Temperature instrument selection guide

Lake Shore CRYOTRONICS
a DwyerOmega brand

Temperature measurement range

50 mK | 100 mK | 300 mK | 1 K | 1.2 K | 1.4 K | 2 K | >4.2 K

Maximum heater power

Number of sensor inputs

Standard inputs | Optional expansion

USB Ethernet GPIB		Model 372	10 W 1 W 1 W	2	to 17
USB Ethernet GPIB		Model 350	75 W 1 W	4	to 8
USB Ethernet GPIB		Model 346	100 W 100 W 100 W 100 W 1 W 1 W 1 W 1 W	10	to 26
USB Ethernet GPIB		Model 336	100 W 50 W	4	to 8
USB Ethernet GPIB		Model 335	75 W 1 W or 50 W 25 W	2	
Serial GPIB		Model 325	25 W 2 W	2	
USB Ethernet GPIB		Model 224		12	
USB PROFIBUS		Model 240		2	240–2P
				8	240–8P
Serial GPIB		Model 218		8	
Serial		Model 211		1	

Typical applications

- Pumped He-3 systems 300 mK
- ADRs 50 mK to 100 mK
- Dilution refrigerators 5 mK to 50 mK
- Pumped He-4 systems 1.4 K
- Closed-cycle refrigerators 2 K to 4 K
- Flow He-4 cryostats, simple Dewars/cryostats ≥4.2 K

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	Controllers						Monitors			
	372	350	346	336	335	325	224	240-2P/8P	218E/S	211N/S
Min temp	<5 mK	100 mK	300 mK	300 mK	300 mK	1.2 K	300 mK	1 K	1.4 K	1.4 K
Max temp	420 K	1500 K	1500 K	1500 K	1500 K	1500 K	1500 K	800 K	873 K	873 K
Sensor inputs	2 to 17	4 to 8	10 to 26	4 to 8	2	2	12	2/8	8	1
Excitation current	1 pA to 31.6 mA	10 nA to 1 mA	100 nA to 1 mA	100 nA to 1 mA	100 nA to 1 mA	10 µA to 1 mA	100 nA to 1 mA	10 µA	10 µA to 1 mA	10 µA to 1 mA
Current reversal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	—	—	—
Number of heaters	3	2	8	2	2	2	—	—	—	—
Total power	10 W	75 W	400 W	150 W	75 W	25 W	—	—	—	—
Heater outputs	10 W	75 W	100 W × 4	100 W	75 W or 50 W	25 W	—	—	—	—
	1 W × 2	1 W	1 W × 4	50 W	1 W or 25 W	2 W	—	—	—	—
I/O	±10 V	±10 V × 2	2 (digital)	±10 V × 2	±10 V	0 to 10 V	—	—	0/(±10 V × 2)	0 to 10 V
Number of alarms	34	4 to 8	10	4 to 8	2	—	16	—	16	2
Number of relays	2	2	2	2	2	—	2	—	0/8	2
IEEE–488	Yes	Yes	Option	Yes	Yes	Yes	Yes	—	–/Yes	—
RS–232C	—	—	—	—	—	Yes	—	—	Yes	Yes
USB	Yes	Yes	Yes	Yes	Yes	—	Yes	—	—	—
Ethernet	Yes	Yes	Yes	Yes	—	—	Yes	Yes	—	—
Profibus	—	—	—	—	—	—	—	Yes	—	—

	Sensors		
	Model number	Min temp[1]	Max temp[1]
ULT Rox™	RX-102B	5 mK	40 K
Interchangeable Rox	RX-102A	50 mK	40 K
	RX-202A	50 mK	40 K
	RX-103A	1.4 K	40 K
Cernox®	CX1010	100 mK	420 K
	CX1030	300 mK	420 K
	CX1050	1.4 K	420 K
	CX1070	4 K	420 K
	CX1080	20 K	420 K
Silicon Diode	DT-670	1.4 K	500 K
Platinum	PT-103	14 K	873 K
	PT-111	14 K	673 K

[1] *Temperature range will vary on packaging*