

TECHNICAL HEATERS

ELECTRICALLY HEATED

SERIES 212 FLUOROPOLYMER TFE CORE HOSES

LP212 LOW PRESSURE

These high temperature models feature a built-in electric heating element that provides heat up to 450° (232°C). The TFE Fluoropolymer core is reinforced with a tin/copper overbraid. Construction includes thermal insulation and scuff resistant jacket. Available with most standard couplings, they are supplied hydraulically and electrically complete. They offer flexibility, durability, chemical inertness and high resistance to corrosion over their entire temperature range.

212 HIGH PRESSURE

Model 212 Heat/Line Hoses have the same TFE Fluoropolymer core, heating element, electrical insulation and basic construction as our LP212 models above, but feature a stainless steel braid of greater density. This provides higher working pressures, and rugged construction. The flexibility of this braiding, combined with the inherent flexibility of the teflon core, produces exceptional durability, and facilitates ease of routing and handling as well.

212 CONVOLUTED CORE

These hoses feature a helical convoluted teflon core with a reinforced stainless steel wire braid. Designed to operate up to 400°F (204°C), they come with double thermal insulation and high resistance to corrosion over their entire temperature range. Available with most standard couplings, they are supplied hydraulically and electrically complete.

GAS ANALYZER SYSTEMS

HOT MELT SYSTEMS

PETROLEUM PRODUCTS

CHEMICAL TRANSFER

FOOD PRODUCTS

PAINT SYSTEMS

WATER & WASTE DISPOSAL

HOT OIL LINES

BULK TRANSFER



TECHNICAL HEATERS, INC.

CONSTRUCTION

	LP212 LOW PRESSURE	212 HIGH PRESSURE	212 LG. DIAMETER
CORE	Fluoropolymer (TFE) Smooth Bore	Fluoropolymer (TFE) Smooth Bore	Fluoropolymer (TFE) Convuluted Density
OVERBRAID	Tin/Copper Low	Stainless Steel High Density	Stainless Steel High Density
HEATING ELEMENT	Spiral Wound Resistance Wire Completely Sealed	Spiral Wound Resistance Wire Completely Sealed	Spiral Wound Resistance Wire Completely Sealed
ELECTRICAL INSULATION	Fiberglass Reinforced Silicone Rubber	Fiberglass Reinforced Silicone Rubber	Fiberglass Reinforced Silicone Rubber
THERMAL INSULATION	Single or Double High Temp. Fiberglass	Single or Double High Temp. Fiberglass	Double High Temp. Fiberglass
EXTERNAL JACKET	Abrasion Resistant Sleeving or Extruded Polyurethane Jacket	Abrasion Resistant Sleeving or Extruded Polyurethane Jacket	Abrasion Resistant Sleeving or Extruded Polyurethane Jacket

ELECTRICAL SPECIFICATIONS

OPERATING VOLTAGE:

Any single phase voltage to 480 VAC. Depending on length, hoses may be ordered to operate on 208, 240 or 480 VAC, 3 phase.

POWER DENSITY:

Power density is based on the desired operating temperature, ambient temperature and size of hose. Our engineering staff will help you determine wattage necessary to maintain temperature required for your application.

TEMPERATURE CONTROL:

Series 212 Heat/Line Hoses must be controlled to maintain the desired operating temperature and to ensure operation within design limits. A sensor for the controller is installed in the hose during construction, and unless otherwise specified, is located 2 ft. from the lead end. For very close temperature control, a solid state proportional controller is recommended.

POWER/CONTROL CABLE:

Standard length is 4 feet. Longer lengths are available.

AVAILABLE OPTIONS

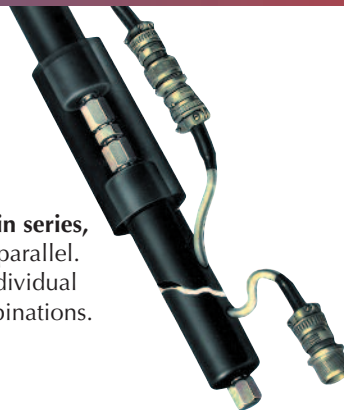
SELF-LIMITING HOSE:

Custom designed to maintain your minimum operating temperature without the need of a controller.



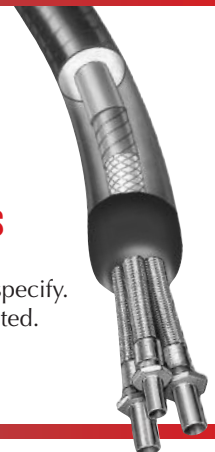
MODULAR:

Hydraulically in series, electrically in parallel. Suitable for individual use or in combinations.



MULTIPLE TUBE BUNDLES

Available in any combination you specify. Heated and unheated.



- Messenger wires available in different gauges & colors.
- Multiple Sensors
- Bulk
- Approved for Class I Div. 2 Group C & D
- ETL/CSA Approval
- Color coded
- Varied watt density
- Other types Teflon core

MODEL LP212 (Smooth Bore)

HOSE SIZE	Fluoropolymer Tube		NOMINAL O.D. with DOUBLE THERMAL INSULATION	MINIMUM BEND RADIUS	MAX. WORKING PRESSURE AT 400°F (204C)*	NOMINAL WEIGHT
	INSIDE DIAMETER	OUTSIDE DIAMETER				
4	3/16" 4.76MM	1/4" 6.35MM	1" 25.4MM	4" 10.16CM	500 PSI 35Kg/CM ²	.38 lb/ft. .56 kg/m
5	1/4" 6.35MM	5/16" 7.94MM	1-3/16" 30.16MM	6" 15.24CM	500 PSI 35Kg/CM ²	.40 lb/ft. .59 kg/m
6	5/16" 7.94MM	3/8" 9.5MM	1-3/8" 35MM	8" 20.32CM	400 PSI 28Kg/CM ²	.45 lb/ft. .66 kg/m
8	13/32" 10.31MM	1/2" 12.7MM	1-1/2" 38.1MM	10" 25.4CM	300 PSI 21Kg/CM ²	.52 lb/ft. .76 kg/m

MODEL 212 (Smooth Bore)

HOSE SIZE	Fluoropolymer Tube		NOMINAL O.D. with DOUBLE THERMAL INSULATION	MINIMUM BEND RADIUS	MAX. WORKING PRESSURE AT 400°F (204C)*	NOMINAL WEIGHT
	INSIDE DIAMETER	OUTSIDE DIAMETER				
4	3/16" 4.76MM	1/4" 6.35MM	1" 25.4MM	4" 10.16CM	1000 PSI 70Kg/CM ²	.38 lb/ft. .56 kg/m
5	1/4" 6.35MM	5/16" 7.94MM	1-3/16" 30.16MM	6" 15.24CM	1000 PSI 70Kg/CM ²	.40 lb/ft. .59 kg/m
6	5/16" 7.94MM	3/8" 9.5MM	1-3/8" 35MM	8" 20.32CM	1000 PSI 70Kg/CM ²	.45 lb/ft. .66 kg/m
8	13/32" 10.31MM	1/2" 12.7MM	1-1/2" 38.1MM	10" 25.4CM	700 PSI 49Kg/CM ²	.52 lb/ft. .76 kg/m
10	1/2" 12.7MM	5/8" 15.87MM	1-9/16" 39.7MM	13" 33.02CM	500 PSI 35Kg/CM ²	.58 lb/ft. .85 kg/m
12	5/8" 15.87MM	3/4" 19.05MM	1-5/8" 41.27MM	15" 38.1CM	400 PSI 28Kg/CM ²	.65 lb/ft. .96 kg/m
16	7/8" 22.3MM	1" 25.4MM	1-7/8" 47.6MM	18" 45.72CM	300 PSI 21Kg/CM ²	.75 lb/ft. 1.11 kg/m
20	1-1/8" 28.57MM	1-1/4" 31.75MM	2-3/8" 60.03MM	22" 55.88CM	200 PSI 14Kg/CM ²	.88 lb/ft. 1.30 kg/m

MODEL 212 Convuluted Core

HOSE SIZE	INSIDE DIAMETER	NOMINAL O.D. with DOUBLE THERMAL INSULATION	MAX. WORKING PRESSURE AT 400°F (204C)*	NOMINAL WEIGHT
20	1-1/4" 31.7MM	3" 7.62MM	400 PSI 28Kg/CM ²	.95 lb/ft. 1.41 kg/m
24	1-1/2" 38.1MM	3-1/4" 8.26MM	400 PSI 28Kg/CM ²	1.37 lb/ft. 2.04 kg/m
32	2" 5.08MM	3-3/4" 9.53MM	300 PSI 21Kg/CM ²	1.87 lb/ft. 2.78 kg/m
48	3" 7.62MM	4-3/4" 12.06MM	200 PSI 14Kg/CM ²	3.12 lb/ft. 4.64 kg/m
64	4" 10.16MM	5-3/4" 14.61MM	150 PSI 10.5Kg/CM ²	4.35 lb/ft. 6.47 kg/m

* pressure ratings for tubing only, not including fittings

WATT DENSITY REFERENCE

MODELS LP212 & 212		
WATTS PER FT.	ΔT (SINGLE INSULATION)	ΔT (DOUBLE INSULATION)
15 watts	142°F (61°C)	251°F (122°C)
20 watts	195°F (90°C)	360°F (182°C)
25 watts	250°F (121°C)	470°F (243°C)
30 watts	305°F (152°C)	DATA BASED ON 3/8" HOSE
35 watts	358°F (181°C)	
40 watts	413°F (213°C)	
45 watts	467°F (242°C)	

Use as a nominal guide only.



TH900 TEMPERATURE CONTROLLER

MAIN FEATURES

- Digital communication
- Large display
- Self-tuning (active tune)
- Heat/cool control
- Alarm output
- Analog output
- Digital input
- Heater break alarm
- Loop break alarm
- IP66



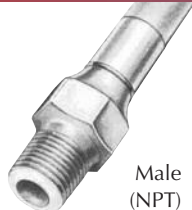
Input	T/C, RTD DC Voltage/current
Sampling	0.5 sec
Accuracy	±(0.3% of displayed value +1 digit)
Control	PID control (heat/cool control available)
Output	M, V, R, G, T
Communication	RS-485 (RKC/ANSI, Modbus) MapMan* DeviceNet* PROFIBUS* *External converter required.

CHOICE OF STAINLESS STEEL FITTINGS

Note: Fittings available Nedox Coated



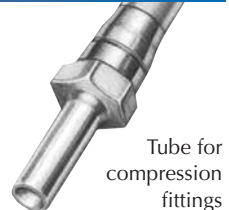
JIC Female Swivel (37° Seat)



Male (NPT)

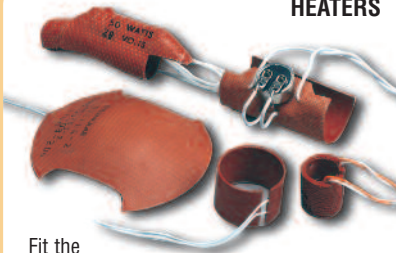


JIC Swivel with Female pipe (NPT) adapter an optional extra



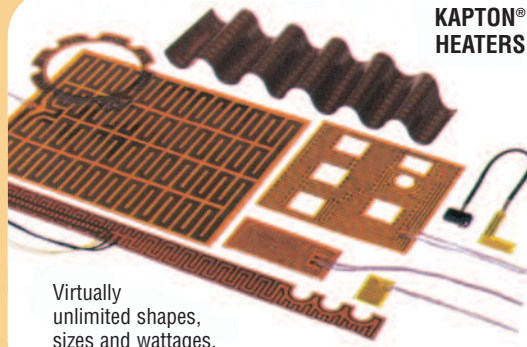
Tube for compression fittings

3-DIMENSIONAL HEATERS



Fit the contour of your part or product perfectly.

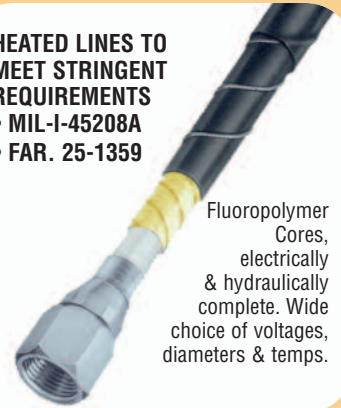
KAPTON® HEATERS



Virtually unlimited shapes, sizes and wattages.

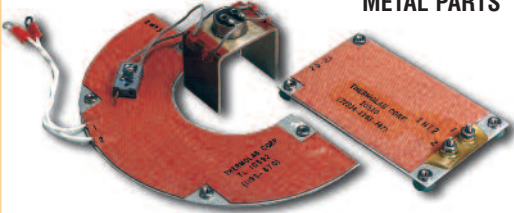
HEATED LINES TO MEET STRINGENT REQUIREMENTS

- MIL-I-45208A
- FAR. 25-1359



Fluoropolymer Cores, electrically & hydraulically complete. Wide choice of voltages, diameters & temps.

HEATERS BONDED TO MATING METAL PARTS



Provide a perfect fit between heater and part for complete sub-assemblies of high efficiency.

Leaders in the development of electrically heated products since 1968

Since 1968, we have pioneered the creation of a wide spectrum of the electrically heated products that have become indispensable elements in today's industrial world. Our broad line of electrically heated hoses and tubing has made us an industry leader in that field: with such products prominently employed in pollution monitoring and control, gas sampling, freeze protection and the efficient transfer of viscous products in the petrochemical, food processing and chemical fields.

We have been in the forefront of the heater and flexible circuit industry since its inception. Working with the engineering staffs of the world's leading corporations, we have played a leading role in developing the materials, technologies and manufacturing techniques that have brought these products from a few simple devices to the almost limitless array of sophisticated units that now play a vital role in contemporary space exploration, advanced medical research and the electronic processing of information.

MODULAR UNITS...hydraulically in series and electrically in parallel...use them individually or in combinations.



LARGE DIAMETER HEATED HOSE

With smooth or convoluted cores for:

- WASTE WATER
- FREEZE PROTECTION

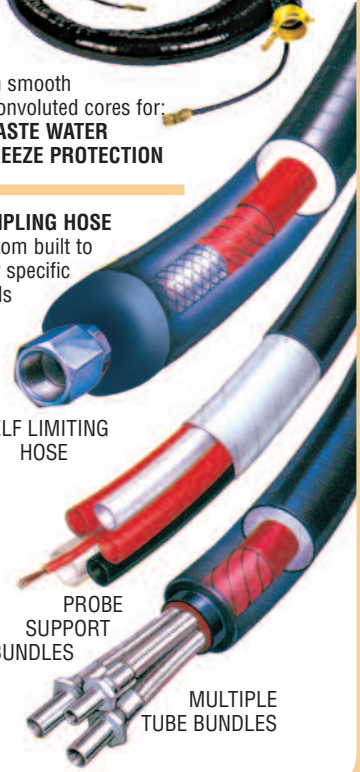
SAMPLING HOSE

Custom built to your specific needs

SELF LIMITING HOSE

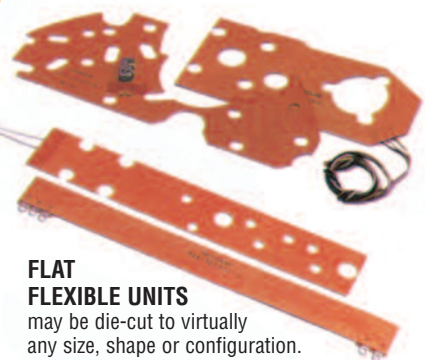
PROBE SUPPORT BUNDLES

MULTIPLE TUBE BUNDLES



FLAT FLEXIBLE UNITS

may be die-cut to virtually any size, shape or configuration.



SILICONE RUBBER HEATERS



Single, rugged and economical, in a wide range of shapes, sizes, and insulations.

HOT MELT HOSES

Built to your spec's or off-the-shelf. Unequaled inventories.

REPLACEMENT OR REPAIR, in fast turn-around times!



BULK HOSE

In high and low temperature designs and in lengths of 100 ft. or more. Parallel circuitry allows you to cut the hose to the exact lengths you need.



Technical Heaters, Inc. / THERMOLAB

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