Ceramic Insulated Band Heaters- Redband™

INTRODUCTION

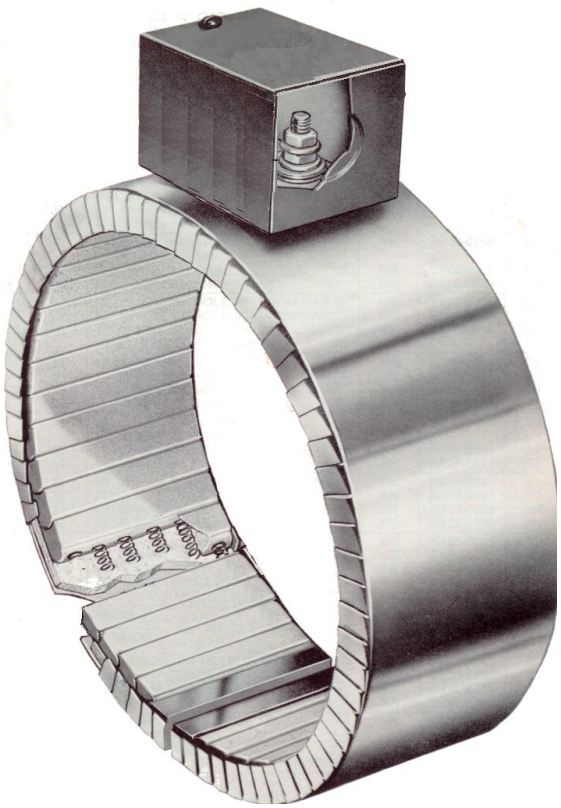
AKINSUN ceramic Redband™ heaters, used for industrial processing, have one primary purpose, to heat machinery parts or materials quickly, efficiently and contribute to productivity. These ceramic band heaters are capable of generating higher temperatures essential to process today's high temperature resins. Because of the low thermal conductivity of the ceramic fiber insulation, the external surface temperature of the ceramic band heater is approximately 400°F while running the inside surface temperature up to 1200°F.

Ceramic band heaters are manufactured in full range of standard construction variation, physical dimensions, electrical ratings and complete arrangement of screw terminals and lead terminations. These heaters are flexible and easy to install. Interconnecting ceramic bodies allow heaters to be easily opened and wrapped around the cylinder. AKINSUN heaters are designed and manufactured with materials to assure long life.

Ceramic band heaters can be custom manufactured to the size and diameter you need with all the necessary variations.

FEATURES

1. **TERMINAL BOX**:
   A steel terminal box offers excellent protection to exposed terminals. The box has a 5/8" knock-out that will accept standard conduit or flexible armor cable connectors.
2. **SCREW TERMINALS**:
   Screw terminals are standard on most ceramic insulated heater bands. Stainless steel screw terminals connected to solid nickel pins are designed to provide maximum amperage carrying capacity. Brackets are located 180° from the screw terminals.
3. **STAINLESS STEEL SHEATH**:
   Stainless steel housing with serrated edges provides maximum flexibility for ease of installation. Wall thickness of the sheath is chosen to provide mechanical strength, and thermal-conductivity. Sheath material will not become brittle when subject to high heat environment.
4. **CERAMIC FIBER INSULATION**:
   A 1/4" thick ceramic fiber insulation material is chosen for its dielectric and thermo-conducitivity characteristics. This keeps the heat on the cylinder and is not lost to the atmosphere. Specially designed mounting brackets with 1/4"-20 socket cap screws are used to securely draw the heating element assembly against the cylinder evenly and tightly across its entire width.
5. **NICKEL CHROME RESISTANCE WIRE**:
   Wire is selected from different sizes and resistance then precision wound on machines, allowing to include the maximum amount of wire possible in each heater. This allows heater to remain cool while providing maximum heat.
6. **RADIAL LOCKUP FLANGE**:
   Heavy-duty stainless steel flange is spot welded to outer sheath. A firm pressure extends over the width of the band to assure good lockup.



Ceramic Insulated Band Heaters

Plastics processing require high operating temperatures and fast production rates. Our ceramic band heaters are designed to meet these demands. These heaters are, in effect, high temperature electric furnaces capable of very efficient heat transfer by conduction, convection and radiation. Built in insulation minimizes unwanted temperature changes along the barrel.

Other types of band heaters are primarily conductive, requiring an intimate fit with components being heated. Grooves or other surface irregularities form voids under the bands, resulting in hot spots and pre mature heater failure. Ceramic bands are recommended here, because efficient heat transfer is not affected by irregular surfaces or loose fit. At higher watt densities they can be used in wider increments then other heaters. This means you can reduce the number of bands used and simplify wiring.

SPECIFICATIONS

MAXIMUM TEMPERATURE.....	1400°F
NOMINAL WATT DENSITY.....	20-45 W/IN²
MAXIMUM WATT DENSITY.....	45 W/IN², AIR COOLED 50 W/IN²
MAXIMUM VOLTAGE.....	480V (SINGLE OR TREE PHASE) ON SCREW TERMINALS
MAXIMUM VOLTAGE W/LEADS.....	240 VAC
MAXIMUM AMPERAGE.....	LEAD WIRE TERMINATION 10 AMP (PER CIRCUIT)
MAXIMUM AMPERAGE SCREW TERMINATION..	25 AMP
RESISTANCE TOLERANCE.....	+10%,-5%
WATTAGE TOLERANCE.....	+5%,-10%
INSULATION (CERAMIC FIBER BLANKET)	STANDARD THICKNESS ¼" DOUBLE THICKNESS ½"
TERMINALS.....	1/4-20 POST TERMINALS STANDARD
SHEATH MATERIAL.....	STAINLESS STEEL
LOCKUP.....	FLANGE TYPE STANDARD
MINIMUM ID: ONE PIECE.....	2"
MINIMUM ID: TWO PIECE.....	4"
MAXIMUM ID.....	25 ½" FOR 2 PIECE CONSTRUCTION 15" FOR 1 PIECE CONSTRUCTION
STANDARD WIDTH INCREMENT.....	1/2"
STANDARD GAP WHEN TIGHTENED.....	1/4"
THICKNESS W/¼" INSULATION.....	5/8"
THICKNESS W/½" INSULATION.....	7/8"

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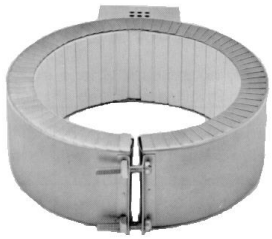
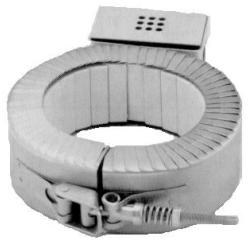
CLAMPING STYLES

FLANGE LOCKUP STYLE		
TYPE	**LEADS OR TERMINAL**	**DESCRIPTION**
A	*SCREW TERMINALS*	*NO TERMINAL BOX*
B	*SCREW TERMINALS*	*WITH TERMINAL BOX 1¾" HIGH*
C	*SCREW TERMINALS*	*WITH LOW PROFILE BOX 1" HIGH*
D	*ARMOR*	*STRAIN RELIEF BRACKET STRAIGHT*
E	*ARMOR*	*STRAIN RELIEF BRACKET 90° BEND*
F	*BRAID*	*STRAIN RELIEF BRACKET STRAIGHT*
G	*BRAID*	*STRAIN RELIEF BRACKET 90° BEND*



BARREL NUT CLAMPING		
TYPE	**LEADS OR TERMINAL**	**DESCRIPTION**
H	*SCREW TERMINALS*	*NO TERMINAL BOX*
J	*SCREW TERMINALS*	*WITH TERMINAL BOX 1¾" HIGH*
K	*SCREW TERMINALS*	*WITH LOW PROFILE BOX 1" HIGH*
L	*ARMOR*	*STRAIN RELIEF BRACKET STRAIGHT*
M	*ARMOR*	*STRAIN RELIEF BRACKET 90° BEND*
N	*BRAID*	*STRAIN RELIEF BRACKET STRAIGHT*
P	*BRAID*	*STRAIN RELIEF BRACKET 90° BEND*

LATCH AND TRUNION STYLE		
TYPE	**LEADS OR TERMINAL**	**DESCRIPTION**
Q	*SCREW TERMINALS*	*NO TERMINAL BOX*
R	*SCREW TERMINALS*	*WITH TERMINAL BOX 1¾" HIGH*
S	*SCREW TERMINALS*	*WITH LOW PROFILE BOX 1" HIGH*
T	*ARMOR*	*STRAIN RELIEF BRACKET STRAIGHT*
U	*ARMOR*	*STRAIN RELIEF BRACKET 90° BEND*
V	*BRAID*	*STRAIN RELIEF BRACKET STRAIGHT*
W	*BRAID*	*STRAIN RELIEF BRACKET 90° BEND*



Options

AKINSUN recommends the use of post terminals in box with leads off box,
Instead of flexible leads in armor directly coming off the heater.

IP Insulated Plus
A Armored Cable
B Braided Wire
C Lead Wire; no Braid or Armor
D Leads exiting out of edge of heater; through Porcelain Insulator
E Terminal Connectors on studs – ring lugs
F Partial Coverage
G Thermocouple hole element area
H Thermocouple hole in Gap area, notched
I Inner Liner
J Twist Plug on leads
K Wider than normal gap
L Ground Stud
M Dual Voltage - For Bands 2½" or more in width
N Four wire construction
O Overlapping shell on gap area

Please specify when ordering

- Inside diameter and width
- Options (If any)
- Voltage: On 2 piece bands we suggest each piece be rated at half the operating Voltage. Please specify total Voltage
- Wattage: Please specify total wattage on 2 piece band heaters
- Gap (If other than factory standard)
- Lead length (If other than std. 12")

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STANDARD SIZES AND RATINGS

DIAMETER	WIDTH	TOTAL VOLTS	TOTAL WATTS	1 OR 2 PIECE	OPTIONS	PART NO
2½	1	240	375	1	--	G02160100F01
3	3	240	700	1	IP	G03000300A01
3	6	240/480	2000	1	M	G03000600B01
3	1	240	500	1	--	G03000100F01
3½	1	240	500	1	--	G03160100F01
3½	3	240	800	1	IP	G03160300A01
3½	4½	240	1000	1	H0	G03160416B01
4	2	240	800	1	IP	G04000200C01
4	4	240	960	1	IP	G04000400A01
4½	4	240	1000	1	H0	G04160400B01
4½	4	240	960	1	IP	G04160400A01
4 11/16	3	240	900	1	--	G04220300B01
5	3	240	850	1	IP	G05000300C01
5	3	240	850	1	IP	G05000300A01
5	3	240	1250	1	IP	G05000300A02
5	3	240	1250	1	IP	G05000300B02
5	3½	240	1250	1	IP	G05000316A01
5½	2	240	600	1	IP	G05160200A01
5½	2	240	1000	1	IP	G05160200A02
5½	3	240	700	1	IP	G05160300A01
5½	4	240/480	1500	1	M,O,H	G05160400B01
5½	4	240	1500	1	HO	G05160400B02
5½	4½	480	2050	1	IP	G05160416J01
5½	4½	480	2700	1	IP	G05160416B01
5½	4½	240/480	1750	1	M,O,H	G05160416B02
5½	4½	240/480	1500	1	M,O,H	G05160416B03
5½	4½	240/480	1500	1	M,O,H	GO5160416B04
5½	5	240/480	2000	1	M,O,H	G05160500B01
5¾	3	480	1200	1	IP	G05240300B01
5¾	3	480	1800	1	IP	G05240300B02
5¾	4	480	1200	1	IP	G05240400B01
5¾	4	480	1800	1	IP	G05240400B02
6	2	480	1000	1	IP	G06000200B01
6	2	480	1500	1	IP	G06000200A01
6	2½	480	1900	1	IP	G06000216A01
6	3½	480	1800	1	IP	G06000316B01
6	3	480	1700	1	IP	G06000300B01
6	4	480	1700	1	IP	G06000400B01
6	4	480	2600	1	IP	G06000400B02
6	5½	240/480	2000	1	M	G06000516B01
6	5½	248/480	2000	1	M,O,H	G06000516B02
6	6	240	1500	1	HO	G06000600B01
6	6	240/480	2000	1	M,O,H	G06000600B02
6¼	3	480	2600	1	IP	G06080300B01
6½	2	240	1000	1	IP	G06160200A01
6½	5	240	2500	1	--	G06160500B01
6½	6½	240	3500	1	--	G06160616B01
6 5/8	3½	480	1800	1	IP	G06200316B01
7	5½	240	2000	1	--	G07000516B01

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STANDARD SIZES AND RATINGS

DIAMETER	WIDTH	TOTAL VOLTS	TOTAL WATTS	1 OR 2 PIECE	OPTIONS	PART NO
7	2	480	1700	1	IP	G07000200A01
7	3	480	2500	1	IP	G07000300A01
7	4	480	2600	1	IP	GO700400B01
7½	2	240	1000	1	--	G07160200B01
7½	3	240	1800	1	IP	G07160300A01
7	3	480	2600	1	IP	G07000300B02
7½	4½	240/480	2000	1	M,O,H	G07160416B01
7½	5	240	2500	1	--	G07160500B05
7½	5½	240/480	2500	1	M,O,H	G07170516B01
7½	8	240	4500	1	--	G07160800B01
8	2	240	1000	1	IP	G08000200A01
8	3	480	3000	1	--	G08000300A01
8 3/8	6	480	2400	1	--	G08120600A01
8½	2½	480	3000	1	--	G08160216A01
8½	3	480	3200	1	--	G08160300A01
9	2	240	1750	1	--	G09000200B01
9	2½	240	2000	1	--	G09000216B01
9	5	240/480	2500	1	M,O,H	G09000500B01
9	5½	240	2500	1	--	G09000516B01
9	5½	240/480	3000	1	M,O,H	G09000516B02
9 1/8	4	240	3000	1	--	G09040400B01
10	2 3/16	240	1750	1	--	G10000206B01
10	5½	240	2500	1	--	G10000516B01
10	1½	240	1250	1	--	G10000116B01
10 7/16	2	240	1750	1	--	G10140200B01
10 7/16	1½	240	1750	1	--	G10140116B01
11	5	240/480	4000	1	M	G11000500B01
11	5	240/480	4000	1	M,O,H	G11000500B02
12	6	240/480	4000	1	M,O,H	G12000600B01
12	6	240/480	5000	1	M,O,H	G12000600B02
12½	7	240	5700	1	--	G12160700B01
12¾	6	240	5000	1	--	G12240600B01
13	4	480	5000	2	--	G13000400R01
13 9/16	3	240	3750	1	--	G13180300B01
13 9/16	2½	240	3250	1	--	G13180216B01
15	6	240/480	8000	1	M,O,H	G15000600B01
16	2	480	3750	2	--	G16000200R01
16	4	480	5000	2	--	G16000400R01
20	3	480	5600	2	--	G20000300R01
20	4	480	7500	2	--	G20000400R01
22	4	480	6600	2	--	G22000400R01
25½	3	480	7300	2	--	G25160300R01
25½	4	480	9800	2	--	G25160400R01