

UNITHERM™ HEATED HOSE PRODUCTS

SERIES 200 ELECTRICALLY HEATED HIGH TEMPERATURE FLUOROPOLYMER TUBING

Description

UNITHERM's series 200 hoses feature a smooth bore, Fluoropolymer core, which is electrically heated for operation to 450°F (232°C). The hoses are flexible and can be operated in continuous movement conditions. The heating element is nickel alloy wire; spiral wound to extremely close tolerances, providing optimum temperature uniformity throughout the entire length. The heating element is insulated within multiple layers of high temperature insulation. Two thickness of thermal insulation are available with tough, extruded polyurethane jacket for outdoor service or an abrasion resistant, braided polyester sleeve for indoor use. All hoses are supplied electrically and hydraulically complete, ready to use.

Features

- Operating Voltage

Any single-phase voltage to 480 VAC. Depending on length hoses may be ordered to operate on 240 or 480 VA, three-phase.

- Power Density

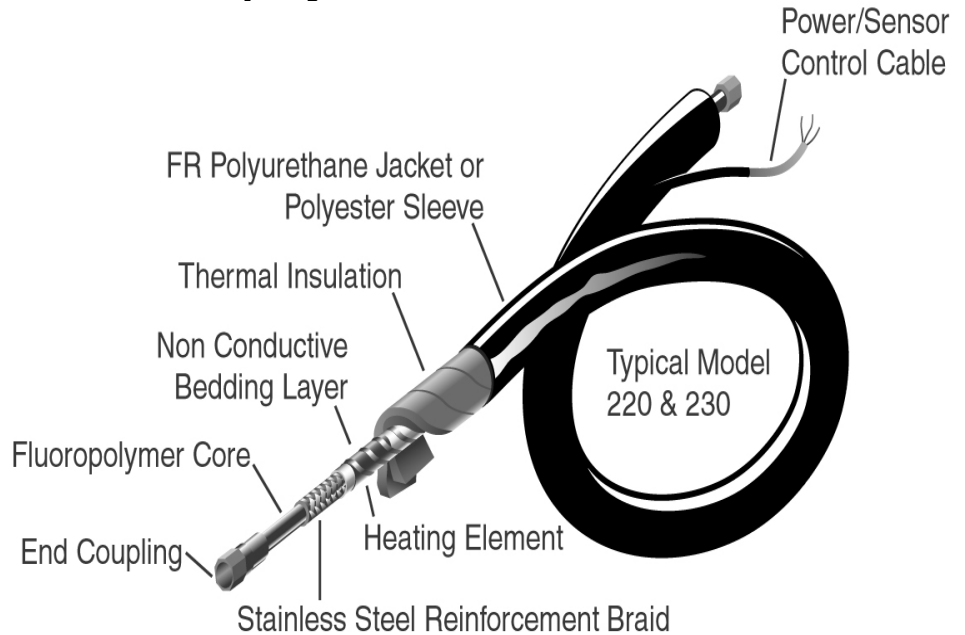
Up to 200 watts/ft. Power Density is based on the desired operating temperature, lowest ambient temperature and size of hose.

Temperature Control

Series 200 hoses must be controlled (except for the self-limiting (SL) version) to maintain the desired operating temperature. A temperature sensor is installed during construction and, unless otherwise specified, will be installed 3' from the power of the hose.

Dekoron/Unitherm's core expertise is thermal management. We build devices to maintain temperature or retard heat loss. Our expertise is what goes around the core. The expertise we attain in core material selection comes from successful use in similar applications. The ultimate responsibility for material selection is the customer's responsibility.

FORM 200HH40903



This picture shows only one of many constructions available

How to order Series 200

| Model No. | Tube Size | Hose Length Feet | Temperature Sensor | Operating Voltage | Fittings |
|--|--------------------------|------------------|---|-------------------------|--|
| 210 Low Pressure 220 Medium Pressure 230 High Pressure | From Specification Chart | 1 ft. Increments | J= Type J Thermocouple K= Type K Thermocouple T= Thermistor R= RTD (100 OHM) N= No Sensor | Indicate actual Voltage | L=JIC female Swivel J/TA= JIC female swivel with tube adapter M= Male Pipe (NPT) T=Tube for Compression Fitting |
| EXAMPLE | | | 210-5-12ft.N-115-T | | |

Typical Application

| Application | Type of use |
|-------------------|--|
| Gas Sampling | -Stack Gas -Instrumentation |
| Product Transfer | -Engine Emissions -Process Lines |
| Viscosity Control | Foods, Oil, Fats, Chemicals, Wax Paint, Ink, Coatings |

UNITHERM™ HEATED HOSE PRODUCTS

SERIES 200 ELECTRICALLY HEATED HIGH TEMPERATURE STAINLESS STEEL TUBING

Model 210 Low Pressure Specifications – to 450°F (232°C)

| Tube Size | I.D. | O.D. | Nominal Finished Diameter | | Maximum Operating Pressure* | Minimum Bend Radius | Nominal Weight Lb/Ft. |
|-----------|-------|-------|---------------------------|-------|-----------------------------|---------------------|-----------------------|
| | | | 1/4" | 1/2" | | | |
| 4 | .150" | .250" | 1.00" | 1.50" | 300 PSI | 10" | .40 |
| 5 | .210" | .312" | 1.10" | 1.60" | 300 PSI | 11" | .42 |
| 6 | .251" | .375" | 1.20" | 1.70" | 300 PSI | 12" | .45 |
| 8 | .375" | .500" | 1.30" | 1.80" | 200 PSI | 14" | .54 |

Model 220 Medium Pressure Specifications – to 450°F (232°C)

| Tube Size | Inside Diameter | Nominal Finished Diameter | | Maximum Operating Pressure** | Minimum Burst Pressure | Minimum Bend Radius | Nominal Weight Lb/Ft. |
|-----------|-----------------|---------------------------|--------|------------------------------|------------------------|---------------------|-----------------------|
| | | 1/4" | 1/2" | | | | |
| 4 | .187" | 1.00" | 1.50" | 1500 PSI | 6000 PSI | 10" | .44 |
| 5 | .250" | 1.10" | 1.60" | 1500 PSI | 6000 PSI | 11" | .46 |
| 6 | .312" | 1.25" | 1.75" | 1500 PSI | 6000 PSI | 12" | .50 |
| 8 | .405" | 1.375" | 1.875" | 1500 PSI | 6000 PSI | 14" | .57 |
| 10 | .500" | 1.55" | 2.05" | 1000 PSI | 4000 PSI | 16" | .62 |
| 12 | .625" | 1.625" | 2.125" | 900 PSI | 3500 PSI | 17" | .69 |
| 16 | .875" | 1.875" | 2.375" | 800 PSI | 3200 PSI | 19" | .95 |
| 20 | 1.062" | 2.125" | 2.625" | 600 PSI | 2400 PSI | 24" | 1.48 |
| ***24 | 1.375" | 2.75" | 3.25" | 800 PSI | 3200 PSI | 32" | 2.05 |

Model 230 High Pressure Specifications – to 400°F (204°C)

| Tube Size | Inside Diameter | Nominal Finished Diameter | | Maximum Operating Pressure* | Minimum Burst Pressure | Minimum Bend Radius | Nominal Weight Lb/Ft. |
|-----------|-----------------|---------------------------|-------|-----------------------------|------------------------|---------------------|-----------------------|
| | | 1/4" | 1/2" | | | | |
| 4 | .229" | 1.20" | 1.70" | 3000 PSI | 12000 PSI | 10" | .60 |
| 6 | .300" | 1.45" | 1.95" | 3000 PSI | 12000 PSI | 12" | .81 |
| 8 | .395" | 1.60" | 2.10" | 3000 PSI | 12000 PSI | 14" | .96 |
| 12 | .650" | 1.75" | 2.25" | 3000 PSI | 12000 PSI | 16" | 1.48 |
| 16 | .875" | 2.25" | 2.75" | 3000 PSI | 9000 PSI | 18" | 1.48 |
| 20 | 1.118" | 2.65" | 3.20" | 3000 PSI | 9000 PSI | 22" | 2.05 |
| ***24 | 1.375" | 2.95" | 3.25" | 3000 PSI | 9000 PSI | 26" | 3.40 |

* At 400°F (204°C) ** 450°F (232°F) *** Features Double Stainless Steel Braid

Construction

| | |
|-----------------------|---|
| Core Material | Smooth bore Fluoropolymer core |
| Reinforcement | Model 210 Low Pressure , Copper Braid (Low Density Coverage) Model 220 Medium Pressure , 100% Coverage S.S. Braid Model 230 High Pressure , S.S. Braid / Multiple layers |
| Heating Element | Constant Power Density and Self-Limiting, Fiberglass reinforced, silicone rubber |
| Electrical Insulation | Fiberglass reinforced silicone rubber |
| Thermal Insulation | 1/4" reinforced fiberglass (temperatures to 300°F) 1/2" reinforced fiberglass (Temperatures above 300°F) |
| External Jacket | Indoor Service – Abrasion resistant braided polyester sleeve Outdoor Service – tough, extruded flame-retardant polyurethane |
| Fittings | 1. JIC Female Swivel (37° seat) 2. JIC Female Swivel with Tube Adapter 3. Male NPT 4. Tube for Compression Fitting |
| Power/Control Cable | Standard length is six (6) feet. Longer lengths are available. Optional electrical connectors can be provided. |