



## Water Quality for SCR Contactors

For correct water quality, pressure and flow rate for SCR Contactors, Darrah recommends following the guidelines as written in **Bulletin #5, Resistance Welding Control Standard**, published by the **Resistance Welding Manufacturer's Association**.

Following are the specifications for direct water cooled and indirect water cooled SCR Contactors. For more information it is recommended to contact the RWMA.

### **Bul5-005.04 SPECIFICATION FOR DIRECT WATER COOLED SCR CONTACTORS.**

See also RWMA Bulletin 16, section 1.6.4 for additional requirements of the cooling water.

- .01 Water flow rate shall be 1.2 G.P.M. minimum. Some larger SCR Contactors require greater flow rate.
- .02 Maximum water pressure shall be 90 P.S.I.G.
- .03 Resistivity greater than 2000 ohms/cm at 25°C (77°F)
- .04 Power should be removed from the SCR in less than 10 minutes if the cooling water is not flowing and the resistivity of the water is less than 5000 ohm/cm. If the water circulation is stopped when the power is still on, current through the water will eventually heat the hose material and embed contamination resulting in destruction of the hose. The use of water savers for Contactor cooling are not recommended for the above reasons. If Isolation Contactors remove the power from the SCR module, hose destruction is eliminated as there is no current to cause damage.
- .05 Hoses for directly water cooled SCRs should be a non-conductive type of 3/8" inside diameter. This hose must not be shorter than 18 inches in length.
- .06 Cooling Water temperature should be no greater than 104°F (40°C) without derating the devices. To prevent condensation on the cooled components, water temperature should not be less than the existing dew point of the ambient air (approximately 70°F).
- .08 Maintain a pH between 7.0 and 8.0
- .09 Maximum Chloride content of 20 PPM.
- .10 Maximum Nitrate content of 10 PPM.

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- .11 Maximum Sulfate content of 100 PPM.
- .12 Maximum solids content of 250PPM.
- .13 Maximum Calcium Carbonate content of 250 PPM.

### **Bul 5-005.05 SPECIFICATIONS FOR INDIRECT WATER**

- .01 Minimum water flow rate of 1.2 G.P.M.
- .02 Maximum water pressure shall be 90 P.S.I.G.
- .03 Water temperature no greater than 104°F (40°C)
- .04 To prevent condensation on the cooled components, water temperature should not be less than the existing dew point of the ambient air (approximately 70°F).
- .05 Maintain a pH between 7.0 and 8.0.
- .06 Maximum Chloride content of 20 PPM.
- .07 Maximum Nitrate content of 10 PPM.
- .08 Maximum Sulfate content of 100 PPM.
- .09 Maximum solids content of 250 PPM.
- .10 Maximum Calcium Carbonate content of 250 PPM