

High Temperature Heating Tape

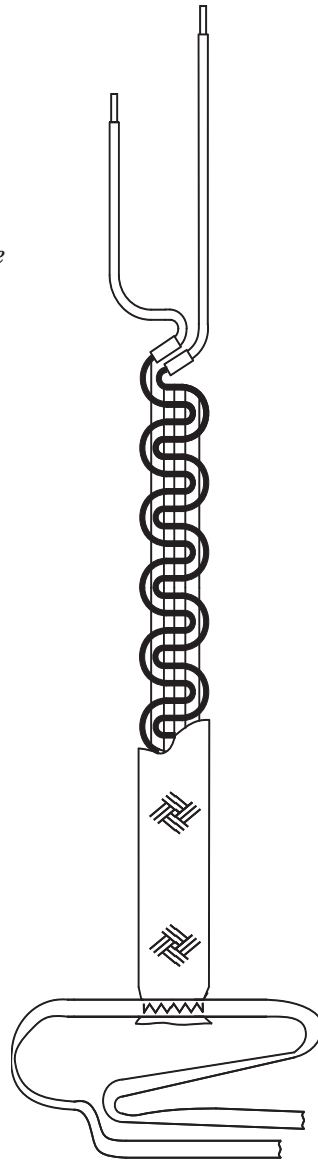
Flexible Heating Tape — Duo-Tape®

Design Features:

- * 1400°F (760°C) temperature rating
- * 2 ft. (610 mm) long high temperature lead wires on one end
- * Highly flexible & rugged, knitted design
- * High, medium and low watt density designs
- * Constant wattage (min. ohm change cold to hot)

Typical Applications:

- ➔ Laboratory, general application
- ➔ Research and Development
- ➔ Pilot plant research heaters
- ➔ High temperature hose heating
- ➔ Industrial applications, anywhere high temperature and flexibility are required (non-hazardous and dry locations only)



Tempco Heating Tapes

We provide high temperature, flexible electric heating elements. They were developed to offer the unique convenience of wrap-on heat for tubing, laboratory apparatus or any dry environment application where flexible surface spot heat is required.

Heating tapes are offered in many standard sizes, having watt densities from 3.25 to 13 watts per square inch, and temperature ratings to 1400°F (760°C).

CONSTRUCTION

The construction begins with bundled, fine strand resistance wire, 37 to 40 gauge, covered with a minimum of 2 layers of high temperature braided AMOX yarn. The insulated resistance wire is then knitted into a serpentine configuration, forming a flat tape. Once the lead wires are attached, most tapes have an additional braided, dielectric protection layer of AMOX yarn for use on conductive (metal) surfaces.

DURABILITY FEATURE

Unlike other straight element heating wires and tapes, knitting allows for cushioning during heating and cooling. The element expands in all directions rather than one, virtually eliminating “thermal growth.” In addition, knitting prevents the tape from tensile stress when stretched (a typical problem of elements applied to flexible hoses).

LOW WATT DENSITY, WELL DISTRIBUTED HEAT FEATURE

Knitting allows dense distribution of wire per unit length of tape. This feature provides longer life resulting from lower watts per inch of wire. (A typical 1 inch wide tape may contain 10 inches (25.4 cm) of wire element.)

DUO-TAPE

Duo-Tape is a breakthrough design innovation that allows two wires to be knitted side by side. The advantage is that the lead wires may be attached on the same end rather than opposite ends. The balance of the tape is constructed the same as the other single wire tapes.

OPTIONS

- 1. Plug** A 120V plug can be ordered on indicated heaters only as a custom assembly. Since the leads of the Duo-Tape are on one end, the plug is a single molded unit.
- 2. Lead Wire** Standard lead wire length is 2 ft. (61 cm)



Note: When a plug is requested, lead wire length may be 2 ft. or shorter. Optional lengths may be ordered to 8 ft. For special length, width, watts or volts—contact **Tempco**.

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Duo-Tape Standard (Non-Stock) Sizes and Ratings

Part Numbers in table are for heaters without plugs.
Plugs are available for 120V heaters only.

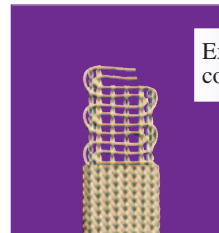
| Watt Density | Size | Watts | Part Number | |
|----------------------------|----------|-------|-------------|----------|
| | | | 120V | 240V |
| 13.00 W/in ² | ½" × 2' | 156 | FTF00101 | FTF00107 |
| | ½" × 4' | 312 | FTF00102 | FTF00108 |
| | ½" × 6' | 468 | FTF00103 | FTF00109 |
| | ½" × 8' | 624 | FTF00104 | FTF00110 |
| 2.0 W/cm ² | ½" × 10' | 780 | — | FTF00111 |
| | ½" × 12' | 936 | — | FTF00112 |
| | ½" × 16' | 1248 | — | FTF00113 |
| | 1" × 2' | 312 | FTF00105 | FTF00114 |
| | 1" × 4' | 624 | FTF00106 | FTF00115 |
| | 1" × 6' | 936 | — | FTF00116 |
| | 1" × 8' | 1248 | — | FTF00117 |
| 8.67 W/in ² | ½" × 2' | 104 | FTF00118 | — |
| | ½" × 4' | 208 | FTF00119 | FTF00125 |
| | ½" × 6' | 312 | FTF00120 | FTF00126 |
| | ½" × 8' | 416 | FTF00121 | FTF00127 |
| | ½" × 10' | 520 | FTF00122 | FTF00128 |
| | ½" × 12' | 624 | — | FTF00129 |
| | ½" × 16' | 832 | — | FTF00130 |
| | 1" × 2' | 208 | FTF00123 | FTF00131 |
| | 1" × 4' | 416 | FTF00124 | FTF00132 |
| | 1" × 6' | 624 | — | FTF00133 |
| 1.3 W/cm ² | 1" × 8' | 832 | — | FTF00134 |
| | 1" × 10' | 986 | — | FTF00135 |
| | ½" × 2' | 39 | FTF00136 | — |
| | ½" × 4' | 78 | FTF00137 | FTF00147 |
| | ½" × 6' | 117 | FTF00138 | FTF00148 |
| | ½" × 8' | 156 | FTF00139 | FTF00149 |
| | ½" × 10' | 195 | FTF00140 | FTF00150 |
| | ½" × 12' | 234 | FTF00141 | FTF00151 |
| | ½" × 16' | 312 | FTF00142 | FTF00152 |
| | 1" × 2' | 78 | FTF00143 | FTF00153 |
| 3.25 W/in ² | 1" × 4' | 156 | FTF00144 | FTF00154 |
| | 1" × 6' | 234 | FTF00145 | FTF00155 |
| | 1" × 8' | 312 | FTF00146 | FTF00156 |
| | 1" × 10' | 385 | — | FTF00157 |
| | 1" × 12' | 468 | — | FTF00158 |
| | 1" × 16' | 624 | — | FTF00159 |



Flexible Heating Tape Duo-Tape



Typical Duo-Tape assembly including ties



Example of internal construction before covering

Ordering Information

Standard Heaters

Choose the Duo-Tape Heater from the above table that meets your needs. Specify Part Number.

Custom Engineered/Manufactured Heaters

An electric heater can be very application specific; for sizes and ratings not listed, **Tempco** will design and manufacture a Duo-Tape Heater to meet your requirements. **Standard lead time is 2 to 3 weeks.**

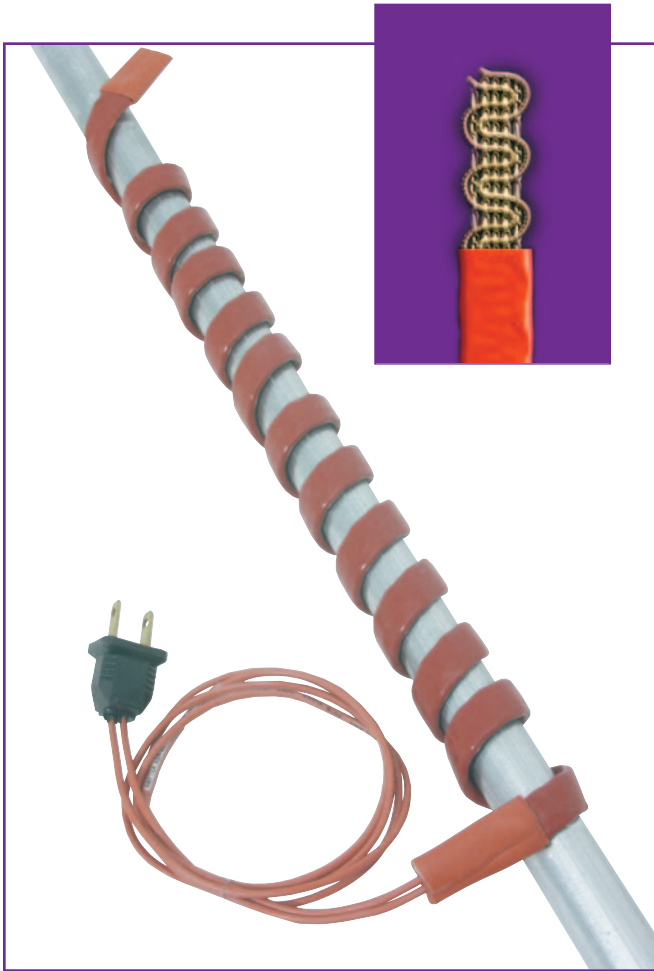
Please Specify the following:

- Application
- Length
- Wattage
- Voltage
- Termination
- Leads
- Crimp Connectors

⚠ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

(800) 323-6859 • Email: sales@tempco.com

Duo-Tape® — Silicone Rubber Insulated Flexible Heating Tapes



The same proven internal design of all Duo-Tapes of knitted Amox yarn over serpentine resistance is used. The heavy silicone rubber extruded outer cover provides abrasion and dielectric protection for the heating element.

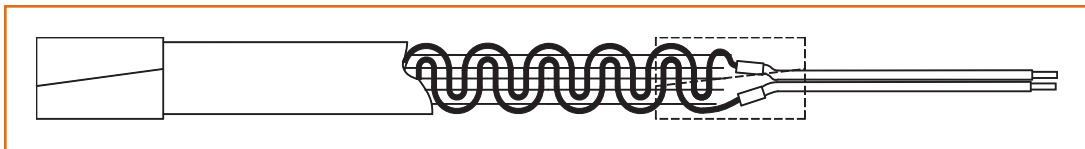
Silicone Rubber Duo-Tapes may be used on conductive surfaces, and in applications where moisture, chemical and abrasion resistance is required.

Design Features:

- * 400°F (204°C) temperature rating, non-energized exposure to 500°F (260°C)
- * 2 ft. (610 mm), 16 gauge, 600 VAC silicone rubber insulated leads
- * Vulcanized fiber reinforced silicone rubber end cap
- * Standard low watt density of 4.3 w/inch²
- * All standard 120 Volt units are provided with plug
- * Multi strand wire element for maximum flexibility
- * Highly flexible and durable design

Standard Sizes — with 2 ft. leads, 120V only with plug

| Watt Density | Size | | Watts | Part Number | |
|---------------------------|--------------|------------|----------|-------------|----------|
| | US | Metric(CM) | | 120V | 240V |
| 4.3 W/in ² | .5" × 2 ft. | 1.3 × 60 | 52 | FTF20001 | — |
| | .5" × 4 ft. | 1.3 × 120 | 104 | FTF20002 | FTF20022 |
| | .5" × 6 ft. | 1.3 × 180 | 156 | FTF20003 | FTF20023 |
| | .5" × 8 ft. | 1.3 × 240 | 208 | FTF20004 | FTF20024 |
| | .5" × 10 ft. | 1.3 × 300 | 260 | FTF20005 | FTF20025 |
| | .5" × 12 ft. | 1.3 × 360 | 312 | FTF20006 | FTF20026 |
| | .5" × 14 ft. | 1.3 × 420 | 364 | FTF20007 | FTF20027 |
| | .5" × 16 ft. | 1.3 × 480 | 416 | FTF20008 | FTF20028 |
| | .5" × 18 ft. | 1.3 × 540 | 468 | FTF20009 | FTF20029 |
| | .5" × 20 ft. | 1.3 × 600 | 520 | FTF20010 | FTF20030 |
| 0.67 W/cm ² | .5" × 24 ft. | 1.3 × 720 | 624 | FTF20011 | FTF20031 |
| | 1" × 2 ft. | 2.5 × 060 | 104 | FTF20012 | FTF20032 |
| | 1" × 4 ft. | 2.5 × 120 | 208 | FTF20013 | FTF20033 |
| | 1" × 6 ft. | 2.5 × 180 | 312 | FTF20014 | FTF20034 |
| | 1" × 8 ft. | 2.5 × 240 | 416 | FTF20015 | FTF20035 |
| | 1" × 10 ft. | 2.5 × 300 | 520 | FTF20016 | FTF20036 |
| | 1" × 12 ft. | 2.5 × 360 | 624 | FTF20017 | FTF20037 |
| | 1" × 14 ft. | 2.5 × 420 | 728 | FTF20018 | FTF20038 |
| | 1" × 16 ft. | 2.5 × 480 | 832 | FTF20019 | FTF20039 |
| | 1" × 18 ft. | 2.5 × 540 | 936 | FTF20020 | FTF20040 |
| 1" × 20 ft. | 2.5 × 600 | 1040 | FTF20021 | FTF20041 | |



Silicone Rubber Heating Tapes with Thermostat or Time Percentage Control



FTF3 with Adjustable Thermostat Control

* Adjustable Thermostat: 50°F to 425°F (10°C to 218°C)

NOTE: The heat sensing plate on the bottom of the thermostat enclosure must make firm contact with the load being sensed.

Design Features:

- * Maximum exposure temperature: 450°F (232°C)
- * Moisture and chemical resistant silicone rubber extruded outer sheath
- * Fiberglass reinforced serpentine-wound stranded heating element
- * Rapid heat-up and thermal response
- * Power density: 6.0 watts/inch²
- * 6 foot (2 m) long power cord with
120VAC: standard 2-prong NEMA 1-15 plug
240VAC: bare wire connection
- * Suitable for electrically conductive surfaces



FTF4 with Time Percentage Control

* Easily adjust percentage of time heater is on and off: 0 to 100%

NOTE: The time percentage control varies the length of time the heater is the on vs. off heating mode. The controller does not use a temperature sensor and therefore requires occasional supervision under changing load conditions.

Typical Applications

- ↔ Valves
- ↔ Pipes
- ↔ Bearings
- ↔ Pumps
- ↔ Gas Tubing
- ↔ Filter Housings
- ↔ Actuators
- ↔ De-icing

| Width | | Length | | Watts | Part Number - Thermostat | | Part Number - %Control | |
|-------|----|--------|------|-------|--------------------------|----------|------------------------|----------|
| in | mm | in | mm | | 120V | 240V | 120V | 240V |
| 0.5 | 13 | 24 | 610 | 72 | FTF30001 | FTF30021 | FTF40001 | FTF40021 |
| 0.5 | 13 | 48 | 1220 | 144 | FTF30002 | FTF30022 | FTF40002 | FTF40022 |
| 0.5 | 13 | 72 | 1830 | 216 | FTF30003 | FTF30023 | FTF40003 | FTF40023 |
| 0.5 | 13 | 96 | 2440 | 288 | FTF30004 | FTF30024 | FTF40004 | FTF40024 |
| 0.5 | 13 | 120 | 3050 | 360 | FTF30005 | FTF30025 | FTF40005 | FTF40025 |
| 1.0 | 25 | 24 | 610 | 144 | FTF30006 | FTF30026 | FTF40006 | FTF40026 |
| 1.0 | 25 | 48 | 1220 | 288 | FTF30007 | FTF30027 | FTF40007 | FTF40027 |
| 1.0 | 25 | 72 | 1830 | 432 | FTF30008 | FTF30028 | FTF40008 | FTF40028 |
| 1.0 | 25 | 96 | 2440 | 576 | FTF30009 | FTF30029 | FTF40009 | FTF40029 |
| 1.0 | 25 | 120 | 3050 | 720 | FTF30010 | FTF30030 | FTF40010 | FTF40030 |
| 2.0 | 51 | 24 | 610 | 288 | FTF30011 | FTF30031 | FTF40011 | FTF40031 |
| 2.0 | 51 | 48 | 1220 | 576 | FTF30012 | FTF30032 | FTF40012 | FTF40032 |
| 2.0 | 51 | 72 | 1830 | 864 | FTF30013 | FTF30033 | FTF40013 | FTF40033 |
| 2.0 | 51 | 96 | 2440 | 1152 | FTF30014 | FTF30034 | FTF40014 | FTF40034 |
| 2.0 | 51 | 120 | 3050 | 1440 | FTF30015 | FTF30035 | FTF40015 | FTF40035 |
| 3.0 | 76 | 24 | 610 | 432 | FTF30016 | FTF30036 | FTF40016 | FTF40036 |
| 3.0 | 76 | 48 | 1220 | 864 | FTF30017 | FTF30037 | FTF40017 | FTF40037 |
| 3.0 | 76 | 72 | 1830 | 1296 | FTF30018 | FTF30038 | FTF40018 | FTF40038 |
| 3.0 | 76 | 96 | 2440 | 1440* | FTF30019 | FTF30039 | FTF40019 | FTF40039 |
| 3.0 | 76 | 120 | 3050 | 1440* | FTF30020 | — | FTF40020 | — |
| 3.0 | 76 | 120 | 3050 | 1800* | — | FTF30040 | — | FTF40040 |

The FTF3 thermostats shown have a °F temperature label. For a °C temperature label, consult Tempco.

*Derated watt density due to maximum current limits