PRODUCT SPECIFICATIONS

POWERBLANKET/THERMON HSL1000

HEATED SAMPLE LINE

APPLICATION

Transport of gases and fluids in manufacturing and laboratory testing environments, including RATA studies, where consistent temperature control is required. HSL1000 prevents condensation or sample degradation from collection point to analyzer.

GENERAL DESCRIPTION

The Powerblanket/Thermon HSL1000 is a highly flexible, heated sample line designed for the reliable transfer of gases or liquids in environments requiring precise thermal regulation. Utilizing a Polyimide/Silicone-insulated alloy wire heating element, this heated sample line offers enhanced thermal coupling, superior flexibility, and customizable performance to suit specific research and manufacturing requirements.

KEY FEATURES

- Custom Power Density & Lengths: Tailored wattage output (5–25 W/f) and configurable line lengths (Typically 0.5 to 30 meters).
- Polyimide/Silicone Composite Heater Tape: Provides excellent dielectric strength, durability, and precise thermal transfer.
- Temperature Control Ready: Integrated Type K thermocouple junction at key points for precise closed-loop control. Optional RTD or Thermistor sensor available.
- Flexible Construction: Maintains bend radius <100 mm even at low temperatures.
- Sample Integrity Protection: Maintains internal fluid or gas temperature between 20°C–250°C with ±1°C stability (with controller).
- Insulation: High Temperature Felt or closed-cell silicone foam (up to 1/2" thick) for energy retention and burn protection.
- Corrugated PVC exterior shell offers protection from the elements and is washdown ready. Braided Sleeving provides a slim body and protects the unit from abrasion, wear and damage.
- End Connections: Custom swaged fittings or compression-style, with optional quick connects, or raw tube ends.

CERTIFICATIONS/APPROVALS

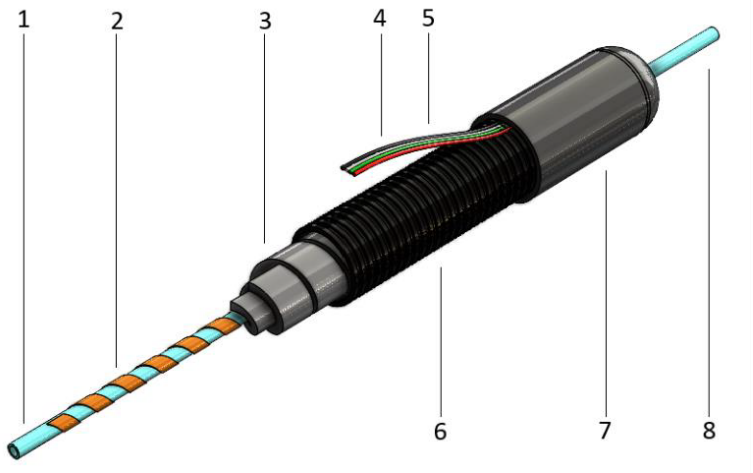
FM Approved

FM Approvals
Ordinary Locations
Hazardous (Classified) Locations
Class I, Division 2, Groups B, C and D
Class II, Division 2, Groups F and G
Class III, Divisions 1 and 2
Class I, Zones 1 and 2, AEx eb IIC, AEx tb IIIC

Canadian Standards Association
Ordinary Locations
Hazardous (Classified) Locations
Class I, Division 1, Groups A, B, C and D
Class II, Division 1, Groups E, F and G
Class I, Division 2, Groups A, B, C and D
Class II, Division 2, Groups E, F and G
Ex eb IIC, Ex tb IIIC

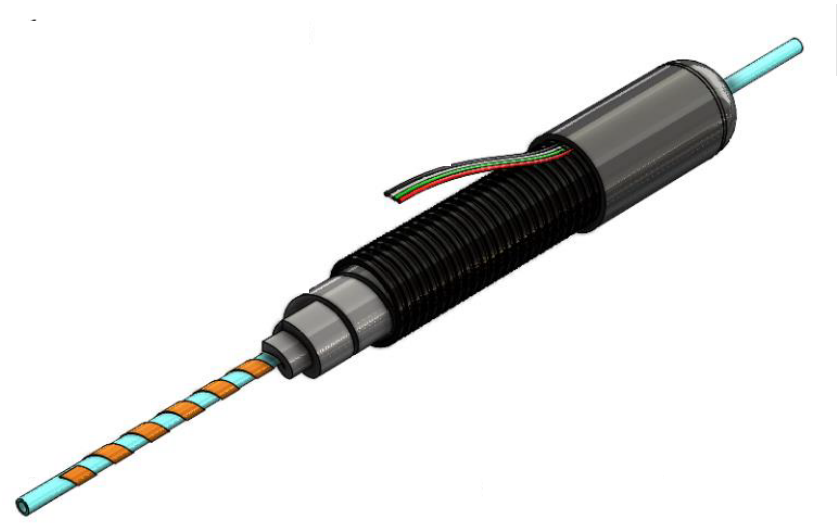
TECHNICAL SPECIFICATIONS

Parameter	Value/Range
Heating Element	Self Regulating Heat Cable
Heater Jacket	Flouropolymer Overjacket
Max Operating Temp	Maintain 200C (400F)
Min Bend Radius	100 mm (4 in)
Voltage	120/208/240/277 VAC
Heated Length	Typically 0.5-30 meter (1.5-100 ft)
OptionalTemp. Control	GHT2002J, ExoTouch, PID
Sensor Options	RTD, Thermistor, Type K, Type J
Fluid Line Material	PFA 3/8" OD x 0.062" Wall
Insulation	1/2" Closed Cell Foam or Felt
Outer Shell	Corrogated Tube or Braided Sleeving



HEATER CONSTRUCTION

1. PFA HOSE 3/8" OD x 0.02" WALL STANDARD
2. ALLOY HEATER WIRE ON POLYIMIDE SILICONE TAPE
3. HIGH TEMPERATURE FELT ½" STANDARD
4. POWER LEADS
5. TEMPERATURE SENSOR
6. OUTER SHELL
7. END SEALS
8. OPTIONAL END CONNECTIONS



HSL - 300 - HS - T12 - C12 - A3 - P36/S36 - M1/K1 - 276 - 3C35 - 62-7 - RTD120 - FG - CPVC - HS - T12 - C12 - TF3

Line Type
HSL= Heated Sample Line

Overall Length (in)

Power End Termination
HS=Heat Shrink
HCO=heat shrink w/ cable outlet
X=Special

Tube Lead Length (Power End)
T#=tube (in.)

Heater Cable Lead Length
C#=Cable (length in.)

Tube Fitting
A= A fitting type
B= B fitting type
C= C fitting type
X= Special

Power Wire Lead Length / Sensor Wire Lead Length
P#=Power lead (in.)
S#=Sensor lead (in.)

Power Cable Plug
L1= Leviton plug style 1
L2= Leviton plug style 2
M1= Molex plug style 1
M2= Molex plug style 2
A1= Amphenol plug style 1
A2= Amphenol plug style 2
X= Special

Sensor Cable Plug
SA1= Amphenol plug style 1
SA2= Amphenol plug style 2
SM1= Molex Sensor Plug style 1
SM2= Molex Sensor Plug style 2
X= Special

Heated Length (in)

Process Tube OD
1 = 3/8"
2 = 1/4"
3 = 3/8"
4 = 1/2"
5 = 5/8"
6 = 3/4"
8 = 1"

Process Tube Material
A = 316 SS Welded
B = #122 Copper
C = PFA Teflon2
D = Monel3
E = Titanium
F = 316 SS Seamless
G = 304 SS Welded
H = 304 SS Seamless
J = Alloy C276
K = Alloy 825
L = Alloy 20
M = FEP Teflon
N = Nylon
P = Polyethylene
T = PTFE Teflon
X = Special

Process Tube(s) Wall Thickness
028 = .028"
030 = .030"
032 = .032" (Copper Only)
035 = .035"
040 = .040" (Plastic Only)
047 = .047" (Plastic Only)
049 = .049"
062 = .062" (Plastic Only)
065 = .065"
083 = .083" (SS Only)

Heat Tracing Type (See Heat Trace Application Below). Contact Thermon for TubeTrace SE/ME instrument tubing bundles with alternative heat trace options such as parallel constant watt and series constant watt.

Self-Regulating Heat Trace
40 = BSX 3 W/ft. 120 Vac
41 = BSX 3 W/ft. 240 Vac
42 = BSX 5 W/ft. 120 Vac
43 = BSX 5 W/ft. 240 Vac
44 = BSX 8 W/ft. 120 Vac
45 = BSX 8 W/ft. 240 Vac
46 = BSX 10 W/ft. 120 Vac
47 = BSX 10 W/ft. 240 Vac
90 = VSX-HT 5 W/ft. 120 Vac
91 = VSX-HT 5 W/ft. 240 Vac
92 = VSX-HT 10 W/ft. 120 Vac
93 = VSX-HT 10 W/ft. 240 Vac
94 = VSX-HT 15 W/ft. 120 Vac
95 = VSX-HT 15 W/ft. 240 Vac
96 = VSX-HT 20 W/ft. 120 Vac
97 = VSX-HT 20 W/ft. 240 Vac
60 = HTSX 3 W/ft. 120 Vac
61 = HTSX 3 W/ft. 240 Vac
62 = HTSX 6 W/ft. 120 Vac
63 = HTSX 6 W/ft. 240 Vac
64 = HTSX 9 W/ft. 120 Vac
65 = HTSX 9 W/ft. 240 Vac
66 = HTSX 12 W/ft. 120 Vac
67 = HTSX 12 W/ft. 240 Vac
68 = HTSX 15 W/ft. 120 Vac
69 = HTSX 15 W/ft. 240 Vac
70 = HTSX 20 W/ft. 120 Vac
71 = HTSX 20 W/ft. 240 Vac

Power-Limiting Heat Trace
50 = HPT 5 W/ft. 120 Vac
51 = HPT 5 W/ft. 240 Vac
52 = HPT 10 W/ft. 120 Vac
53 = HPT 10 W/ft. 240 Vac
54 = HPT 15 W/ft. 120 Vac
55 = HPT 15 W/ft. 240 Vac
56 = HPT 20 W/ft. 120 Vac
57 = HPT 20 W/ft. 240 Vac

Insulation Type
FG= Fiberglass insulation
SIL=Silicon insulation

Outer Jacket Type
PC= Corrugated Polyamide
PW= Weaved Polyamide
SIL= Silicon wrap

Sensor Type & Length (in)
RTD#= Resistance Temp. Detector (length in.)
TCK#: Type K thermocouple (length in.)
TCJ#: Type J thermocouple (length in.)

End Termination (Non-Power End)
HS=Heat Shrink
HCO=heat shrink w/ cable outlet
X=Special

Tube Lead Length (Power End)
T#=tube (in.)

Heater Cable Lead Length
C#=Cable (length in.)

Tube Fitting
A= A fitting type
B= B fitting type
C= C fitting type
X= Special