-10	xxxxx-xxxx CSP1 to CSP7 xxxxx-xxxx CFL1 to CFL7	Enclosure 4 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	xxxxx-xxxx OR1, OR3, OR5, OR6 or OR7 xxxxx-xxxx OL1, OL3, OL5, OL6 or OL7	Enclosure 4 with or without thermostat ^⑤
Duct	Catalog series " D ", " LDH " and " MDH " Series 1-1 to 7-1	xxxxx-xxxx D1 to D7 xxxxx-xxxx LDH1 to LDH7 xxxxx-xxxx MDH1 to MDH7	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	xxxxx-xxxx B1 to B7	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	xxxxx-xxxx F1 to F7	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	xxxxx-xxxx C1 to C7	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 'd') and increased safety (Ex 'e') 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