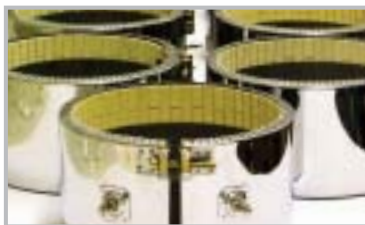




## Band Heaters

mica type and ceramic type



Heater bands are primarily used on injection moulding and extrusion machines in the plastic industry. Other applications include packaging machines and general heating of containers, pipes.

A distinctive feature of these elements is even heat distribution over a large surface area. Construction consists of heating wire, insulated with either mica-plates or ceramic formers. The elements are usually metal shrouded for mechanical strength.

### Mica and Ceramic insulation

**Mica Insulation:** Mica insulation offers thin construction (4mm), maximum Watts of 3.5 W/cm<sup>2</sup> and operation up to 380°C. For process temperatures in excess of 280°, ceramic insulation is preferred.

**Ceramic Insulation:** Ceramic elements are thicker in construction (12mm) but offer a Watts density of 5.5 W/cm<sup>2</sup> and operating temperature up to 600°C. Generally ceramic elements are more durable than mica elements, thus offsetting the higher price with a longer life expectancy.

### Calculation of maximum Power Rating

**Heater Band (Mica):**  $P \text{ max (Watts)} = \text{Width (mm)} \times \text{Diameter (mm)} \times (3.14 \times 0.035)$

**Heater Band (Ceramic):**  $P \text{ max (Watts)} = \text{Width (mm)} \times \text{Diameter (mm)} \times (3.14 \times 0.055)$

The power rating of the element does have an influence on it's lifespan. We therefore recommend that a lower power rating is chosen if the process allows for this.

### Mounting, Storage and Commissioning

**Mounting:** Good thermal contact between the element and metal surface to be heated is essential. Warping of elements will result in air pockets, causing hot spots and possible failure of the element. It is therefore important that elements are clamped on tightly and that clamps are retightened once elements have reached operating temperature.

**Storage and Commissioning:** Elements are susceptible to moisture and should be stored or used in a dry environment. It is recommended that elements are heated up gently after a prolonged period out of commission. This allows moisture to escape and prevents damage to the elements. Some temperature controllers

have a "soft start" feature, but a similar result is achieved by turning the temperature controller down initially.

**Fitting:** Fitting of bands is preferably done by sliding them on. Where it is not practical, bands have to be bent open and then wrapped around the barrel. This causes deformation of the shape and possible damage. In this case it is advisable to use a "flexible band" (less rigid construction) or a hinged element. Hinged elements are to be used where elements are removed frequently or where the diameter of the band is less than 150mm. For elements with a diameter larger than 300mm, we recommend the use of spring loaded clamps to counteract the expansion during heating.

## Ordering Code and Options

When ordering please provide the product code as detailed below, also *specify element rating (Watts), supply voltage, length of cable (if applicable), inner*

*dimensions (diameter, width...)* and a sketch with details of holes, cut-outs, the position of terminations, etc.

Type	Termination	Cable Entry	Cable Position
UH <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>BM = mica band</b> 	<b>1 = kettle plug (15A, round pin) *</b> 	<b>A = axial</b> 	<b>O = opposite gap</b> 
<b>BC = ceramic band</b> 	<b>E = 3 flat pin plug (15A) *</b> 	<b>T = tangential</b> 	<b>3 = 90° to gap</b> 
<b>BD = mica band insideout</b> 	<b>2 = cable termination including connector block (15A)**</b> 	<b>R = radial</b> 	<b>9 = 270° to gap</b> 
<b>BF = flexible band</b> 	<b>3 = sealed termination with braided cable (6A)***</b> 	<b>D = tangential angled</b> 	<b>X = other (specify)</b> 
<b>BS = semi band</b> 	<b>4 = twin terminal post (15A)</b> 	<b>A = separate terminal post (15A)</b> 	<b>B = axial angled</b> 
<b>BT = 3/4 band</b> 	<b>5 = sandwich tail - glass insulated (15A)***</b> 	<b>Options</b> <input type="text"/>	
<b>BH = hinged band</b> 	<b>6 = Small Termination with braided cable (15A)***#</b> 		
<p>* please refer to accessory page to order matching plugs / sockets</p> <p>** cable not included</p> <p>*** specify cable length when ordering</p> <p># cable not shown</p>	<b>three phase termination**:</b> 	<p>thermocouple bracket  <b>TB6 = 1/4" BSP</b>  <b>TB7 = 3/8" BSP</b></p> <p>barrel adapters  <b>B12 = Ø12 B/A</b>  <b>B13 = Ø13 B/A</b></p> <p>clamps  <b>SL = spring loaded clamp</b>  <b>QR = quick re-release clamp</b></p>	
	<b>7 = 60 x 80 x L (mm) 35 A / 24 kW max.</b>		
	<b>C = 55 x 55 x L (mm) 22 A / 15 kW max.</b>		
	<b>X = other (please specify on drawing)</b>		

unitemp reserves the right to make any kind of design or functional modification without prior notice.

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All these products are supplied by **unitemp**<sup>®</sup>

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Contact us to request any additional information on these or any of our other product ranges, or to place an order.

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[\*\*find more information here\*\*](#)

# Thermon Band Heaters: mica type and ceramic type



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