

# Band Heaters



## Tubular Bands

### Tubular Construction Barrel & Nozzle Band Heaters



#### Design Features

- \* Contamination-Proof
- \* Higher Watt Densities
- \* Temperatures Up to 1000°F (540°C)
- \* Rugged Durable Construction
- \* Greater Reliability
- \* Various Lead Terminations
- \* Optional Monel® Shroud

## Designed to Perform Under Adverse Conditions

**Tempco Tubular Band Heater** design stands apart from all other similar type band heaters. This band heater is capable of performing under the most adverse conditions. Highly recommended for heating applications where premature nozzle band heater burn-out on plastic injection molding machines is a constant problem due to contamination from plastic overflow or other contaminants. Proven to be very effective for processing Teflon® and high temperature engineering resins, providing long, trouble-free service.

#### Standard Specifications and Tolerances

of Tubular Band Heaters. If tighter tolerances are required consult Tempco.

#### PERFORMANCE RATINGS

**Maximum Temperature:** 1000°F (540°C)

**Maximum Watt Density:** 40 W/in<sup>2</sup> (7 W/cm<sup>2</sup>)

#### ELECTRICAL RATINGS

**Resistance Tolerance:** +10%, -5%

**Wattage Tolerance:** +5%, -10%

**Maximum Volts:** 277 Volts

**Maximum Watts:** Depends on diameter

**Maximum Amps:** 30 Amps

#### MECHANICAL

**Minimum Width:** 1-1/2" (38.1 mm)

**Minimum Inside Diameter:** 1-1/2" (38.1 mm)

**Standard Gap:** 3/8"

**Holes:** Can be accommodated. Consult Tempco with your requirements.

#### Construction Characteristics

Incoloy® 840 sheath .315 diameter tubular heating elements are used as heat source. The tubular element is formed to the specified inside diameter to produce a snug slip-on fit.

A low thermal expansion alloy is used to make the strap that houses the tubular heating element. The strap edges are rolled over the element to prevent the strap from separating from the tubular heater. Specially designed mounting brackets are spot welded to the strap, providing the clamping force required to tightly draw the tubular heater against the cylinder.

#### Advantages and Variations

The straight section of the tubular heater is fully annealed, remaining ductile for field bending. Normally done to guide the leads away from machine obstructions.

If bending is required—

- Secure the tubular band heater to the cylinder in the position required.
- Draw the strap as tight as possible.
- Using a piece of 1/2" water pipe, insert the leads and tubular element into the pipe up to the point where you need the bend.

Proceed to bend with a generous radius.



**DON'T MAKE A SHARP BEND AS YOU WILL CRACK THE HEATING ELEMENT.**

### Ordering Information

**Standard** — Select a Tubular Band heater from the table. All Tubular Band Heaters listed are supplied with Type W3 termination, 24" long.

**Custom Engineered/Manufactured** — An electric heater can be very application specific; for sizes and ratings not listed **TEMPCO** will design and manufacture a Tubular Band Heater to meet your requirements.

**Standard lead time is 3 weeks.**

**Please Specify** the following:

- |  |  |                                |
|--|--|--------------------------------|
| <input type="checkbox"/> Inside Diameter     | <input type="checkbox"/> Lead Cable/Braid Length | <input type="checkbox"/> Width |
| <input type="checkbox"/> Voltage and Wattage | <input type="checkbox"/> Termination             |                                |

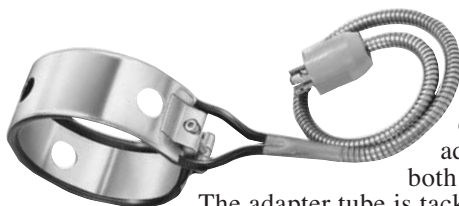
**WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

### Standard (Non-Stock) Tubular Band Heaters

Tubular band heaters listed have Type W3 termination, 24" long.

ID in	Width in	Wattage	Watt Density	Part Number	
				120V	240V
1½	1	200	42	TNB01001	—
1½	1½	200	28	TNB01003	—
1½	2	300	31	TNB01005	—
1½	2½	300	25	TNB01007	—
1¾	1	200	36	TNB01009	—
1¾	1½	300	36	TNB01011	TNB01012
1¾	2	400	36	TNB01013	TNB01014
1¾	2½	400	29	TNB01015	TNB01016
2	1	250	39	TNB01017	TNB01018
2	1½	250	26	TNB01019	—
2	2	350	27	TNB01020	—
2	2½	450	28	TNB01021	—
2¼	1	250	35	TNB01022	TNB01023
2¼	1½	350	33	TNB01024	—
2¼	2	350	24	—	TNB01025
2¼	2½	450	25	—	TNB01026
2½	1	300	38	TNB01027	TNB01028
2½	1½	350	29	—	TNB01029
2½	1½	400	33	TNB01030	—
2½	1½	750	62	—	TNB01031
2½	2	450	28	—	TNB01032
2½	2½	450	22	—	TNB01033
2¾	1	300	34	TNB01034	TNB01035
2¾	1½	350	27	TNB01036	—
2¾	2	450	26	—	TNB01037
2¾	2½	600	27	—	TNB01038
3	1	300	31	TNB01039	TNB01040
3	1½	450	31	—	TNB01041
3	2	600	31	—	TNB01042
3	2½	600	25	—	TNB01043
3¼	1½	450	29	—	TNB01044
3¼	2	600	29	—	TNB01045
3¼	1½	300	18	—	TNB01046
3¼	3	700	21	—	TNB01047
3½	1½	200	38	TNB01048	—
3½	1¾	465	21	TNB01049	—
5	1½	600	25	—	TNB01050
5	2	600	19	TNB01051	—
5	2	2000	63	—	TNB01052
5	2¼	1150	32	—	TNB01053
5¼	2¼	900	24	—	TNB01054
5¼	3	300	6	—	TNB01055
5½	2	600	17	TNB01056	TNB01057
6	2	600	15	TNB01058	TNB01059

### Type C3—Single Armor Cable Out Top



Armor Cable provides excellent protection against abrasion and contaminants. The cable exits through an adapter that encapsulates both tubular heater ends.

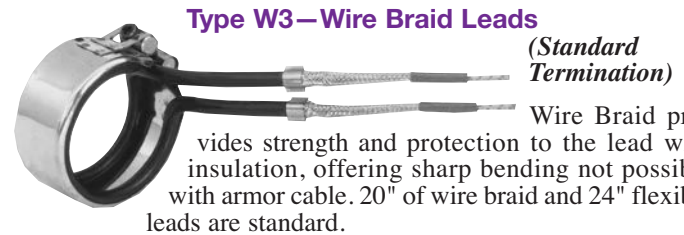
The adapter tube is tack welded to the heating element and the cable is crimped to the adapter for maximum security and seal protection. For maximum security and seal protection, 20" of cable and 24" flexible leads are standard.

**Type C3A—Galvanized Armor Cable**

**Type C3B—Stainless Steel Armor Cable**

#### Options:

- \* Male or female plugs attached to leads. For plug selection, see Accessory Section, page 15-15.



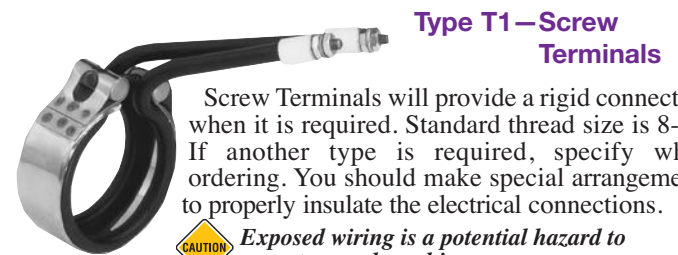
### Type W3—Wire Braid Leads

(Standard Termination)

Wire Braid provides strength and protection to the lead wire insulation, offering sharp bending not possible with armor cable. 20" of wire braid and 24" flexible leads are standard.

#### Options:

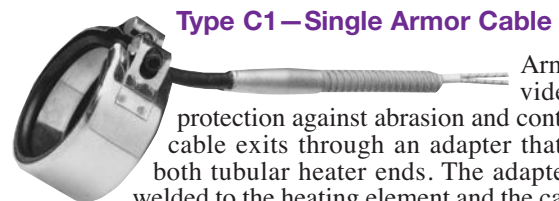
- \* Longer leads or braid
- \* Male or female plugs attached to leads. For plug selection, see Accessory Section, page 15-15.



### Type T1—Screw Terminals

Screw Terminals will provide a rigid connection when it is required. Standard thread size is 8-32. If another type is required, specify when ordering. You should make special arrangements to properly insulate the electrical connections.

**CAUTION** Exposed wiring is a potential hazard to operators and machine.



### Type C1—Single Armor Cable

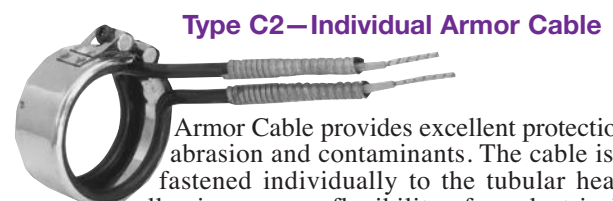
Armor Cable provides excellent protection against abrasion and contaminants. The cable exits through an adapter that encapsulates both tubular heater ends. The adapter tube is tack welded to the heating element and the cable is crimped to the adapter for maximum security and seal protection. 20" of cable and 24" flexible leads are standard.

**Type C1A—Galvanized Armor Cable**

**Type C1B—Stainless Steel Armor Cable**

#### Options:

- \* Male or female plugs attached to leads. For plug selection, see Accessory Section, page 15-15.



### Type C2—Individual Armor Cable

Armor Cable provides excellent protection against abrasion and contaminants. The cable is securely fastened individually to the tubular heater ends, allowing more flexibility for electrical wiring connections. 20" of cable and 24" flexible leads are standard.

**Type C2A—Galvanized Armor Cable**

**Type C2B—Stainless Steel Armor Cable**