

Calculation of Max number of devices in a loop			27/09/02 Issue v1.02
1.5mm <sup>2</sup> 2core MICC cable			
Number of SCI 5/6	48 Ohms Impedance	24 Ohms Impedance	12 Ohms Impedance
0	2000	1000	500
5	1958	958	458
10	1917	917	417
15	1875	875	375
20	1833	833	333
25	1792	792	292
30	1750	750	250
35	1708	708	208
40	1667	667	167
45	1625	625	125
50	1583	583	83
<b>Max Current(mA)</b>	83	167	333

EXAMPLE		
Cable Length	QTY of Add. Sounders	QTY of Sensors
1.5mm <sup>2</sup> 2core MICC cable	6.5mA Current draw	>200uA per sensor
250m	31	95
500m	31	95
750m	14	112
1000m	14	112
1500m	6	120
2000m	6	120

2.5mm <sup>2</sup> 2core FP200 cable			
Number of SCI 5/6	32 Ohms Impedance	16 Ohms Impedance	8 Ohms Impedance
0	2000	1000	500
5	2000	1000	500
10	2000	1000	500
15	2000	1000	500
20	2000	1000	500
25	2000	1000	500
30	2000	1000	500
35	2000	1000	500
40	2000	1000	500
45	2000	1000	500
50	2000	1000	500
80	2000	1000	500
85	1885	1000	500
90	1770	1000	500
95	1655	1000	500
100	1540	1000	500
105	1425	1000	500
110	1310	1000	500
115	1195	1000	500
120	1080	1000	500
125	965	1000	500
<b>Max Current(mA)</b>	83	98	121

THIS INFORMATION IS FOR GUIDANCE ONLY, FOR FURTHER DETAILS PLEASE CONTACT NITTAN (UK) LTD TECHNICAL DEPARTMENT FOR FURTHER INFORMATION.

For each SCI subtract 0.2ohms to calculate allowable cable length  
 FP200 Gold 1.5mm = 14.4Ohms/Km/Core  
 4 volt drop allowed at end of loop (from 24v to 20v)  
 48/24/12 = cable impedance for length

Number of sounders (based on max loop current allowed minus number of sensors, current of each 200uA, divided by addressable sounder current (assumed to be 6.5mA))

Sensor QTY	Quiescent I	Quiescent I Total
25	5,000uA	5mA
50	10,000uA	10mA
75	15,000uA	15mA
100	20,000uA	20mA

FP200 2.5mm  
 Assume total loop impedance must not exceed 48 Ohms  
 2.5mm FP200 Gold = 8.8 Ohms/Km/Core and SCI is 0.2 Ohms each