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Thermometry Cable **P**inout for SHARC II

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Caltech

1. **P**inout

The cryogenic thermometry cable has a 66-pin circular female connector on one end (MS27484T18D35S) and terminates at various locations in the Dewar on the other. The wiring is heatsunk with two 3/8"-16 aluminum screws. The connector end was assembled by Bob Hirsch at Yerkes in early 1999. The cable was installed in SHARC II in early 2000. The default wiring is red/green twisted pairs of 0.005" manganin from California Fine Wire. High current wiring is 32AWG phosphor-bronze from LakeShore.

Table 1. Thermometry Cable Pinout

Signal	Internal Pin	66-pin Circular	Filtered 78-pin D
<i>** Dewar warming (3 heavy tw. pr.) **</i>			
VC coldplate heater, 500 Ω /10 watt (heavy wire)		1,2	4,24
(no connect)		(3)	
LHe coldplate heater, 250 Ω /25 watt (heavy wire)		4,5	44,64
VC block heater, 500 Ω /10 watt (heavy wire)		6,7	43,63
<i>*** Dewar thermometry (4 loose tw. pr.) **</i>			
V.C. plate diode D14704		+8,9	+6,26
LHe coldplate diode D14702		+10,11	+46,66
LN2 coldplate diode D14705		+12,13	+45,65
fridge ^4He capillary diode D33727		+14,15	+5,25
(no connect)		(16)	
<i>** refrigerator (2 heavy tw. pr. + 2 thin tw. pr.) **</i>			
^4He heat (heavy wire)		17,18	8,28
^3He heat (heavy wire)		19,20	48,68
^4He diode		+21,22	+47,67
^3He diode		+23,24	+7,27
<i>** subkelvin thermometry (short black mark) **</i>			
G.R.T. 27830 1I		+25,26	+10,30
G.R.T. 27830 1V		+27,28	+50,70
G.R.T. 2I		+29,30	+49,69
G.R.T. 2V		+31,32	+9,29
(no connect)		(33)	
<i>** subkelvin temp. control (5 thin tw. pr.) **</i>			
bias A+, bias A-		+34,35	
bias B+, bias B-		+36,37	
bias C+, bias C-		+38,39	
heater		40,41	
drain		42	
<i>** (long green mark) **</i>			
out A, out B1		+43,44	
out C, out B2		+45,46	
FET heater		47,48	
FET therm.		+49,50	

Table 1—Continued

Signal	Internal Pin	66-pin Circular	Filtered 78-pin D
<i>** pointing pixels (long red mark) **</i>			
bias X+, bias X-		+51,52	
bias Y+, bias Y-		+53,54	
bias Z+, bias Z-		+55,56	
drain		57	
<i>** (3 thin tw. pr.) **</i>			
out X+, out X-		+58,59	
out Y+, out Y-		+60,61	
out Z+, out Z-		+62,63	
(no connect)		(64-66)	