

UP UNIQUE HEATED PRODUCTS

WWW.HEATEDPRODUCTS.COM



ARE YOU READY FOR THE FUTURE?

2007 and 2010's more stringent EPA regulations are coming - just around the corner. You'll never reach compliance with yesterday's obsolete emissions testing equipment. Fortunately, the future of **Front End Sampling Systems (FESS)** is available today.

Unique Heated Products, Inc.

(**UHPI**) is the world leader in the development of **Front End Sampling Systems (FESS)**. With over 30 years dedicated to the evolution of process controls, **UHPI** is on the cutting edge of tomorrow's technology.

Suffering from cold spots or ineffective chillers? **UHPI** has pioneered zero-tolerance for cold spots and the only dryer capable of removing all the moisture from your sample streams, among the many other innovative and proprietary discoveries offered only by **Unique Heated Products, Inc.**

Call Unique today!

Get ready for tomorrow!

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22797 MACOMB INDUSTRIAL DRIVE
CLINTON TOWNSHIP MI 48036

(586) 783-5725
FAX (586) 783 5728



Our new facility offers the opportunity to provide you, our valued customers, with state-of-the-art technology and beyond.

Toll Free 800-628-8239 or Local 586-783-5725

www.heatedproducts.com



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TABLE OF CONTENTS

Lines	1
Line Accessories	4
Line Ordering Guide	5
Filters	6
Filter Accessories	8
Filter Ordering Guide	9
Valves	10
Valve Ordering Guide	11
Combos	12
Combo Ordering Guide	13
Temperature Controllers	14
Temperature Controller Ordering Guide	16
Dryer/Chiller	17
Blankets	18
Blanket Ordering Guide	19
Hot Pockets	20
Pumps	21
Pump Ordering Guide	22
Probes	23
Probe Tip to End Orientation	24
Probe Ordering Guide	25
Bags	26
Bag Ordering Guide	27
Miscellaneous	
Aquanox III Purging System	28



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INSTRUMENT GRADE HEATED SAMPLE LINES

Unique's innovative **Instrument Grade Heated Sample Lines** (SII and above) are designed to be used wherever extracting and heating a gas, air, or emissions sample is desired. **UHPI** offers a wide array of external sleeveings, temperature ranges, and options to fit your specific applications. When used properly, **UHPI** lines meet or exceed USEPA/CFR standards. **UHPI's** use of superior insulations and precisely applied heating elements creates the most temperature-stable heated line on the market.

Instrument Grade Heated Sample Lines (SII and above) are available in a wide variety of configurations. Select your temperature range, inner core material & diameter, length, voltage, and sensor type; as well as an assortment of accessories detailed in the "Options" section of this catalog.

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FEATURES AND SPECIFICATIONS

POLYPROPYLENE for flexibility, UV protection, and corrosion & water resistance. It offers excellent crush & abrasion resistance, great corrosion resistance, and is vapor tight. It can be sealed for use in wet areas. The convoluted design makes it ideal in extremely cold conditions as well as higher temperatures.

Material: Polypropylene
Color: Black
Diameter Range: 1" to 2" (typical)
Bend Radius at 1-1/2" diameter: 6"

FEATURES AND SPECIFICATIONS

PROPORTIONAL AIR FEED BACK (PAFB) has been exclusively developed by **Unique's** experienced engineering staff as a method of proportionally controlling the sample line's inner wall temperature. This feature prevents the inlet end from experiencing changes in temperature at the sample source and provides you with full control of the line's temperature profile.

Material: Polypropylene
Color: Black
Diameter Range: 1" to 2" (typical)
Bend Radius at 1-1/2" diameter: 6"
Core Size: 1/4"

Temperature Control must be supplied by
Unique Heated Products, Inc.



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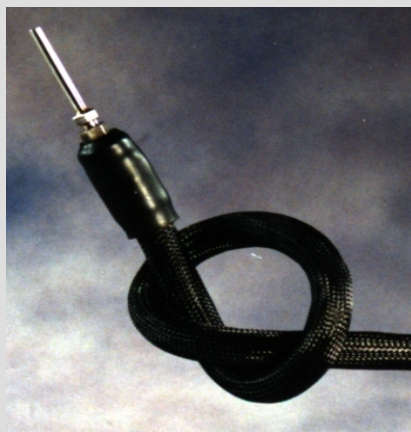


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INSTRUMENT GRADE HEATED SAMPLE LINES

More specifics on the recommended line configurations for your typical applications



FEATURES AND SPECIFICATIONS

ULTRA-FLEX - **Unique's** Ultra-Flex heated lines provide maximum flexibility with minimum diameter. Covered in a double layer of polyester mesh and incorporating a thin, yet highly efficient, double wound insulation provides no-gap coverage. The inner core is removable and replaceable should leaks or contamination occur. This line is NOT water resistant and is NOT recommended for moist conditions.

Material: Polyester

Color: Black

Diameter Range: 1" to 1.625" (typical)

Bend Radius at 1" diameter: 3"

Ambient Temperature Range: -94°F to +257°F

FEATURES AND SPECIFICATIONS

HEAVY DUTY - **Unique's** Heavy Duty sleeve is flexible, aluminum conduit, known as Greenfield™, for use in areas of extreme physical abuse. It has excellent crush resistance and will not melt when exposed to red-hot manifolds. This line is NOT water resistant and is NOT recommended for outdoor or moist conditions.

Material: Aluminum Conduit

Color: Silver (natural)

Diameter Range: 1" to 6" (typical)

Bend Radius at 1-1/2" diameter: 10"

Ambient Temperature Range: -50°F to +600°F



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More specifics on the recommended line configurations for your typical applications



FEATURES AND SPECIFICATIONS

MEXA 7000 - The MEXA 7000 option has been specifically designed for Unique's sample transfer lines with stainless steel end caps to directly mate with a Horiba MEXA 7000 Analyzer. This line is sleeved in Polypropylene for a tough durable exterior. The 7 pin connector is mounted on a stainless steel mini-electrical enclosure.

Material: Polypropylene

Color: Black

Diameter Range: 1" to 2" (typical)

Bend Radius at 1-1/2" diameter: 6"

Core Size: 1/4"

FEATURES AND SPECIFICATIONS

PPF - Unique's medium duty sleeve is flexible, polypropylene/rubber, for use in areas of heavy physical abuse. It is suitable for heavy indoor traffic and all outdoor environments.

Material: Polypropylene/Rubber

Color: Green/Black

Diameter Range: 1 1/4" to 4" (typical)

Bend Radius at 1-1/2" diameter: 10"

Core Size: 1/4"



Unique Heated Products, Inc. manufactures heated lines for a wide range of applications outside those listed, including non-automotive use. Please contact our office for a quotation to meet your custom configurations. Heated Sample Lines are just one of the components used to meet the Front End Sampling System requirements of the future.



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HEATED PRODUCTS ACCESSORIES

Unique Heated Products offers a variety of **Accessories** to prolong the life and enhance the use of many of your **UHPI Front End Sampling System** components. The **UHPI Heat Reflective Sleeve** provides low cost protection for your **UHPI Heated Sample Lines** when used in applications that expose portions of a Heated Sample Line to excessive temperatures. Designed as a highly heat reflective, slip-on tube, easily positioned along any portion of the Heated Sample Line, **UHPI's** Heat Reflective Sleeve protects your Heated Sample Line investment from exterior damage when in close proximity to extreme temperatures.

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FEATURES AND SPECIFICATIONS

- Easy to install, just slip-on and position to suit
- Made of highly reflective, aluminized fiberglass
- Low cost protection



Although **UHPI's Heat Reflective Sleeve** does not provide 100% protection against contact with molten metals or red-hot exhaust manifolds for extended periods of time, it does offer superior protection from premature deterioration. Configurations to fit virtually any size and shape are available to suit your application.

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HEATED SAMPLE LINES ORDERING GUIDE

EXAMPLE: SII-B-4-120-S-E4-PPO-A-AK-RXX-000

FIELD NUMBER ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^
1 2 3 4 5 6 7 8 9 10 11

1. LINE SERIES

SI-DEW POINT CONTROL
FOR INSTRUMENTATION
SII-PREMIUM GRADE LINE
FOR INSTRUMENTATION (MOST COMMON)
SIII-MOST ACCURATE LINE FOR
LAB AND RESEARCH APPLICATIONS

2. TEMPERATURE RANGE

A-100 DEG C (212 F)
B-200 DEG C (392 F) (MOST COMMON)
C-300 DEG C (572 F)
D-400 DEG C (752 F)

3. SAMPLE TUBE DIAMETER

ENGLISH	METRIC
2-1/8 INCH	M2-2MM
3-3/16 INCH	M3-3MM
4-1/4 INCH	M4-4MM
6-3/8 INCH	M6-6MM
8-1/2 INCH	M8-8MM

4. LENGTH IN INCHES

TOTAL LENGTH OF HEATED AREA
EXCLUDING END FITTINGS

5. SAMPLE TUBE

T-.030 WALL TEFLON
S-.030 WALL 316 STAINLESS STEEL
SI-SILICONE
CO-COPPER
HY-HASTELOY
IC-INCONEL

6. END CONNECTIONS

E-TUBE STUBS (SIZE) (STANDARD)

FOR ALL OTHER OPTIONS PLEASE
CONTACT UHP SALES AND TECH
SUPPORT

7. EXTERIOR SLEEVE

PPO-POLYPROPYLENE HOSE, BLACK
PPF-MEDIUM DUTY SPIRO, GREEN
UF-ULTRAFLEX, POLYESTER
H-HEAVY DUTY METAL HOSE
ST-LIQUID SEALTIGHT CONDUIT
C1D1-CLASS 1 DIV 1
SIL-SILICONE

8. HEATER VOLTAGE

A-120 VAC
B-230 VAC
G-12 VDC
H-208 VAC
I-480 VAC
M-24 VDC

9. SENSOR TYPE

A-THERMOCOUPLE (J OR K)
B-THERMISTOR
C-RTD (PT100)
D-ADJUSTABLE T-STAT
E-SELF-LIMITING

10. POWER CABLE TYPE (LENGTH)

A-7 PIN CONNECTOR (13 AMP MAX)
B-7 PIN CONNECTOR (45 AMP MAX)
D-LOOSE WIRE W/STRIPPED ENDS
E-SO CORD W/NEMA 5-15 PLUG
F-FLEXIBLE CONDUIT
G-MIL SPEC CONNECTOR
H-CLASS 1 DIV 2
I-CLASS 1 DIV 1
J-3 PIN MOLEX CON. (11 AMP MAX)
K-SO CORD W/NEMA 6-30 PLUG
M-MALE TWIST LOCK W/TC
N-9 PIN CONNECTOR (13 AMP MAX)
R-CONNECTOR BOX W/7 PIN CON.

11. OPTIONS

FOR ALL OPTIONS PLEASE SEE
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TEE HANDLE HEATED FILTERS

Unique's Tee Handle Heated Filters are designed to maintain temperatures during the processing of air, emissions, and gaseous samples. Unlike the competition, who simply heats a filter housing intended for use in ambient temperatures, **UHPI's** Heated Filter housings were designed specifically to be heated with our proprietary heating element applied to the entire housing surface. Our design includes recessed static "O" ring seals and superior insulations for the most temperature stable heated filter on the market.

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FEATURES AND SPECIFICATIONS

MODEL FLT-1584 - For use with Automotive, Diesel, CEM, Laboratory and general filtration applications.

- Filter Volume approximately 50ml (with element)
- 1.7 A @ 120 VAC 450° F Operation
- .50 CV Factor
- 1" ID x 2 ½" Filter Element
- Stainless Steel Exterior for maximum durability & easy maintenance
- 316 Stainless Steel Construction (all wetted parts)

FEATURES AND SPECIFICATIONS

MODEL FLT-1069 - For use with Automotive, Diesel, CEM, Laboratory and other filtration applications where particulate build-up is high.

- Filter Volume approximately 100ml (with element)
- 1.7 A @ 120 VAC 450° F Operation
- .50 CV Factor
- 1" ID x 7" Filter Element
- Stainless Steel Exterior for maximum durability & easy maintenance
- 316 Stainless Steel Construction (all wetted parts)



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TEE HANDLE HEATED FILTERS

More specifics on the filters available for your typical applications



FEATURES AND SPECIFICATIONS

MODEL FLT-2394 - For use with Automotive, Diesel, CEM, Laboratory and other filtration applications with low particulate levels. Low volume for faster response time.

- Filter Volume approximately 40ml (with element)
- 600 m A @ 120 VAC 450° F Operation
- .22 CV Factor
- ½" ID x 2 1/4" Filter Element
- Stainless Steel Exterior for maximum durability & easy maintenance
- 316 Stainless Steel Construction (all wetted parts)

FEATURES AND SPECIFICATIONS

MODEL FLT-2393 - For use with Automotive, Diesel, CEM, Laboratory and other filtration applications with low particulate levels. Low volume for faster response time.

- Filter Volume approximately 20ml (with element)
- 600 m A @ 120 VAC 450° F Operation
- .22 CV Factor
- ½" ID x 1 1/8" Filter Element
- Stainless Steel Exterior for maximum durability & easy maintenance
- 316 Stainless Steel Construction (all wetted parts)



Unique's filter housings feature powder-coated stainless steel exteriors to increase operator safety. The filter element is secured to the handle assembly for fast and easy replacement, which puts your filter back in service with the least amount of down time. All filters are available in your choice of voltage, temperature sensor, port type & size, and a variety of other options.



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OPTIONS FOR TEE HANDLE HEATED FILTERS

Unique Heated Products is proud to introduce the most innovative options available for our Tee Handle Heated Filter product line.



FEATURES AND SPECIFICATIONS

DIFFERENTIAL PRESSURE SWITCH (DPS) - This option is used to determine when the filter element needs replacement. Preventing an aborted test resulting from clogged filter elements saves time and money. As the pressure drops, the DPS (normally open) closes and a red LED illuminates to alert the operator. All **UHPI** filters come equipped with the differential pressure taps necessary to accommodate the DPS option, which mounts on the filter via a stainless steel band clamp.



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TEE HANDLE HEATED FILTERS ORDERING GUIDE

EXAMPLE: FLT-1069-B-E-6-A-AK-RXX-000

FIELD NUMBER: ^ ^ ^ ^ ^ ^ ^ ^
 1 2 3 4 5 6 7 8

1. FILTER HOUSING

1069-T-HANDLE 1" X 7"
1584-T-HANDLE 1" X 2 1/2"
2394-T-HANDLE 1/2" X 2 1/4"
2393-T-HANDLE 1/2" X 1 1/8"

2. TEMPERATURE RANGE

A-100 DEG C (212 F)
B-200 DEG C (392 F) (MOST COMMON)
C-300 DEG C (572 F)
D-400 DEG C (752 F)
E-500 DEG C (932 F)

3. PORT CONNECTION TYPE

E-TUBE STUBS (STANDARD)

FOR ALL OTHER OPTIONS PLEASE
CONTACT UHP SALES AND TECH
SUPPORT

4. PORT SIZE

ENGLISH	METRIC
4-1/4 INCH	M4-4MM
6-3/8 INCH	M6-6MM
8-1/2 INCH	M8-8MM

5. HEATER VOLTAGE

A-120 VAC
B-230 VAC
G-12 VDC
H-208 VAC
I-480 VAC
M-24 VDC

6. SENSOR TYPE

A-THERMOCOUPLE (J OR K)
B-THERMISTOR
C-RTD (PT100)
D-ADJUSTABLE T-STAT
E-SELF LIMITING

7. POWER CABLE TYPE (LENGTH)

A-7 PIN CONNECTOR (13 AMP MAX)
B-7 PIN CONNECTOR (45 AMP MAX)
D-LOOSE WIRE W/STRIPPED ENDS
E-SO CORD W/NEMA 5-15 PLUG
F-FLEXIBLE CONDUIT
G-MIL SPEC CONNECTOR
H-CLASS 1 DIV 2
I-CLASS 1 DIV 1
J-3 PIN MOLEX CON. (11 AMP MAX)
K-SO CORD W/NEMA 6-30 PLUG
L-REMOTE T-STAT
M-MALE TWIST LOCK W/TC
N-9 PIN CONNECTOR (13 AMP MAX)
R-CONNECTOR BOX W/7 PIN CON.

8. OPTIONS

FOR ALL OPTIONS PLEASE SEE
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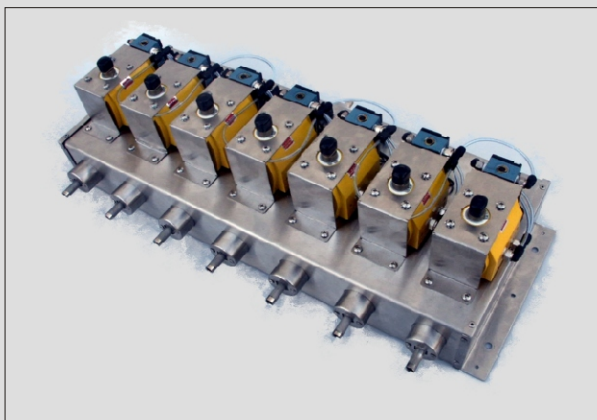
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HEATED PLUG VALVES & VALVE ARRAYS

Unique Heated Products' Heated Valves and Heated Valve Arrays are designed for use wherever heating and flow control of a gas, air, or emissions sample is desired. The valves are available in two-way & three-way configurations and may be housed as individual units or in arrays featuring multiple input ports with one or more output ports. Plug valves make the valving process invisible to the sample stream with respect to flow and pressure drop while the virtually uninterrupted flow path greatly decreases the maintenance requirements. **UHPI's** use of superior insulations and a completely uniform application of our proprietary heating element combine to create the most temperature stable Heated Valve on the market.

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7-1 PLUG VALVE MANIFOLD



2-WAY PLUG VALVE



FEATURES AND SPECIFICATIONS

- 90° or 180° pneumatic actuator on plug valve
- 60 to 100 PSIG required to actuate valve
- Available with 12 VDC, 24 VDC/VAC, or 120 VAC spool valve
- Valve sized from 1/8" to 1/2"
- 450° F temperature range
- All wetted parts are Teflon™/316 Stainless Steel

Unique's Heated Valves feature Stainless Steel housings for both durability and safety. Multiple valve arrays come standard with mounting tabs for process mounting and terminal strips for electrical coil connections. All Heated Valves and Valve Arrays are available in your choice of voltage, temperature sensor, port types & sizes, and many other options.



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HEATED VALVE & VALVE ARRAY ORDERING GUIDE

EXAMPLE: VAL-4131-B-E-6-A-AK-B-1-VT-RXX-000

FIELD NUMBER: 1 2 3 4 5 6 7 8 9 10 11

1. VALVE MODEL

1106-2 WAY SOLENOID
1115-3 WAY SOLENOID
4131-PLUG VALVE ON FILTER

2. TEMPERATURE RANGE

A-100 DEG C (212 F)
B-200 DEG C (392 F) (MOST COMMON)

3. IN/OUT PORT CONNECTION

E-TUBE STUBS (STANDARD)

FOR ALL OTHER OPTIONS PLEASE
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SUPPORT

4. PORT SIZE

ENGLISH	METRIC
4-1/4 INCH	M4-4MM
6-3/8 INCH	M6-6MM
8-1/2 INCH	M8-8MM

5. HEATER VOLTAGE

A-120 VAC
B-230 VAC
G-12 VDC
H-208 VAC
I-480 VAC
M-24 VDC

6. SENSOR TYPE

A-THERMOCOUPLE (J OR K) (MOST COMMON)
B-THERMISTOR
C-RTD (PT100)
D-ADJUSTABLE T-STAT

7. COIL VOLTAGE

A-12 VDC
B-24 VDC
C-120 VAC
D-240 VAC
M-MANUAL ACTUATION

8. NUMBER OF VALVES

1-ONE VALVE
2-TWO VALVE
3-THREE VALVE ETC.

9. SEAT AND SEAL TYPE

BN-BUNA
TF-TEFLON
VT-VITON
SI-SILICONE

PLUG VALVES HAVE BOTH:
TF ON AIR INLET SEALS
VT ON SAMPLE SEALS

10. POWER CABLE TYPE (LENGTH)

A-7 PIN CONNECTOR (13 AMP MAX)
B-7 PIN CONNECTOR (45 AMP MAX)
D-LOOSE WIRE W/STRIPPED ENDS
E-SO CORD W/NEMA 5-15 PLUG
F-FLEXIBLE CONDUIT
G-MIL SPEC CONNECTOR
H-CLASS 1 DIV 2
I-CLASS 1 DIV 1
J-3 PIN MOLEX CON. (11 AMP MAX)
K-SO CORD W/NEMA 6-30 PLUG
M-MALE TWIST LOCK W/TC
N-9 PIN CONNECTOR (13 AMP MAX)
R-CONNECTOR BOX W/7 PIN CON.

11. OPTIONS

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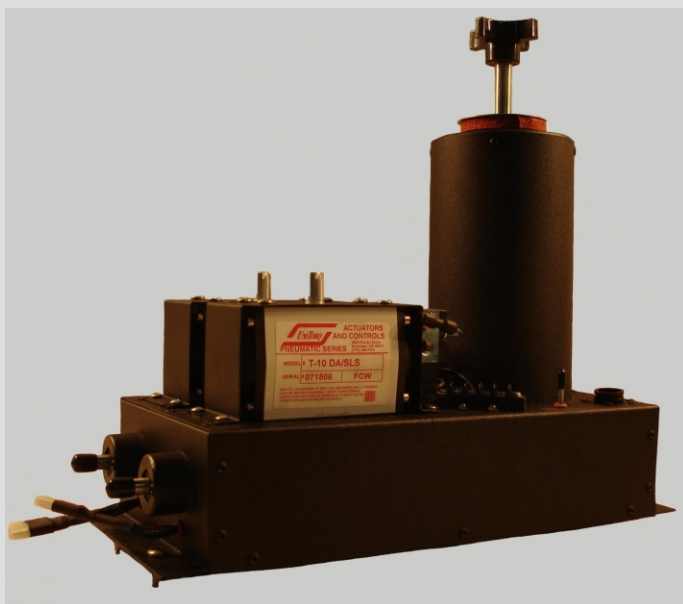
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HEATED FILTER/VALVE COMBO

Unique Heated Products' Model 4131 Filter/Valve Combo is designed to accept two different heated samples. This model is equipped with **UHPI's** standard FLT-1069 filter body to filter the sample stream before being routed to the analyzer. Featured options on this unit include LED's to quickly determine valve status, a Differential Pressure Switch to check pressure drops across the filter element, a 25-pin 'D' connector cable to communicate with a PC, and the ability to introduce additional gases into the flow stream if desired.

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FEATURES AND SPECIFICATIONS

- Available with 1" x 7" or 1" x 2½" filter element standard
- Up to 450° F operating temperature standard (higher ranges available)
- 1/4" or 3/8" tube stub ports standard (other sizes available, including metric)
- Modular Hot Pocket Junction heater extensions on all sample path ports
- 30 to 100 PSIG required to actuate the valve
- 90° pneumatic actuator on the plug valve
- Up to 30 valves on a single power source with individual relays and breakers for safety. If one goes down, the others continue operating.



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HEATED FILTER/VALVE COMBO ORDERING GUIDE

EXAMPLE: COMBO-4131-B-E-6-A-AK-B-VT-RXX-000

FIELD NUMBER: 1 2 3 4 5 6 7 8 9 10

1. COMBO HOUSING

2002-TWO WAY SOLENOID NC
ON FILTER INLET
2375-THREE WAY SOLENOID COM.
ON FILTER INLET
4131-PLUG VALVE ON FILTER

2. TEMPERATURE RANGE

A-100 DEG C (212 F)
B-200 DEG C (392 F) (MOST COMMON)
C-300 DEG C (572 F)
D-400 DEG C (752 F)
E-500 DEG C (932 F)

3. IN/OUT PORT CONNECTION

E-TUBE STUBS (STANDARD)

FOR ALL OTHER OPTIONS PLEASE
CONTACT UHP SALES AND TECH
SUPPORT

4. PORT SIZE

ENGLISH	METRIC
4-1/4 INCH	M4-4MM
6-3/8 INCH	M6-6MM
8-1/2 INCH	M8-8MM

5. HEATER VOLTAGE

A-120 VAC
B-230 VAC
G-12 VDC
H-208 VAC
I-480 VAC
M-24 VDC

6. SENSOR TYPE

A-THERMOCOUPLE (J OR K) (MOST COMMON)
B-THERMISTOR
C-RTD (PT100)
D-ADJUSTABLE T-STAT

7. COIL VOLTAGE

A-12 VDC
B-24VDC (MOST COMMON)
C-120 VAC
D-24 VAC

8. SEAT AND SEAL TYPE

BN-BUNA
TF-TEFLON
VT-VITON (STANDARD)
SI-SILICONE

PLUG VALVES HAVE BOTH:
TF ON AIR INLET SEALS
VT ON SAMPLE SEALS

9. POWER CABLE TYPE (LENGTH)

A-7 PIN CONNECTOR (13 AMP MAX)
B-7 PIN CONNECTOR (45 AMP MAX)
D-LOOSE WIRE W/STRIPPED ENDS
E-SO CORD W/NEMA 5-15 PLUG
F-FLEXIBLE CONDUIT
G-MIL SPEC CONNECTOR
H-CLASS 1 DIV 2
I-CLASS 1 DIV 1
J-3 PIN MOLEX CON. (11 AMP MAX)
K-SO CORD W/NEMA 6-30 PLUG
M-MALE TWIST LOCK W/TC
N-9 PIN CONNECTOR (13 AMP MAX)
R-CONNECTOR BOX W/7 PIN CON.

10.OPTIONS

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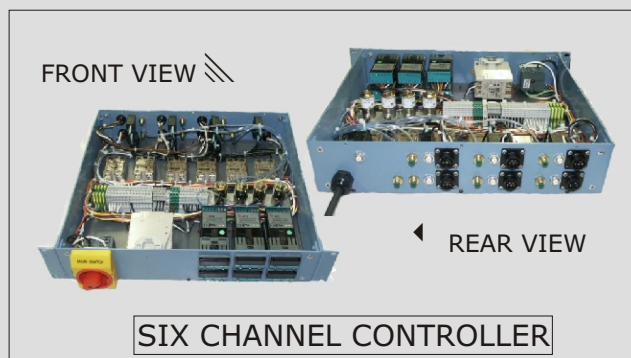
TEMPERATURE CONTROLLER PACKAGES

All **Unique Heated Products'** heated devices require a method of controlling the heaters to the required set point. Where accuracy and control are essential to test results, a commonly used built-in, thermostatic type control device just isn't sufficient. **UHPI's Temperature Controller Package** is the answer. Manufactured to suit a wide range of applications and housing styles (i.e. NEMA type enclosure, Rack Mount, etc.), the units are available in your choice of 1 to 8 control channels. Thermal integrity is our business.

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19" RACK MOUNT STYLE

PANEL MOUNT STYLE



N.E.M.A. ENCLOSURE STYLE



MANY PROGRAMMING OPTIONS

- Full P.I.D. Function
- Ramp-Soak Ethernet Com Port
- Alarm Out Proportional Cycle Time
- Error Messages
- Power Strategy Sensor Selection
- Auto Tune Heat Cool Strategy Configuration Improving Controller



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TEMPERATURE CONTROLLER PACKAGES

BASE CONTROLLER SPECIFICATIONS

INPUT SENSOR TYPES

Thermocouple:	9 types (B E J K L N R S T)
Standards:	IPTS/68DIN 43710
CJC Rejection:	20:1 {0.05i/iC} typical
External Resistance:	100 W maximum

RESISTANCE THERMOMETER

RTD-2/Pt100 2 wire Standards:	DIN 43760 {100 W0iC/138.5W100iC Pt}
Bulb Current:	02mA maximum

DISPLAYS

Main 4 digits high brightness Green LED:	10mm {0.40} high
Digital Range:	199 to 9999
Hi-Res Mode:	199.9 to 999.9
LED output indicators:	flashing SP1 square - green SP2 round - red

ENVIRONMENTAL

Altitude:	up to 2000M
Pollution:	Degree LI
Installation:	Categories II and III
Ambient Temperature:	0° to 50° C {32° to 130° F}
Protection:	NEMA 4X, Lp66
EMC Immunity:	EN50082-2
EMC Emission:	EN50081-1
FCC Rules:	15 subpart J Class A
Mouldings:	Flame retardant polycarbonate
Weight:	110 g {3.9 oz} - single channel

OUTPUT DEVICES

SSd/SSd1/SSd2	Solid state relay driver to switch a remote SSR VDC +0/-15% 15mA
---------------	---

MINIATURE POWER RELAY

non-isolated rLY and rLY1:2A/250ac resistive load	Form A/SPST Contacts {AgCdO} Alarm contact
---	--

KEYPAD

3 elastomeric buttons

HUMIDITY

80% RH maximum

APPLICABLE TO ALL INPUTS

SM = SENSOR MAXIMUM

Calibration accuracy:	-0.25% SM - 1iC
Series mode rejection:	60dB, 50-60Hz
Sampling Frequency:	input 10Hz, CJC 2 seconds
Temperature coefficient:	501PP/mic
Common mode rejection:	Negligible effect up to 140dB, 240V, 50-60Hz
Reference conditions:	21iC - 22iC rated voltage after 14 minutes setting time



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TEMPERATURE CONTROLLER PACKAGES ORDERING GUIDE

EXAMPLE: CTR-2162-A-AK-10-B-4-AX-E144-000

FIELD NUMBER: ^ ^ ^ ^ ^ ^ ^ ^ ^ ^
 1 2 3 4 5 6 7 8 9

1. CONTROL MODEL

2162-CAL 3300 S.S. RELAY (MOST COMMON)
2219-CAL 3300 MECH RELAY
1363-FUJI S.S. RELAY
1364-FUJI MECH RELAY

2. HEATER VOLTAGE

A-120 VAC
B-230 VAC
G-12 VDC
H-208 VAC
I-480 VAC
M-24 VDC

3. INPUT SENSOR TYPE

A-THERMOCOUPLE (J OR K) (MOST COMMON)
B-THERMISTOR
C-RTD (PT100)
D-ADJUSTABLE THERMISTAT
E-SELF LIMITING

4. CURRENT PER CHANNEL

AMOUNT OF CURRENT CAPABLE
PER RELAY, PER CHANNEL
IN AMPERES

5. ENCLOSURE TYPE

A-OPEN PANEL MOUNT
B-NEMA 12 (MOST COMMON)
C-NEMA 4
D-19 INCH RACK
E-CLASS 1 DIV 2

6. NUMBER OF CHANNELS

1, 2, 3, 4, ETC.

7. DEVICE CONNECTOR TYPE

A-7 PIN CONNECTOR (13 AMP MAX)
B-7 PIN CONNECTOR (45 AMP MAX)
D-LOOSE WIRE W/STRIPPED ENDS
E-NEMA 5-15 AMP RECEPTACLE
F-FLEXIBLE CONDUIT (HARD WIRE)
G-MIL SPEC CON. (AMPHENOL)
H-CLASS 1 DIV 2
I-CLASS 1 DIV 1
J-3 PIN MOLEX CON (11 AMP MAX)
K-NEMA 6-30 AMP RECEPTACLE
L-REMOTE T-STAT
M-FEMALE TWIST LOCK W/TC
N-9 PIN CONNECTOR (13 AMP MAX)
R-CONNECTOR BOX W/7 PIN CON.3.

8. POWER CABLE TYPE (LENGTH)

D-LOOSE WIRE
E-SO CORD W/NEMA 5-15 PLUG
F-FLEXIBLE CONDUIT
H-CLASS 1 DIV 2
I-CLASS 1 DIV 1
K-SO CORD W/NEMA 6-30 PLUG

9. OPTIONS

FOR ALL OPTIONS PLEASE SEE
OPTIONS PAGE OR CONTACT
UHP SALES AND TECH SUPPORT



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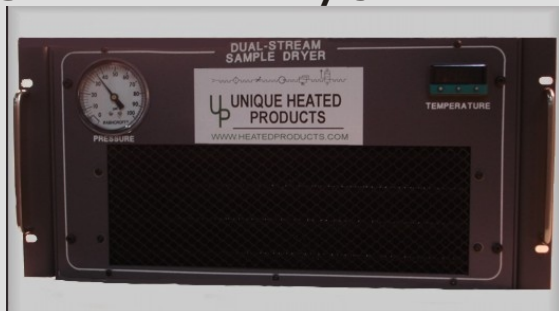
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SAMPLE DRYERS/CHILLERS

Unique Heated Products' Sample Dryers/Chillers are designed to protect your analyzer by removing humidity from your sample streams quickly and efficiently. Using a process which drops the sample's temperature at two different locations, **UHPI's** dryer/chiller removes virtually all moisture from the sample stream through our innovative **Accessory Pump Package**. The Dryers/Chillers and Pump Packages can be configured for standard 19" Rack Mount and/or Free Standing to accommodate convenient access to drainage systems. Available in your choice of one to four sample streams and mounting styles, **Unique** provides the most efficient Dryer/Chiller on the market. Meet tomorrow's regulations today - CALL **UNIQUE**

SAMPLE DRYER/CHILLER



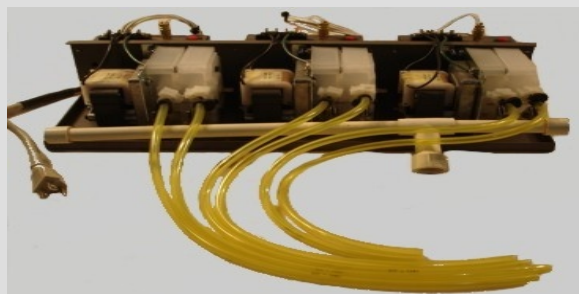
FEATURES AND SPECIFICATIONS

- Standard in 1/4" O.D. Tube size
- One to four sample streams
- Maintains 34° F sample temperature in -20° F to +115° F ambient conditions
- 0-100 SCFH / 10 PSIG maximum sample flow rate
- 19" Rack Mount or Free Standing
- 120/220 VAC, 50/60Hz, other power available

FEATURES AND SPECIFICATIONS

- Peristaltic pumps with Tygon tubing
- Trap drain alarm triggers the pump pack at 1" of water with a manual override
- Supplied with all required tubing and fittings
- Stainless steel frame for durability
- 120/220 VAC, 50/60Hz, other power available

ACCESSORY PUMP PACKAGE



SAMPLE DRYER/CHILLER

Model #331-2886	Single Stream
Model #331-2876	Dual Stream
Model #331-2887	Triple Stream
Model #331-3124	Quad Stream

ACCESSORY PUMP PACKAGE

Model #131-2886
Model #131-2876
Model #131-2887
Model #131-3124

Dimensions: Dryer/Chiller - 19" W x 15" D x 8.75" H (20" D with 1st Stage Trap Separators installed)
Pump Package -

Sample Stream: 20 ft long x 1/4" O.D. .030 wall 316 stainless steel (per stream)

OTHER SPECIFICATIONS

Condenser: Four tube copper, aluminum finned radiator, forced air type.

Coolant Type: R134A refrigerant

Operating Specs: -20° F to +115° F ambient conditions, 0-100 SCFH max. sample flow rate. 0-100 PSIG max.

Pressure, 50% reduction in Relative humidity. 34° F normal sample operating temperature

Electrical: 120/220 VAC, 50/60 Hz, Single Phase, 6.5A/3.25



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HEATED AND INSULATED BLANKETS

Unique Heated Products' Heated and Insulated Blankets are designed for viscosity control, freeze protection, and dispensing temperature sensitive media. **UHPI's** use of superior insulations and a completely uniform, proprietary heating element applied to the blanket's entire inner surface creates the most temperature stable heated blanket on the market.

Meet tomorrow's regulations today - CALL **UNIQUE**



FEATURES AND SPECIFICATIONS

Wrap-around Blankets protect cylindrical or cubical shapes and typically use Velcro™, zippers, or laced grommets to hold them in place. Custom designed to heat in situ pipes, hoses, valves, and other components, these blankets are ideal when pumping temperature-critical substances.



- Temperatures up to 400° C with 600° C internal exposure capability
- Can be used outdoors
- Blanket material and insulation to be determined by **UHPI**
- Can be designed for all applications



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HEATED AND INSULATED BLANKETS ORDERING GUIDE

EXAMPLE: BKT-D-2-120-10-G-B-C-5-A-AK-D72-000

FIELD NUMBER: ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^
1 2 3 4 5 6 7 8 9 10 11 12

1. INSIDE MATERIAL

TO BE DETERMINED BY UHP

2. OUTSIDE MATERIAL

TO BE DETERMINED BY UHP

3. LENGTH IN INCHES

OVERALL LENGTH

4. WIDTH IN INCHES

OVERALL WIDTH

5. INSULATION TYPE

TO BE DETERMINED BY UHP

6. TEMPERATURE RANGE

A-100 DEG C (212 F)
B-200 DEG C (392 F)
C-300 DEG C (572 F)
D-400 DEG C (752 F)

7. INTERNAL EXPOSURE RANGE

A-100 DEG C (212 F)
B-200 DEG C (392 F) (MOST COMMON)
C-300 DEG C (572 F)
D-400 DEG C (752 F)
E-500 DEG C (932 F)
F-600 DEG C (1082 F)

8. CLOSURE TYPE

1-HOOK AND LOOP (VELCRO)
2-GROMMET
3-HOOK AND EYE
4-NONE (FLAT BLANKET)
5-ZIPPER
7-RINGLET AND LACE

9. HEATER VOLTAGE

A-120 VAC
B-230 VAC
G-12 VDC
H-208 VAC
I-240 VAC

10. SENSOR TYPE

A-THERMOCOUPLE (J OR K)
B-THERMISTOR
C-RTD (PT100)
D-ADJUSTABLE T-STAT
E-SELF-LIMITING

11. POWER CABLE TYPE (LENGTH)

A-7 PIN CONNECTOR (13 AMP MAX)
B-7 PIN CONNECTOR (45 AMP MAX)
E-SO CORD W/NEMA 5-15 PLUG
F-FLEXIBLE CONDUIT
G-MILSPEC CONNECTOR
H-CLASS 1 DIV 2
I-CLASS 1 DIV 1
J-3 PIN MOLEX CON. (11 AMP MAX)
K-SO CORD W/NEMA 6-30 PLUG
M-MALE TWIST LOCK W/TC
N-9 PIN CONNECTOR (13 AMP MAX)
R-CONNECTOR BOX W/7 PIN CON.

12. OPTIONS

FOR ALL OPTIONS PLEASE SEE
OPTION PAGE OR CONTACT
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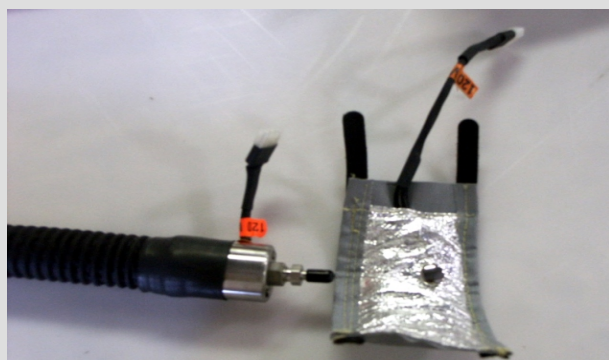
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HOT POCKET JUNCTION HEATERS

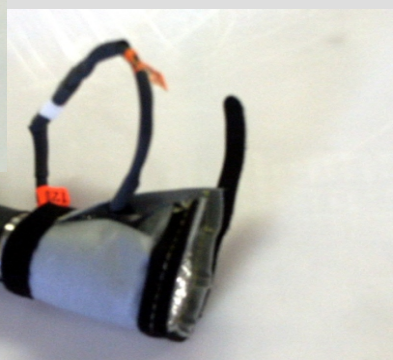
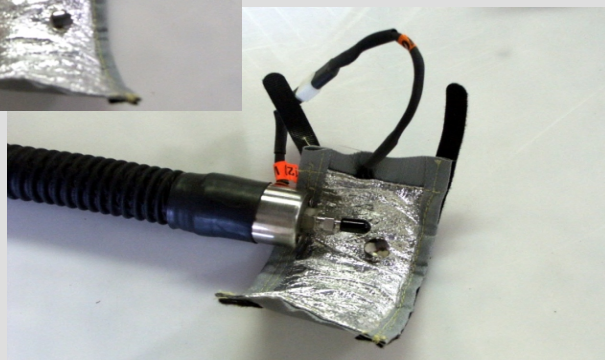
Unique Heated Products' Hot Pocket Junction Heater eliminates cold spots, assuring your sample streams maintain their thermal integrity throughout the flow path. **UHPI** designed a small, heated blanket (the "Hot Pocket") that easily fits around tube unions, junctions, tees, and small fittings. All current **UHPI** products come equipped with Hot Pocket connectors to drive the Hot Pocket without the need for additional Temperature Controllers. Don't let cold spots damage your equipment or your test results.

Meet tomorrow's regulations today - CALL **UNIQUE**



FEATURES AND SPECIFICATIONS

- Installs in seconds
- Slave heater, does not require its own Control Zone
- Fits 1/4" and 3/8" tube fittings
- 120 VAC typical operation
- Interior: Aluminized fiberglass cloth
- Exterior: Abrasion Resistant polyurethane cloth



Model #450-2895	Tube Union style
Model #450-2878	Tube Elbow style
Model #450-2894	Tube Tee style

Splitter cables are available to drive multiple hot pockets with a single **UHPI** device. (Example: use the connector from a single **UHPI Heated Line** to power Hot Pockets on the Inlet port and Outlet port of a **UHPI Heated Filter** attached to a **UHPI Heated Line**.)

Model #475-2896	2 from 1 (1 ea. 6" leg & 12" leg)
Model #475-2831	3 from 1 (2 ea. 6" leg & 1 20" leg)

Unique's Hot Pocket Junction Heaters are available in custom configurations to suit your conditions. Choose the voltage, temperature range, and closure type.



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UNIQUE HEATED PRODUCTS

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HEATED HEAD PUMPS

Unique Heated Products' Heated Head Pumps are designed for use wherever maintaining the thermal integrity of a gas, air, or emissions sample throughout the flow path is desired. Ideally suited for Automotive, Deisel, CEM Laboratory, Air Quality, and Monitoring applications, **UHPI's** Heated Head Pumps maintain precise temperature stability using **UHPI's** external Temperature Controller Package. Superior insulations and a completely uniform, proprietary heating element applied to the pump head's entire surface combine to create the most temperature stable Heated Head Pump on the market.

Meet tomorrow's regulations today - CALL **UNIQUE**



Model #PMP-4187

Model #PMP-4186

Heater: 600 mA @ 120 VAC

Free Flow Capacity: .19 SCFM (22.4 in/Hg)

Model #PMP-4187

Heater: 1.7 A @ 120 VAC

Free Flow Capacity: .47 SCFM (22.8 in/Hg)

Model #PMP-4188

Heater: 2.8 A @ 120 VAC

Free Flow Capacity: .88 SCFM (26.9 in/Hg)

Model #PMP-4189

Heater: 2.8 A @ 120 VAC

Free Flow Capacity: 1.15 SCFM (27 in/Hg)

Model #PMP-4190

Heater: 5.6 A @ 120 VAC

Based on a Dual Head Diaphragm pump

Heads may be run in parallel or a series for optimal performance

UHPI's Heated Head Pumps feature low temperature, high-impact plastic exteriors to increase operator safety and are available in your choice of port types & sizes, heater & motor voltages, temperature sensors, and many more options.

FEATURES AND SPECIFICATIONS

Model #PMP-4186, PMP-4187, PMP-4188, & PMP-4189

- All Teflon/tainless Steel wetted parts
- Based on a diaphragm pump
- **A UPHI Exclusive:** Accessible Head Bolts to re-torque once the pump has reached operating temperature



Model #PMP-4189



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HEATED HEAD PUMPS ORDERING GUIDE

EXAMPLE: PMP-4188-B-E-6-A-AK-RXX-000

FIELD NUMBER: ^ ^ ^ ^ ^ ^ ^ ^
 1 2 3 4 5 6 7 8

1. PUMP MODEL

4186-SS SINGLE HEAD
5L/MINUTE (10.6 SCFH)
4187-SS SINGLE HEAD
13L/MINUTE (27.5 SCFH)
4188-SS SINGLE HEAD
25L/MINUTE (52.9 SCFH)
4189-SS SINGLE HEAD
30L/MINUTE (63.6 SCFH)
4190-SS DUAL HEAD
62L/MINUTE (131.4 SCFH)

2. TEMPERATURE RANGE

A-100 DEG C (212 F)
B-200 DEG C (392 F) (MOST COMMON)
C-300 DEG C (572 F)
D-400 DEG C (752 F)
E-500 DEG C (932 F)

3. PORT CONNECTION TYPE

E-TUBE STUBS (STANDARD)

FOR ALL OTHER OPTIONS PLEASE
CONTACT UHP SALES AND TECH
SUPPORT

4. PORT SIZE

ENGLISH	METRIC
4-1/4 INCH	M4-4MM
6-3/8 INCH	M6-6MM
8-1/2 INCH	M8-8MM

5. HEATER VOLTAGE

A-120 VAC
B-230 VAC
G-12 VDC
H-208 VAC
I-480 VAC
M-24 VDC

6. SENSOR TYPE

A-THERMOCOUPLE (J OR K)
B-THERMISTOR
C-RTD (PT100)
D-ADJUSTABLE T-STAT
E-SELF-LIMITING

7. POWER CABLE TYPE (LENGTH)

A-7 PIN CONNECTOR (13 AMP MAX)
B-7 PIN CONNECTOR (45 AMP MAX)
D-LOOSE WIRE W/STRIPPED ENDS
E-SO CORD W/NEMA 5-15 PLUG
F-FLEXIBLE CONDUIT
G-MIL SPEC CONNECTOR
H-CLASS 1 DIV 2
I-CLASS 1 DIV 1
J-3 PIN MOLEX CON. (11 AMP MAX)
K-SO CORD W/NEMA 6-30 PLUG
L-REMOTE T-STAT
M-MALE TWIST LOCK W/TC
N-9 PIN CONNECTOR (13 AMP MAX)
R-CONNECTOR BOX W/7 PIN CON.

8. OPTIONS

FOR ALL OPTIONS PLEASE SEE
OPTIONS PAGE OR CONTACT
UHP SALES AND TECH SUPPORT



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HEATED HC/NOX SAMPLE PROBES

Conforms to EPA Title 40, part 86.1310-84 CFR

Unique Heated Products' Heated Sample Probes are designed for applications requiring extraction and thermal control of gaseous emissions samples. Superior insulations, a proprietary heater element, and an innovative packaging technique combine to make **UHPI's** Heated Sample Probe perform precisely to your applications design requirement.

Meet tomorrow's regulations today - CALL **UNIQUE**

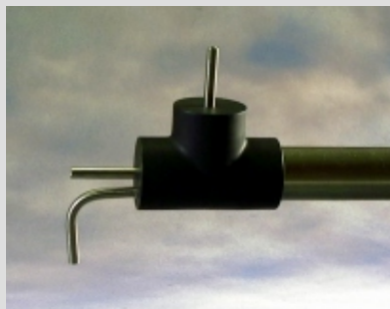
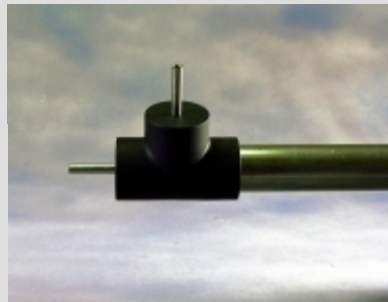


FEATURES AND SPECIFICATIONS

Model #PRB-1044

Sample extraction tip, sample outlet port, and thermocouple port. Automotive, Diesel, CEM, and Laboratory applications requiring sample stream temperature verification.

- 400° F Operational Temperature
- Up to 30 SCFH of flow



FEATURES AND SPECIFICATIONS

Model #PRB-1047

Sample extraction tip, sample outlet port, span tip/overflow port, and thermocouple probe port. Automotive, Diesel, CEM, and Laboratory applications requiring span overflow and sample stream temperature verification.

- 400° F Operational Temperature
- Up to 30 SCFH of flow

Unique's Heated Sample Probes are custom configured to suit your specific application. Overall length is determined by sample flow rate (i.e. The higher the flow, the longer the probe). Features include an all stainless steel exterior for maximum durability and 316 stainless steel throughout the wetted sample path. Call for a custom quote!



UNIQUE HEATED PRODUCTS

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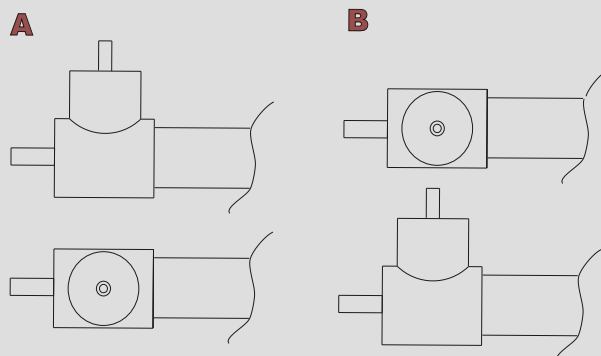
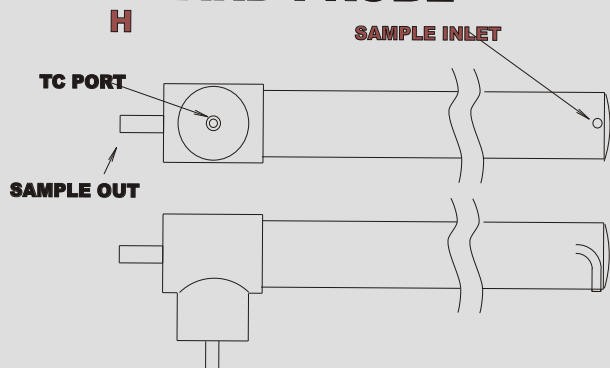


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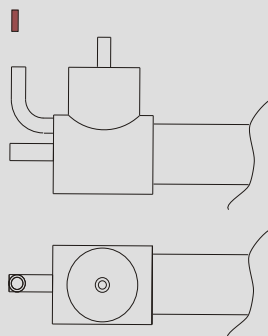
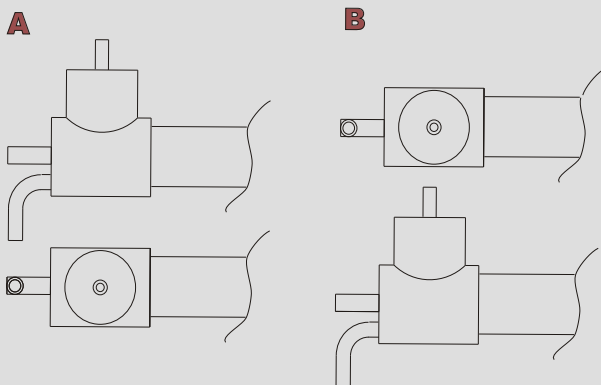
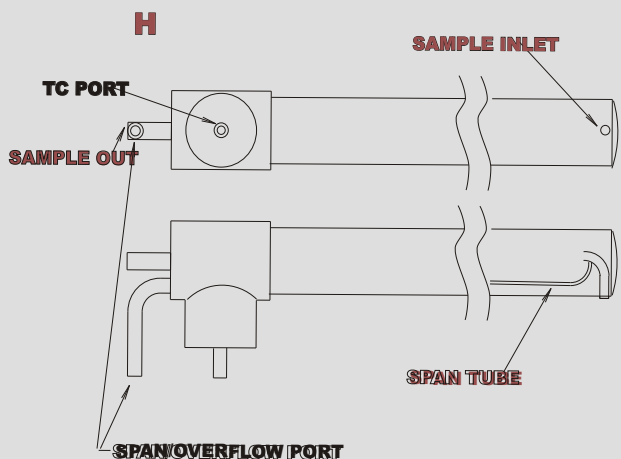
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HEATED SAMPLE PROBE TIP TO END ORIENTATION CHART

STANDARD PROBE



PROBE WITH SPAN OVERFLOW



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HEATED HC/NOX SAMPLE PROBE ORDERING GUIDE

EXAMPLE: PRB-1047-B-4-20-32-S-C-A-AK-RXX-000

FIELD NUMBER: 1 2 3 4 5 6 7 8 9 10 11

1. PROBE MODEL

1042-SAMPLE TUBE ONLY
(NO SPAN PORT)
1044-SAMPLE TUBE AND
THERMOCOUPLE PORT
1047-SAMPLE TUBE, SPAN
PORT, AND (MOST COMMON)
THERMOCOUPLE PORT
1136-HIGH FLOW, SAMPLE TUBE

2. TEMPERATURE RANGE

A-100 DEG C (212 F)
B-200 DEG C (392 F) (MOST COMMON)
C-300 DEG C (572 F)
D-400 DEG C (752 F)
E-500 DEG C (932 F)

3. PORT SIZE

ENGLISH	METRIC
4-1/4 INCH	M4-4MM
6-3/8 INCH	M6-6MM
8-1/2 INCH	M8-8MM

4. OUTER SLEEVE DIAMETER

8-1/2 INCH
12-3/4 INCH
16-1 INCH
20-1-1/4 INCH
24-1-1/2 INCH

5. LENGTH IN INCHES

TOTAL LENGTH OF HEATED AREA
EXCLUDING TUBE ENDS

6. SAMPLE TUBE MATERIAL

S-STAINLESS STEEL
T-TEFLON

7. INLET/OUTLET ORIENTATION

SEE CHART

8. HEATER VOLTAGE

A-120 VAC
B-230 VAC
G-12 VDC
H-208 VAC
I-480 VAC

9. SENSOR TYPE

A-THERMOCOUPLE (A OR J)
B-THERMISTOR
C-RTD
D-ADJUSTABLE T-STAT

10. POWER CABLE TYPE (LENGTH)

A-7 PIN CONNECTOR (13 AMP MAX)
B-7 PIN CONNECOTR (45 AMP MAX)
D-LOOSE WIRE W/STRIPPED ENDS
E-SO CORD W/NEMA 5-15-PLUG
F-FLEXIBLE CONDUIT
G-MIL SPEC CONNECTOR
H-CLASS 1 DIV 2
I-CLASS 1 DIV 1
J-3 PIN MOLEX CON. (11 AMP MAX)
K-SO CORD W/NEMA 6-30 PLUG
L-REMOTE T-STAT
M-MALE TWIST LOCK W/TC
N-9 PIN CONNECTOR (13 AMP MAX)
R-CONNECTOR BOX W/7 PIN CON.

11. OPTIONS

FOR ALL OPTIONS PLEASE SEE
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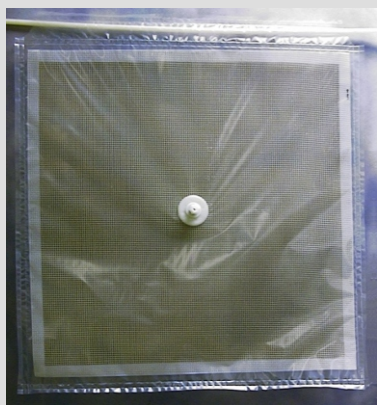
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POLYMER FILM SAMPLE BAGS

Unique Heated Products' Sample Bags are designed for use in gas analysis labs, emissions research facilities, on-site monitoring stations, or wherever a gas or compound sample is collected or stored. **UHPI's** patented Grid-Vac™ sampling system enables the most complete evacuation of the bag. Internal mixing tubes and "Big Bags" for volume displacement in shed applications are available.

Meet tomorrow's regulations today - CALL **UNIQUE**

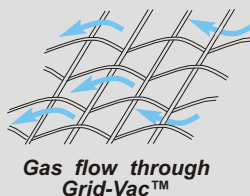


FEATURES AND SPECIFICATIONS

Grid-Vac™ bags are made of your choice of Tedlar™ or Teflon™ with a variety of port types & sizes, internal grid materials, grommets, and integrated sleeve hangers.

- Ensures complete bag evacuation
- Provides for optimum gas blending
- Reduces bag fatigue during repeat cycles

Our patented *Grid-Vac*™ system sandwiches a grid between the bag's outer skins. As gas is evacuated, spacing in and around the grid provide passageways for gases to escape. This eliminates air pockets and blends your sample as it is evacuated.



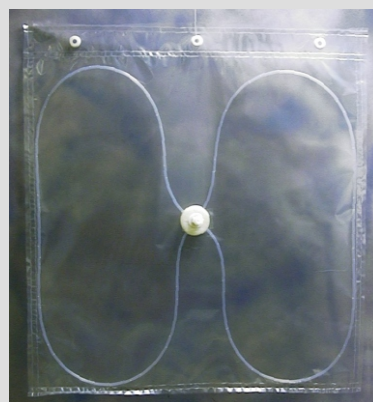
Gas flow through
Grid-Vac™

Grid-Vac™ adds mechanical strength and decreases bag fatigue by giving the bag skin an even pattern to form to during repeated cycles. Our lightweight, low profile puck minimizes bag stress during evacuation and inflation.

FEATURES AND SPECIFICATIONS

CVS "Butterfly Bags" have been an emissions industry standard for years and are made of your choice of Tedlar™ or Teflon™ with a variety of port types & sizes, internal fittings, grommets, and integrated sleeve hangers.

- Internal tubes for blending and support
- Low profile puck for reduced bag fatigue



Unique's Polymer Film Sample Bags are made to order, meeting your dimensions and specifications. All are double heat sealed and individually leak checked by UHPI trained technicians. Tubes or grids and internal fittings may be returned to UHPI for re-manufacture or re-skinning.



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POLYMER FILM SAMPLE BAGS ORDERING GUIDE

EXAMPLE: PFB-1765-E-44-26-A-B-A-4-000

FIELD NUMBER: ^ ^ ^ ^ ^ ^ ^ ^ ^
 1 2 3 4 5 6 7 8 9

1. INSIDE MATERIAL

1419-"BUTTERFLY" MIXING TUBES
3997-BOX BAG
4063-FLAT SHED BAG
1765-GRID-VAC GAS SYSTEM

2. FILM MATERIAL

A-TEDLAR
B-TEFLON
C-POLY
D-CAPRAN
E-KYNAR

3. HEIGHT (SEAL – SEAL)

IN INCHES

4. WIDTH (SEAL – SEAL)

IN INCHES

5. HANGER TYPE

A-GROMMETS (LONG SIDE)
B-GROMMETS (SHORT SIDE)
C-SLEEVE (LONG SIDE)
D-SLEEVE (SHORT SIDE)

6. GRID/TUBE MATERIAL

A-POLYMERIC
B-NYLON
C-TEFLON
D-STAINLESS STEEL
E-PVC
F-PERFORATED TUBE
G-VINYL COATED POLYESTER
H-KYNAR

7. CONNECTION TYPE

A-COMPRESSION
B-FEMALE NPT
C-MALE NPT
D-OD HOSE BARB
E-"SADDLE SEAL"
F-5/8-20 UN MALE
G-FOOTBALL

8. CONNECTION SIZE

ENGLISH	METRIC
4-1/4 INCH	M4-4MM
6-3/8 INCH	M6-6MM
8-1/2 INCH	M8-8MM
12-3/4 INCH	M12-12MM

9. OPTIONS

FOR ALL OPTIONS PLEASE SEE
OPTION PAGE OR CONTACT
UHP SALES AND TECH SUPPORT



**UNIQUE HEATED
PRODUCTS**

22797 Macomb Industrial Dr.
Clinton Twp. MI 48036



**UNIQUE HEATED
PRODUCTS**

**Get your quote today!
586-783-5725**

AQUANOX III PURGING SYSTEM

Unique Heated Products' Aquanox III Purging System is designed to provide an economical method of cleaning emissions testing components of debris encountered during normal processes. It may also be used to sanitize the flow path in equipment where contaminants have an adverse effect on the quality of the final product, such as those used in the pharmaceutical or food industry.



FEATURES AND SPECIFICATIONS

- Designed in a hand cart style for easy mobility
- Adjustable flow control
- Adjustable temperature range up to 82°C
- 5 gallon Cleaning Fluid capacity
- Secondary filtering using activated charcoal filter
- Retractable power cord



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