



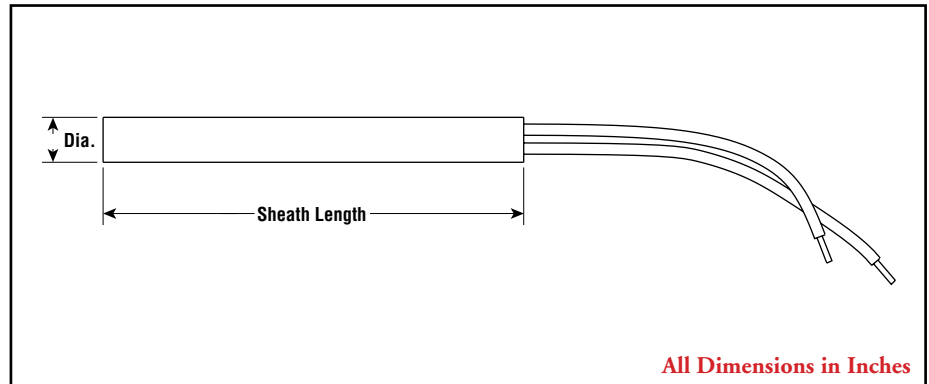
CIR/CIRM

CIR 1/8" to 1-1/4" dia.
CIRM 6mm to 20mm dia.
Cartridge Heater



- 50 - 5,000 Watts
- Up to 480 Volt
- 1" to 60" Sheath Lengths
- INCOLOY® or Stainless Steel Sheath

Dimensions



Applications

- Dies and Molds
- Packing Machinery
- Laminating/Adhesives
- Hot Glue Melting
- Lead Melting
- Medical Application
- Extruding Dies
- Stamping and Marking Machine

Features

Leads can be bent at right angle near the heater without exposing bare wire therefore eliminating electrical shorts.

Sheath Material — Type CIR & CIRM cartridge heaters are made with a high-temperature INCOLOY® or stainless steel sheath material.

High Temperature Leadwire — Up to 842°F (450°C).

Lead Length — Type CIR heaters are stocked with 14" long leads. Longer lead lengths can be readily spliced on.

Advantages

Higher Temperatures, Faster Production Rates — Because Type CIR's patented construction and high watt density capability let you put more heat in less space.

Shock and Vibration Resistant — Tightly compacted refractory insulation makes CIR heaters suitable for severe applications.

Even Temperature throughout the heater's length is produced by the uniform winding of the wire on the smooth supporting core. Close and even spacing between wire and inside of sheath is maintained for good heat transfer. Tight spacing between turns permits the use of largest gauge resistance wire.

Excellent Oxidation and Corrosion Resistance is provided by special Chromalox alloy sheath. Thermal expansion characteristics of sheath and refractory are closely matched.

Components

















CIR/CIRM

CIR 1/8" to 1-1/4" dia.

CIRM 6mm to 20mm dia.

Cartridge Heater *(cont'd.)*

Cartridge Configurations

1T Teflon leads & cap		8C Strain Relief	
14C Leads Right Angle		3C Protective Spring	
13C Stainless Steel Braid (Straight)		12C Ceramic Beads	
17C Stainless Steel Braid Right Angle		9C S/CD Fittings	
4C Stainless Conduit Straight		10C Flanges	
15C Stainless Conduit Right Angle		11C Wire Pull	
1B Copper Fitting Right Angle		20C Y Terminals	
1C Copper Fitting Right Angle		T1, T2, T3 Thermocouple	

Specifications and Ordering Information

DIM (In.)						120V		240V		Wt. (Lbs.)
Dia.	Sheath Length	Watts	W/In ²	Model	Stock	PCN	Stock	PCN		
1/4" Diameter										
1/4	1-1/4	75	128	CIR-1013	S	279216	—	—	0.02	
1/4	1-1/4	100	171	CIR-1012	S	274255	—	—	0.02	
1/4	1-1/4	150	256	CIR-1014	NS	279224	—	—	0.02	
1/4	1-1/4	225	388	CIR-10121	—	—	S	242050	0.02	
1/4	1-1/2	50	64	CIR-1016	NS	279232	—	—	0.02	
1/4	1-1/2	100	128	CIR-1017	NS	279240	—	—	0.02	
1/4	1-1/2	125	160	CIR-1015	S	274263	—	—	0.02	
1/4	1-1/2	150	192	CIR-1018	NS	279259	—	—	0.02	
1/4	1-1/2	175	220	CIR-1019	NS	279267	NS	279275	0.02	
1/4	1-1/2	200	256	CIR-10151	NS	279283	S	279291	0.02	
1/4	1-1/2	250	290	CIR-10153	—	—	S	283952	0.02	
1/4	1-3/4	100	127	CIR-10181	NS	140396	—	—	0.03	
1/4	2	100	85	CIR-1021	S	279304	—	—	0.03	
1/4	2	125	107	CIR-1022	—	279312	NS	279320	0.03	
1/4	2	150	128	CIR-1020	S	274271	S	279339	0.03	
1/4	2	200	171	CIR-1023	NS	279347	S	279355	0.03	
1/4	2	250	214	CIR-1024	NS	279363	S	279371	0.03	
1/4	2	300	256	CIR-10201	—	—	NS	284664	0.03	

Specifications and Ordering Information

DIM (In.)						120V		240V		Wt. (Lbs.)
Dia.	Sheath Length	Watts	W/In ²	Model	Stock	PCN	Stock	PCN		
1/4" Diameter										
1/4	2-1/4	150	127	CIR-10231	S	140409	—	—	0.03	
1/4	2-1/4	200	170	CIR-10231	S	140417	—	—	0.03	
1/4	2-1/4	80	67	CIR-10231	NS	140425	—	—	0.03	
1/4	2-1/2	175	112	CIR-1025	NS	279380	—	242077	0.03	
1/4	2-1/2	200	128	CIR-1027	—	284550	S	283960	0.03	
1/4	2-1/2	250	160	CIR-1029	NS	242085	NS	242093	0.03	
1/4	2-3/4	200	127	CIR-10281	NS	140433	—	—	0.04	
1/4	3	100	51	CIR-1031	NS	279400	—	279419	0.04	
1/4	3	150	77	CIR-1034	—	284605	S	283979	0.04	
1/4	3	200	103	CIR-1030	S	274280	S	279427	0.04	
1/4	3	250	129	CIR-10301	—	—	S	284672	0.04	
1/4	3	300	153	CIR-1032	NS	279435	S	279443	0.04	
1/4	3	400	205	CIR-1033	—	—	S	279451	0.04	
1/4	3-1/4	200	102	CIR-10331	S	140441	—	—	0.04	
1/4	3-1/2	100	43	CIR-1035	—	279460	—	279478	0.04	
1/4	3-1/2	200	85	CIR-1036	—	279486	—	279494	0.04	
1/4	3-1/2	225	96	CIR-1038	—	—	—	285421	0.04	
1/4	3-1/2	300	127	CIR-1037	—	—	S	284699	0.04	

CIR/CIRM

CIR 1/8" to 1-1/4" dia. & CIRM 6mm to 20mm dia. Cartridge Heater (cont'd.)

CIR Cartridge Design Guide											
Diameter	Size	Code	1/8"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"	1-1/4"
	Decimal		.121+/- .002	.246+/- .002	.308+/- .002	.371+/- .002	.496+/- .002	.621+/- .002	.746+/- .002	.996+/- .002	1.246+/- .002
Length	Tolerance		+/-3%*	+/-2%*	+/-2%*	+/-2%*	+/-2%*	+/-2%*	+/-2%*	+/-2%*	+/-2%*
Sheath	Incoloy		X	X	X	X	X	X	X	N/A	N/A
	304SS		N/A	N/A	X	X	X	X	X	X	X
Terminations	Leads	MGT	X	X	X	X	X	X	X	X	X
	Leads	PTFE	X	X	X	X	X	X	X	X	X
	Pins		N/A	X	N/A	X	X	X	X	X	X
Seals	Epoxy		X	X	X	X	X	X	X	X	X
	Silicone		NA	X	X	X	X	X	X	X	X
	Cement		X	X	X	X	X	X	X	X	X
	Hermetic Seal	8C	N/A	N/A	N/A	X	X	X	X	N/A	N/A
Configurations	Teflon (leads & cap)	1T	NA	X	X	X	X	X	X	NA	NA
	Leads RA	14C	N/A	X	X	X	X	X	X	X	X
	Braid Straight	13C	X	X	X	X	X	X	X	X	X
	Braid RA	17C	N/A	X	X	X	X	X	X	X	X
	Conduit Straight	4C	N/A	X	X	X	X	X	X	X	X
	Conduit RA	15C/16C	N/A	X	X	X	X	X	X	X	X
	Copper Straight	1B	N/A	X	N/A	X	X	X	X	N/A	N/A
	Copper RA	1C	N/A	X	N/A	X	X	X	X	N/A	N/A
	Strain Relief	19C	N/A	X	X	X	X	X	X	X	X
	Protective Spring	3C	N/A	X	N/A	X	X	X	X	N/A	N/A
	Ceramic Beads	12C	N/A	X	X	X	X	X	X	X	X
	Fittings	9CS/CD	N/A	X	X	X	X	X	X	X	X
	Flanges	10C	X	X	X	X	X	X	X	X	X
	Wire Pull	11C	N/A	X	X	X	X	X	X	N/A	N/A
	Y Terminals	20C	N/A	N/A	N/A	N/A	N/A	X	X	X	X
	Thermocouple	T1	**	X	X	X	X	X	X	X	X
	Thermocouple	T2	**	X	X	X	X	X	X	X	X
Thermocouple	T3	**	X	X	X	X	X	X	X	X	

*Length tolerance is either +/- % or 3/32" whichever is greater

**Only available at lead end of heater

CIRM Metric Cartridge Design Guide										
Diameter	Size		6mm	6.5mm	8mm	10mm	12mm	12.5mm	16mm	20mm
	Decimal		.234+/- .002	.254+/- .002	.313+/- .002	.392+/- .002	.470+/- .002	.490+/- .002	.628+/- .002	.785+/- .002
Length	Tolerance		+/-2%*	+/-2%*	+/-2%*	+/-2%*	+/-2%*	+/-2%*	+/-2%*	+/-2%*
Sheath	Incoloy		X	X	X	X	X	X	X	N/A
	304SS		N/A	N/A	X	X	X	X	X	X
Terminations	Leads	MGT	X	X	X	X	X	X	X	X
	Leads	PTFE	X	X	X	X	X	X	X	X
	Pins		X	X	N/A	X	X	X	X	N/A
Seals	Epoxy		X	X	X	X	X	X	X	X
	Silicone		X	X	X	X	X	X	X	X
	Hermetic Seal	8C	N/A	X	N/A	N/A	N/A	X	N/A	N/A
	Cement		X	X	X	X	X	X	X	X
Configurations	Teflon (leads & cap)	1T	N/A	X	N/A	X	N/A	X	N/A	N/A
	Leads RA	14C	X	X	X	X	X	X	X	X
	Braid Straight	13C	X	X	X	X	X	X	X	X
	Braid RA	17C	X	X	X	X	X	X	X	X
	Conduit Straight	4C	X	X	X	X	X	X	X	X
	Conduit RA	15C/16C	X	X	X	X	X	X	X	X
	Strain Relief	19C	X	X	X	X	X	X	X	X
	Protective Spring	3C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Ceramic Beads	12C	X	X	X	X	X	X	X	X
	Fittings	9CS/CD	X	X	X	X	X	X	X	X
	Flanges	10C	X	X	X	X	X	X	X	X
	Wire Pull	11C	X	X	X	X	X	X	X	X
	Y Terminals	20C	N/A	N/A	N/A	N/A	N/A	N/A	X	X
	Thermocouple	T1	X	X	X	X	X	X	X	X
	Thermocouple	T2	X	X	X	X	X	X	X	X
	Thermocouple	T3	X	X	X	X	X	X	X	X

*Length tolerance is either +/- % or 2.5 mm whichever is greater

**Not available with fittings or flanges

CIR 1/4 - 3/4" Dia. Cartridge Heater (cont'd.)

Specifications and Ordering Information

DIM (In.)		Watts	W/in ²	Model	120V		240V		Wt. (Lbs.)
Dia.	Sheath Length				Stock	PCN	Stock	PCN	
1/2" Diameter									
3/4	5	300	28	CIR-5052	S	244460	—	—	0.39
3/4	5	500	47	CIR-5051	—	—	S	281084	0.39
3/4	5	1,000	95	CIR-5050	NS	278070	NS	278088	0.39
3/4	6	350	27	CIR-5061	S	140281	S	275813	0.48
3/4	6	500	39	CIR-5065	S	244478	S	244486	0.48
3/4	6	750	58	CIR-5062	—	—	—	281092	0.48
3/4	6	1,000	78	CIR-5067	—	—	S	244494	0.48
3/4	6	1,100	85	CIR-5060	NS	278096	S	278109	0.48
3/4	6	1,500	117	CIR-5068	—	—	—	244507	0.48
3/4	6	2,000	155	CIR-5069	—	—	S	244515	0.48
3/4	7	500	33	CIR-5075	S	244523	—	244531	0.57
3/4	7	1,000	66	CIR-5072	—	—	S	244540	0.57
3/4	7-5/8	450	27	CIR-5077	S	140290	S	275821	0.61
3/4	7-5/8	1,300	78	CIR-5076	—	278117	S	278125	0.61
3/4	8	500	28	CIR-5085	NS	244558	NS	244566	0.64
3/4	8	1,000	57	CIR-5080	—	—	S	281105	0.64
3/4	8	1,500	85	CIR-5081	—	—	—	281113	0.64
3/4	8	2,000	113	CIR-5082	—	—	S	281121	0.64
3/4	9-1/8	500	25	CIR-5091	NS	140302	S	275830	0.73
3/4	10	1,000	45	CIR-5100	—	—	S	281130	0.79
3/4	10	2,000	90	CIR-5102	—	—	S	244574	0.79
3/4	10-1/2	550	23	CIR-5106	NS	140310	NS	275848	0.83
3/4	10-1/2	2,000	85	CIR-5105	S	278133	S	278141	0.83
3/4	11-7/8	600	22	CIR-5118	NS	140329	S	275856	0.91
3/4	12	1,000	37	CIR-5120	—	—	S	281148	0.92
3/4	12	2,000	74	CIR-5121	—	—	S	281156	0.92
3/4	12	3,000	111	CIR-5122	—	—	—	281164	0.92
3/4	12	4,000	148	CIR-5124	—	—	S	244582	0.92
3/4	13-3/8	650	21	CIR-5135	NS	140337	S	275864	1.02
3/4	13-3/8	2,500	83	CIR-5134	—	—	S	278150	1.02
3/4	14	1,250	40	CIR-5141	—	—	—	244590	1.07
3/4	14	2,500	80	CIR-5142	—	—	—	244603	1.07

Specifications and Ordering Information

DIM (In.)		Watts	W/in ²	Model	120V		240V		Wt. (Lbs.)
Dia.	Sheath Length				Stock	PCN	Stock	PCN	
3/4" Diameter									
3/4	14	4,500	142	CIR-5144	—	—	—	244611	1.07
3/4	14-7/8	750	22	CIR-5148	S	140345	S	275872	1.14
3/4	15	1,500	44	CIR-5150	—	—	—	281172	1.15
3/4	16	1,800	49	CIR-5162	—	—	—	244620	1.23
3/4	16	4,700	128	CIR-5165	—	—	—	244638	1.23
3/4	16-1/4	800	22	CIR-5163	—	—	S	140353	—
3/4	17-3/4	850	21	CIR-5177	—	—	NS	275880	1.36
3/4	18	1,500	36	CIR-5180	—	—	—	281180	1.38
3/4	18	2,000	48	CIR-5182	—	—	—	244646	1.38
3/4	18	5,000	122	CIR-5185	—	—	—	244654	1.38
3/4	20	1,000	22	CIR-5204	—	—	NS	140361	—
3/4	20	1,150	25	CIR-5202	—	—	—	244662	1.53
3/4	20	2,000	44	CIR-5201	—	—	—	281199	1.53
3/4	20	2,250	49	CIR-5203	—	—	—	244670	1.53
3/4	20	3,850	84	CIR-5200	—	—	S	278168	1.53
3/4	20	5,000	110	CIR-5205	—	—	—	244689	1.53
3/4	22	1,150	23	CIR-5220	—	—	S	140370	—
3/4	24	1,250	23	CIR-5241	—	—	S	275899	1.84
3/4	24	1,375	25	CIR-5243	—	—	—	244697	1.84
3/4	24	2,500	42	CIR-5242	—	—	—	281201	1.84
3/4	24	2,750	50	CIR-5244	—	—	—	244700	1.84
3/4	24	4,600	83	CIR-5240	—	—	S	278176	1.84
3/4	24	5,000	85	CIR-5245	—	—	—	244718	1.84
3/4	30	2,500	37	CIR-5301	—	—	S	140388	—
3/4	30	4,800	69	CIR-5300	—	—	S	278184	2.3
3/4	36	2,500	30	CIR-5362	—	—	—	244726	2.75
3/4	36	4,900	59	CIR-5360	—	—	NS	278192	2.75
3/4	48	5,000	45	CIR-5480	—	—	S	278205	3.7

Stock Status: S = stock NS = non-stock
To Order—Specify model, PCN, watts, volts and quantity.