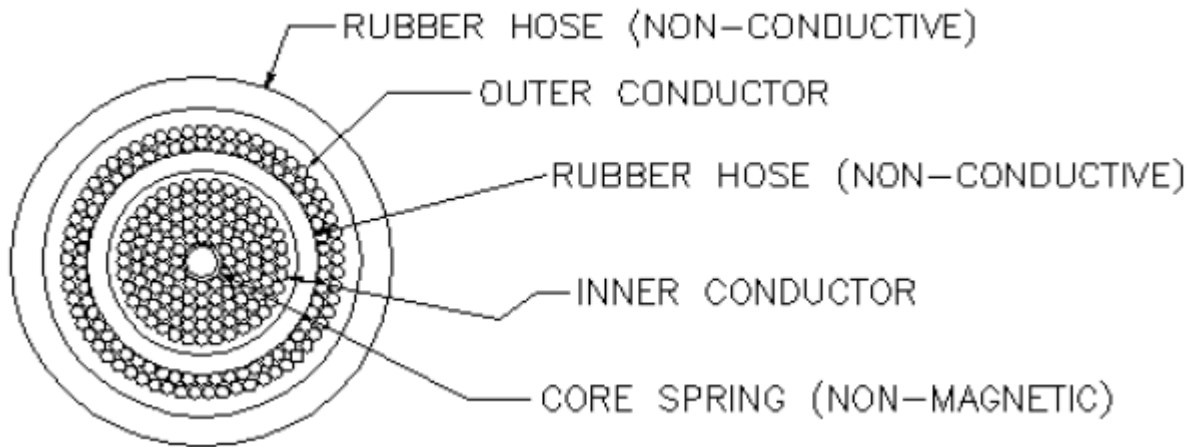


Water Cooled Cable

Two Conductor Coaxial



General Properties:

Cable Size (MCM)	OD (Inches)	Min Bend Dia (Inches)	Dry Wt. (lbs/ft)	Wet Wt. (lbs/ft)	Rdc (Ω /pair-foot)
300	2.62	21	4.00	6.00	0.000 076
1000	3.62	29	10.20	13.00	0.000 022
1500	5.00	40	15.00	19.00	0.000 014
2000	5.50	44	20.00	24.00	0.000 010
2500	5.50	44	23.00	26.00	0.000 009
3000	6.00	48	27.00	31.00	0.000 007
3500	6.00	48	30.00	33.00	0.000 006
4000	6.00	48	33.00	36.00	0.000 005
6000	7.50	60	49.00	52.00	0.000 004

Electrical Properties at 60 CPS:

Cable Size (MCM)	Nominal Current (amps)	Rac (Ω /pair-foot)	Z (Ω /pair-foot)
300	1,400	0.000 077	0.000 076
1000	4,700	0.000 023	0.000 027
1500	7,000	0.000 016	0.000 023
2000	9,400	0.000 012	0.000 021
2500	11,700	0.000 011	0.000 019
3000	14,100	0.000 009	0.000 018
3500	16,500	0.000 008	0.000 017
4000	18,800	0.000 007	0.000 016
6000	28,300	0.000 006	0.000 018



Water Cooled Cable

Two Conductor Coaxial

Electrical Properties at 3000 CPS:			
Cable Size (MCM)	Nominal Current (amps)	Rac (Ω /pair-foot)	Z (Ω /pair-foot)
300	600	0.000 187	0.001 035
1000	1175	0.000 088	0.000 726
1500	1290	0.000 087	0.000 828
2000	1590	0.000 071	0.000 829
2500	2020	0.000 058	0.000 785
3000	2540	0.000 050	0.000 797
3500	2750	0.000 048	0.000 765
4000	2800	0.000 047	0.000 725
6000	4350	0.000 039	0.000 830

Cable Selection:

Make a preliminary selection based on the Nominal Current Capacity. Then check the voltage drop, power loss, and water flow rate, to make sure it is appropriate for your application.

Calculations:

POWER LOSS (watts) = $I^2 R_{ac} L$

VOLTAGE DROP (volts) = $I Z L$

MIN WATER FLOW RATE (gpm) = $I^2 R_{ac} L / 4410$

Note: The water flow rate formula is based on a water temperature rise of 30F. Also, we do not recommend designing for a flow rate of less than 2 gpm.

Abbreviations and symbols:

Pair-foot: One foot of "go" conductor and one foot of "return"

MCM: Area of wire, in thousands of circular mils

Rac : AC Resistance, in ohms / pair-foot

Z : AC Impedance, in ohms / pair-foot

I : Current, in amps

L: Cable length, in feet

Design Limits:

Maximum water inlet temperature: 90F

Maximum water outlet temperature: 150F

Maximum water pressure (psi): 80

Disclaimer:

Over time, the stranding in any cable has a tendency to deteriorate. We suggest using a substantial safety margin to allow for this. We believe this data is accurate, however we provide no guarantee. All calculations should be verified by test.

