

For Your Safety

It is solely the responsibility of the system designer and user to select products suitable for their specific application requirements and to ensure proper installation, operation, and maintenance of these products. When selecting products, the total system design must be considered to ensure safe, trouble-free performance. Material compatibility, product ratings and application details should be considered in the selection. Improper selection or use of products described herein can cause personal injury or property damage.

Contact your authorized GO Regulator sales and service representative for information about additional sizes and special alloys.

SAFETY WARNING:

GO Regulator products are designed for installation only by professional suitably qualified licensed system installers experienced in the applications and environments for which the products are intended. These products are intended for integration into a system. Where these products are to be used with flammable or hazardous media, precautions must be taken by the system designer and installer to ensure the safety of persons and property. Flammable or hazardous media pose risks associated with fire or explosion, as well as burning, poisoning or other injury or death to persons and/or destruction of property. The system designer and installer must provide for the capture and control of such substances from any vents in the product(s). The system installer must not permit any leakage or uncontrolled escape of hazardous or flammable substances. The system operator must be trained to follow appropriate precautions and must inspect and maintain the system and its components including the product(s) and at regular intervals in accordance with timescales recommended by the supplier to prevent unacceptable wear or failure.

GO REGULATOR, INC.

HPR-2 Series "Next Generation"

Electrically Heated Regulators

Applications

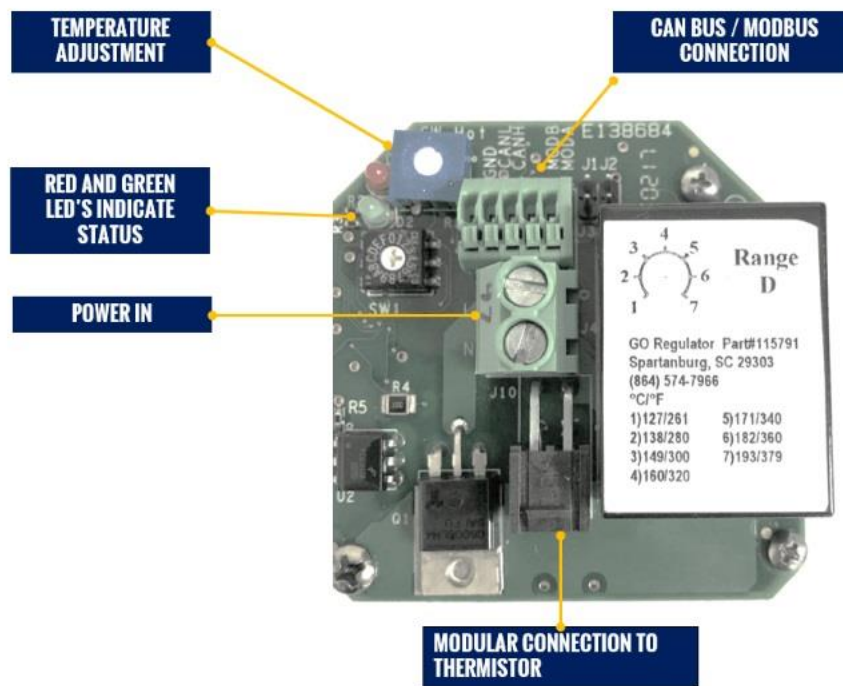
Liquid Petroleum Analyzers
Sampling Conditioning System
Petrochemical / Refinery Analyzer

New!

Electronic controller and thermistor for vaporizing regulators HPR2

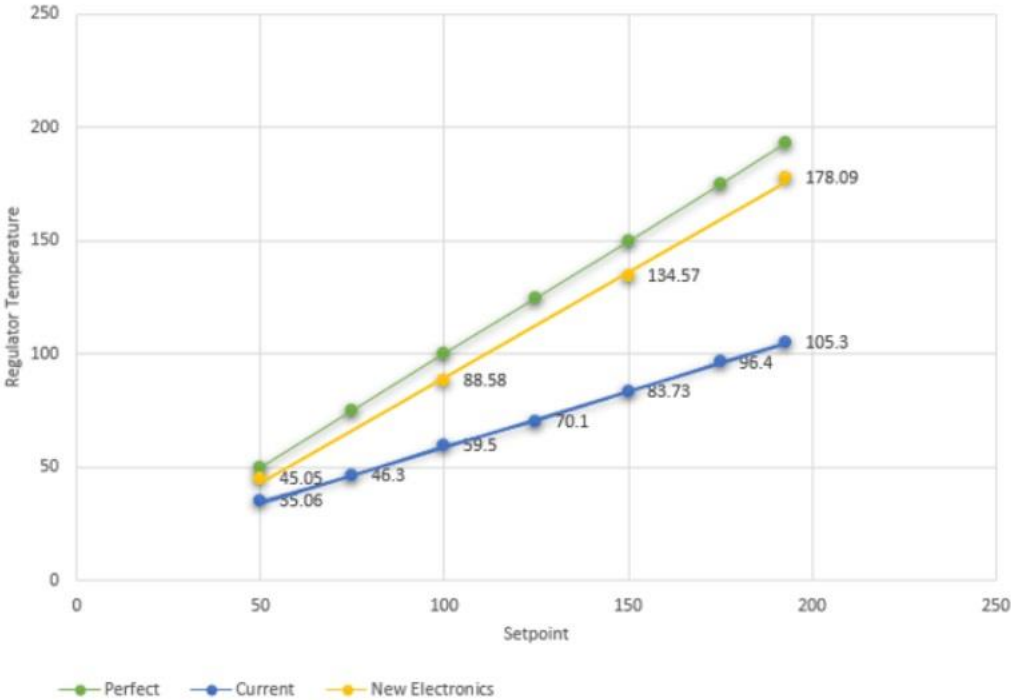
State-of-the-art Firmware Controller provides faster and more accurate Temperature Control, greater overall performance; prevents condensation of gases and consistent vaporization of liquids prior to gas analysis.

Temperature can be Controlled via Communication Bus
(CANbus & RS485 MODbus)



1. For simplification; all AC / DC units are now consolidated into one controller
2. Optional communications and control via RS485 Modbus and CANbus connectivity
3. Communication bus allows for in the field firmware updates
4. Troubleshooting made easy with LED flash codes
5. RoHS compliant

Comparison of Current vs New Electronics



GO REGULATOR, INC.

HPR-2 Series "Next Generation"

Electrically Heated Regulators

Introduction

The HPR-2 Series heated pressure regulator is designed to supply heat to samples entering instrumentation systems. It can be used to preheat liquids, to prevent condensation of gases or to vaporize liquids prior to gas analysis.

The modular design of the HPR-2 consists of heat exchanger and pressure control sections. The pressure control section is patterned after the time proven design of the PR-1 pressure reducing regulator and provides the same excellent outlet pressure stability. The heat exchanger section is made up of a body and heat exchange element. The heat exchange element uses GO Regulator's unique spiral wrapped screen as the heat exchange surface. This screen has up to 100 square inches of heat transfer area and precise design forces all sample flow to pass through the element.

The HPR-2 Series of vaporizing pressure reducing regulators are both CSA and ATEX approved. The electrical components of this unit are securely housed in a Class A, B, C, D conduit assuring that there is always an adequate flame path between the environment and the controller. Safety considerations can be further enhanced by using the optional TCO (Thermal Cut Out) heater cartridge. This feature enables the unit to boast a T3 rating with up to 250 watts of power (250w is rated T2C for CSA).

Now available is the Next Generation electronics in all GO Regulator electrically heated regulators. In addition to quicker heating and more stable set temperatures, is the ability to remotely control and monitor the unit utilizing the new CANbus/Modbus feature. By utilizing one of these protocols, end users can remotely control heating of the unit, including temperature increase, decrease and power on and off, as well as basic monitoring such as temperature setpoint, actual heater/thermistor temperature, power output percentage and controller status.

As part of the Next Generation electronics, is the introduction of one temperature controller on a state of the art PCB. The unit will still ship factory set to one of the four available temperature ranges for accurate manual setting. When controlled through one of the new bus options, the user will be able to remotely control temperature throughout the complete temperature range of 55° F (13° C) to 380° F (194° C).

Also integrated into the new PCB controller are LED's that indicate status and a modular connection to the heater/thermistor. The modular connector makes for quicker and error proof changing and maintaining of the heater/thermistor. Please contact your local Crane / GO Regulator representative for more information.

Typical Applications

Analytical process sample conditioning systems:

- Petrochemical refineries
- Chemical production facilities
- Pilot plants (chemical & petrochemical)
- LNG loading and off-loading points
- Natural gas pipeline sampling

Technical Data

CONSTRUCTION	316L stainless steel
OUTLET PRESSURES	0-10, 0-25, 0-50, 0-100, 0-250, 0-500, 0-750 and 0-1000 psig
INLET PRESSURE	up to 6000 psig at 380° F (193° C)
HEATING CAPACITY RANGES (IN WATTS)	50, 100, 150, 200 and 250
Cv COEFFICIENTS	0.06, 0.025, 0.2
CERTIFICATIONS	CSA certification # LR-82566-5 ATEX Directive 2014/34/EU Certification # TRL03ATEX11001X

Features & Benefits

- Optional HASTELLOY® C and MONEL®
- 316L stainless steel body with better than 25 Ra finish in diaphragm cavity for an optimal sealing surface
- Bubble-tight shutoff
- Modular pressure control and heat exchanger assemblies for easy maintenance
- Unique spiral wrapped heat exchange element provides up to 100 square inches of heat transfer area.
- Available in 120VAC or 230VAC
- Optional TCO heating cartridge
- INCONEL® diaphragm standard
- Control box complies with NEMA 4 Class 1 Div. 1 and IP66



pressure regulators

HPR-2 Series

To Order, contact your local Distributor Link below:
www.goreg.com/distributor/index.htm

Verify that your chosen part number is valid using the GO Wizards at
www.goreg.com/products/matrix/index.htm

How to Order

Standard items in bold

H2 - 4 Z 3 3 H 3 G 4 1 4 7

BODY MATERIAL

1 316L stainless steel,
stainless steel diaphragm

C 316L stainless steel, INCONEL® diaphragm
4 MONEL®, INCONEL® diaphragm
6 HASTELLOY® C, INCONEL® diaphragm

PORT CONFIGURATION

Z One inlet port, one outlet port
For more configurations, see pages 38-45

TEMPERATURE RANGE / HEATING TYPE

1 55°-85°F (13-29°C)
2 75°-175°F (24-80°C)
3 130°-300°F (54-149°C)
4 260°-380°F (126-194°C)
8 No electronics

HEATER WATTAGE

1 40W
2 50W
3 100W
4 150W
8 200W
9 250W (T2C/230°C for CSA)
6 No electronics

SEAT MATERIAL

A Tefzel®
B Ceramic Filled PTFE
H PCTFE
Q PEEK™

FLOW COEFFICIENT (Cv)

3 0.06
5 0.2
C 0.025

OPTIONS (NOT REQUIRED)

B EB5 cleaning
D Helium leak test

E Pressure test certificate
F Certificate of Conformity
G CMTR

OPTIONS

1 TCO thermistor
5 6000 psig inlet w/TCO thermistor (1-pc assy.)
7 6000 psig inlet w/standard thermistor (1-pc assy.)
0 Other options

CAP ASSEMBLY

1 Tamper-proof, standard, stainless steel
4 Tamper-proof, panel, mount, stainless steel
7 Tamper-proof, captured vent, stainless steel
J Tamper-proof, captured vent, panel mount, stainless steel
L BP-6 topworks

HEATER BLOCK PORTING

1 Standard block
2 Extra outlet block
For more blocks, see pages 36-37

HEATER BLOCK TYPE

3 120 VAC
4 230 VAC
5 No electronics

OUTLET RANGE

C 0-10 psig
D 0-25 psig
E 0-50 psig
G 0-100 psig
I 0-250 psig
J 0-500 psig
W 0-750 psig
K 0-1000 psig (BP-6 topworks)

NOTE: 1. Contact the factory for any additional requirements.

2. Units that will be used for flammable liquid or gas with fire point at 200°C or below require the TCO Thermistor. It is also recommended to use the 1-PC body option. In addition, Tefzel and PCTFE seats in these units are recommended to use the captured vent cap option which provides for venting to a safe location.

Maximum Temperature & Operating Inlet Pressures

HPR-2 Electric 2-piece Assembly

(Heater block and regulator body separate)

SEAT MATERIAL	MAXIMUM TEMPERATURE	@	MAXIMUM OPERATING INLET PRESSURE
	Up to 175° F (80° C)	@	3600 psig (24.82 MPa)
Tefzel®	176° F to 300° F	@	1000 psig (6.90 MPa)
Ceramic Filled PTFE	(80° C to 148° C)		
& PCTFE	301° F to 380° F (148° C to 193° C)	@	400 psig (2.76 MPa)
PEEK™	Up to 380° F (193° C)	@	3600 psig (24.82 MPa)

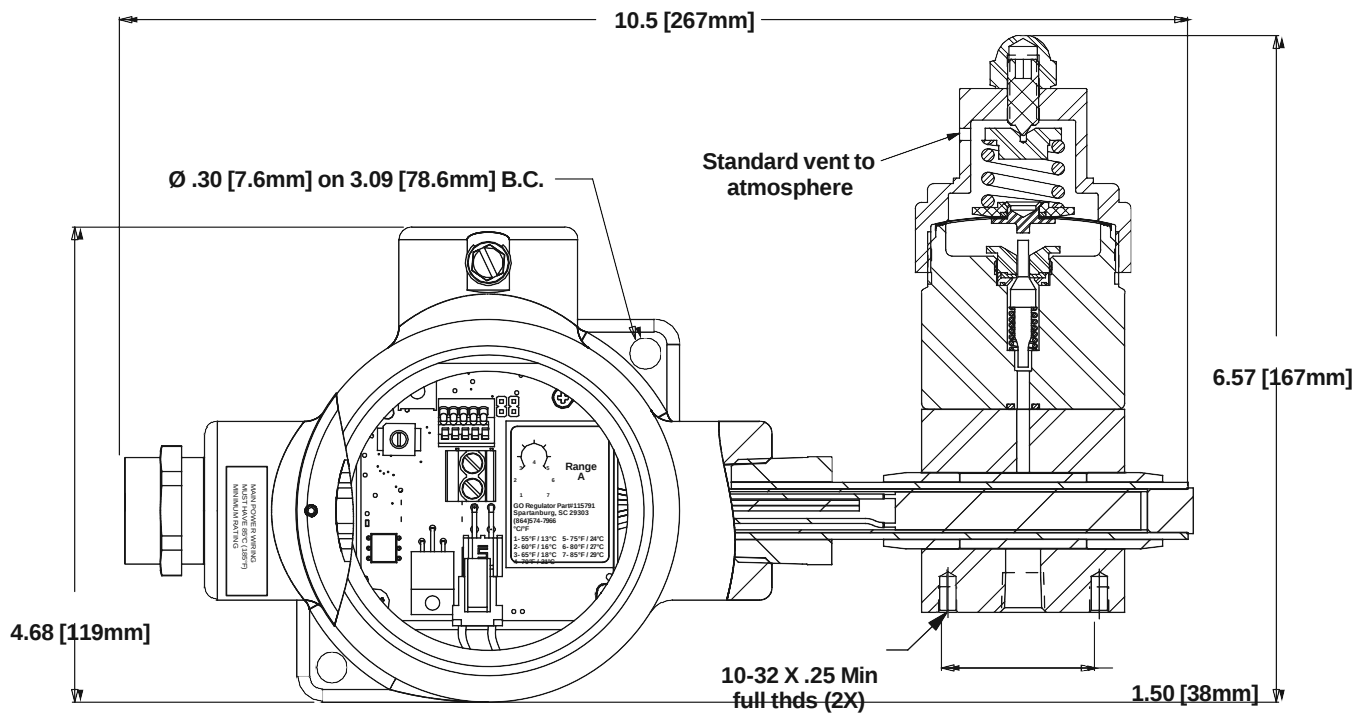
HPR-2 Electric 1-piece Assembly

(Integral heater block and regulator)

SEAT MATERIAL	MAXIMUM TEMPERATURE	@	MAXIMUM OPERATING INLET PRESSURE
	Up to 175° F (80° C)	@	3600 psig (24.82 MPa)
Tefzel®	176° F to 300° F	@	1000 psig (6.90 MPa)
& Ceramic Filled PTFE	(80° C to 148° C)		
	301° F to 380° F (148° C to 193° C)	@	400 psig (2.76 MPa)
PCTFE	Up to 175° F (80° C)	@	6000 psig (41.37 MPa)
	176° F to 300° F (80° C to 148° C)	@	1000 psig (6.90 MPa)
	301° F to 380° F (148° C to 193° C)	@	400 psig (2.76 MPa)
PEEK™	Up to 380° F (193° C)	@	6000 psig (41.37 MPa)

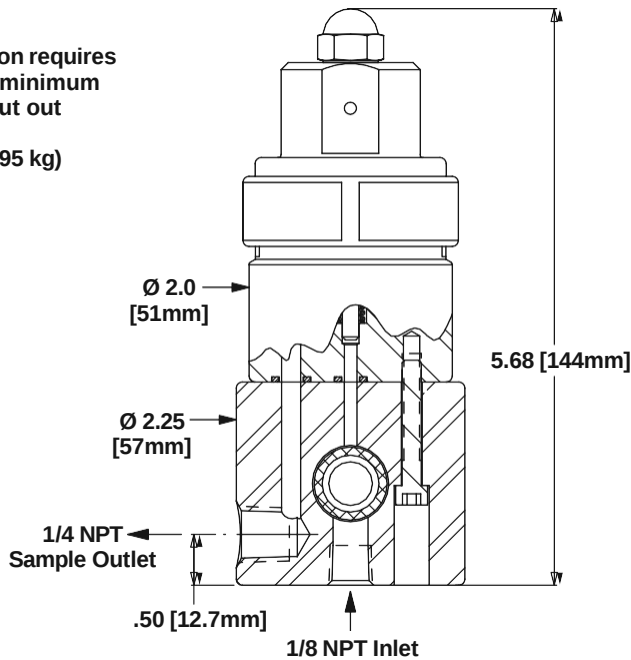
HPR-2 Series

Outline & Mounting Dimensions



Panel mount option requires
1.390" (35.3mm) minimum
diameter panel cut out

Weight 8.7 lbs (3.95 kg)



HPR-2XW Series "Next Generation"

Electrically Heated Pressure Regulator

Introduction

The HPR-2XW Series heated pressure regulator is designed to supply heat to samples entering instrumentation systems. It can be used to preheat liquids, to prevent condensation of gases or to vaporize liquids prior to gas analysis.

The modular design of the HPR-2XW consists of heat exchanger and pressure control sections. The pressure control section is patterned after the time-proven design of the PR-1 pressure reducing regulator and provides the same excellent outlet pressure stability. The heat exchanger section is made up of a body and heat exchange element. The heat exchange element uses GO Regulator's unique spiral wrapped screen as the heat exchanger surface. This screen has up to 100 square inches of heat transfer area and precise design forces all sample flow to pass through the element.



pressure regulators

The 2XW includes a removable heat exchanger unit.

This allows the user to remove and clean, or replace the exchanger. This is especially useful when heating dirty liquids or liquids that polymerize and clog the heat exchange screen.

The HPR-2 Series of vaporizing pressure reducing regulators are both CSA and ATEX approved. The electrical components of this unit are securely housed in a Class A,B,C,D conduit assuring that there is always an adequate flame path between the environment and the controller. Safety considerations can be further enhanced by using the optional TCO (Thermal Cut Out) heater cartridge. This feature enables the unit to boast a T3 rating with up to 250 watts of power. (CSA T2D rating for 250W). Now available is the Next Generation electronics in all GO Regulator electrically heated regulators. In addition to quicker heating and more stable set temperatures, is the ability to remotely control and monitor the unit utilizing the new CANbus/Modbus feature. By utilizing one of these protocols, end users can remotely control heating of the unit, including temperature increase, decrease and power on and off, as well as basic monitoring such as temperature setpoint, actual heater/thermistor temperature, power output percentage and controller status.

As part of the Next Generation electronics, is the introduction of one temperature controller on a state of the art PCB. The unit will still ship factory set to one of the four available temperature ranges for accurate manual setting. When controlled through one of the new bus options, the user will be able to remotely control temperature throughout the complete temperature range of 55°F (13°C) to 380°F (194°C).

Also integrated into the new PCB controller are LED's that indicate status and a modular connection to the heater/thermistor. The modular connector makes for quicker and error proof changing and maintaining of the heater/thermistor. Please contact your local Crane / GO Regulator representative for more information.

Typical Applications

Analytical process sample conditioning systems:

- Petrochemical refineries
- Chemical production facilities
- Pilot plants (chemical & petrochemical)
- LNG loading and off-loading points
- Natural gas pipeline sampling

Technical Data

CONSTRUCTION	316L stainless steel
OUTLET PRESSURES	0-10, 0-25, 0-50, 0-100, 0-250, 0-500, 0-750, and 0-1000 psig
OPERATING TEMPERATURE	up to 380° F (193° C)
HEATING CAPACITY RANGES (IN WATTS)	40, 50, 100, 150, 200, and 250
C _v COEFFICIENTS	0.06, 0.025, 0.2
CERTIFICATIONS	CSA certification # LR-82566-5 ATEX Directive 2014/34/EU Certification # TRL03ATEX11001X

Features & Benefits

- Optional HASTELLOY® C-276 & MONEL®
- Electropolished body with better than 25 Ra finish in diaphragm cavity for an optimal sealing surface
- Bubble-tight shutoff
- Modular pressure control and heat exchanger assemblies for easy maintenance
- Unique spiral wrapped heat exchange element provides up to 100 square inches of heat transfer area.
- Available in 120VAC or 230VAC
- Optional TCO for T3 operation
- INCONEL® diaphragm standard
- Control box complies with NEMA 4 Class 1 Div. 1 and IP66

HPR-2XW Series

To Order, contact your local Distributor Link below:
www.goreg.com/distributor/index.htm

Verify that your chosen part number is valid using the GO Wizards at
www.goreg.com/products/matrix/index.htm

How to Order

Standard items in bold

H2 - 1 Z 2 3 Q 3 E 6 1 1 7

BODY MATERIAL

- 1 316L stainless steel,
stainless steel diaphragm

- C 316L stainless steel, INCONEL® diaphragm
4 MONEL®, INCONEL® diaphragm
6 HASTELLOY® C, INCONEL® diaphragm

PORT CONFIGURATION

- Z One inlet port, one outlet port
For more configurations, see pages 38-45

TEMPERATURE RANGE / HEATING TYPE

- 1 55°-85° F (13-29° C)
2 75°-175° F (24-80° C)
3 130°-300° F (54-149° C)
4 260°-380° F (126-194° C)
6 No electronics

HEATER WATTAGE

- 1 40W
2 50W
3 100W
4 150W
8 200W
9 250W
6 No electronics

SEAT MATERIAL

- A Tefzel®
B Ceramic Filled PTFE
H PCTFE
Q PEEK™

FLOW COEFFICIENT (Cv)

- 3 0.06
5 0.2
C 0.025

OPTIONS (NOT REQUIRED)

- B EB5 cleaning
D Helium leak test

- E Pressure test certificate
F Certificate of Conformity
G CMTR

OPTIONS

- 1 TCO thermistor
5 6000 psig inlet w/TCO thermistor (1-pc assy.)
7 6000 psig inlet w/standard thermistor (1-pc assy.)
0 Other options

CAP ASSEMBLY

- 1 Tamper-proof, standard, stainless steel
4 Tamper-proof, panel, mount, stainless steel
7 Tamper-proof, captured vent, stainless steel
J Tamper-proof, captured vent, panel mount, stainless steel
L BP-6 topworks

HEATER BLOCK PORTING

- 1 Standard block
2 Extra outlet block
For more blocks, see pages 36-37

HEATER BLOCK TYPE

- 6 120 VAC, HPR-2XW
7 230 VAC, HPR-2XW

OUTLET RANGE

- C 0-10 psig
D 0-25 psig
E 0-50 psig
G 0-100 psig
I 0-250 psig
J 0-500 psig
W 0-750 psig
K 0-1000 psig (BP-6 topworks)

NOTE: 1. Contact the factory for any additional requirements.

2. Units that will be used for flammable liquid or gas with fire point at 200°C or below require the TCO Thermistor. It is also recommended to use the 1-PC body option. In addition, Tefzel and PCTFE seats in these units are recommended to use the captured vent cap option which provides for venting to a safe location.

Maximum Temperature & Operating Inlet Pressures

HPR-2XW Electric 2-piece Assembly

(Heater block and regulator body separate)

SEAT MATERIAL	MAXIMUM TEMPERATURE	MAXIMUM OPERATING INLET PRESSURE
Tefzel®	Up to 175° F (80° C)	@ 3600 psig (24.82 MPa)
	176° F to 300° F	@ 1000 psig (6.90 MPa)
Ceramic Filled	(80° C to 148° C)	
PTFE & PCTFE	301° F to 380° F (148° C to 193° C)	@ 400 psig (2.76 MPa)
PEEK™	Up to 380° F (193° C)	@ 3600 psig (24.82 MPa)

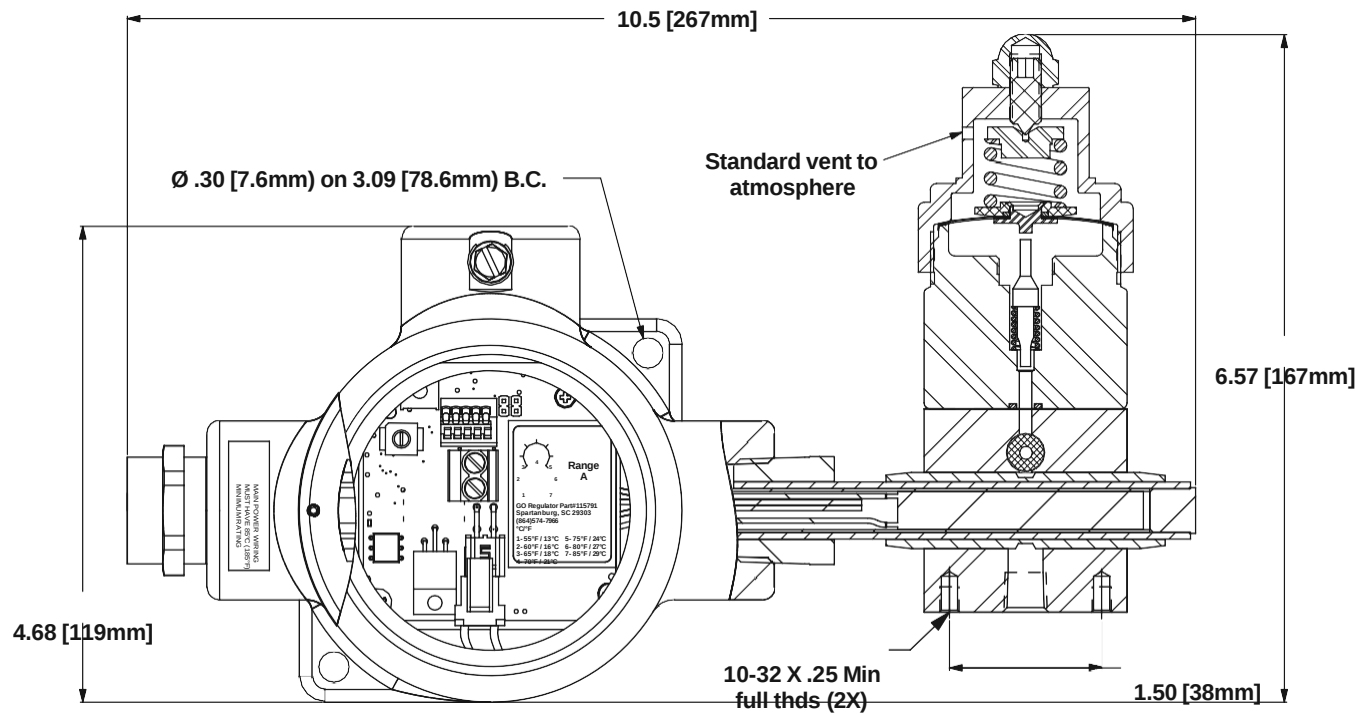
HPR-2XW Electric 1-piece Assembly

(Integral heater block and regulator)

SEAT MATERIAL	MAXIMUM TEMPERATURE	MAXIMUM OPERATING INLET PRESSURE
Tefzel®	Up to 175° F (80° C)	@ 3600 psig (24.82 MPa)
	176° F to 300° F	@ 1000 psig (6.90 MPa)
Ceramic Filled	(80° C to 148° C)	
PTFE & PCTFE	301° F to 380° F (148° C to 193° C)	@ 400 psig (2.76 MPa)
PCTFE	Up to 175° F (80° C)	@ 6000 psig (41.37 MPa)
	176° F to 300° F (80° C to 148° C)	@ 1000 psig (6.90 MPa)
	301° F to 380° F (148° C to 193° C)	@ 400 psig (2.76 MPa)
	Up to 380° F (193° C)	@ 6000 psig (41.37 MPa)

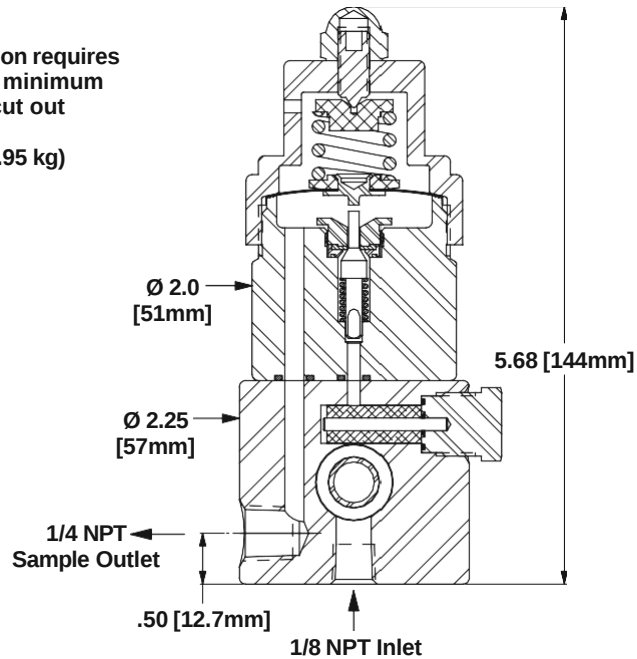
HPR-2XW Series

Maximum Temperature & Operating Inlet Pressures

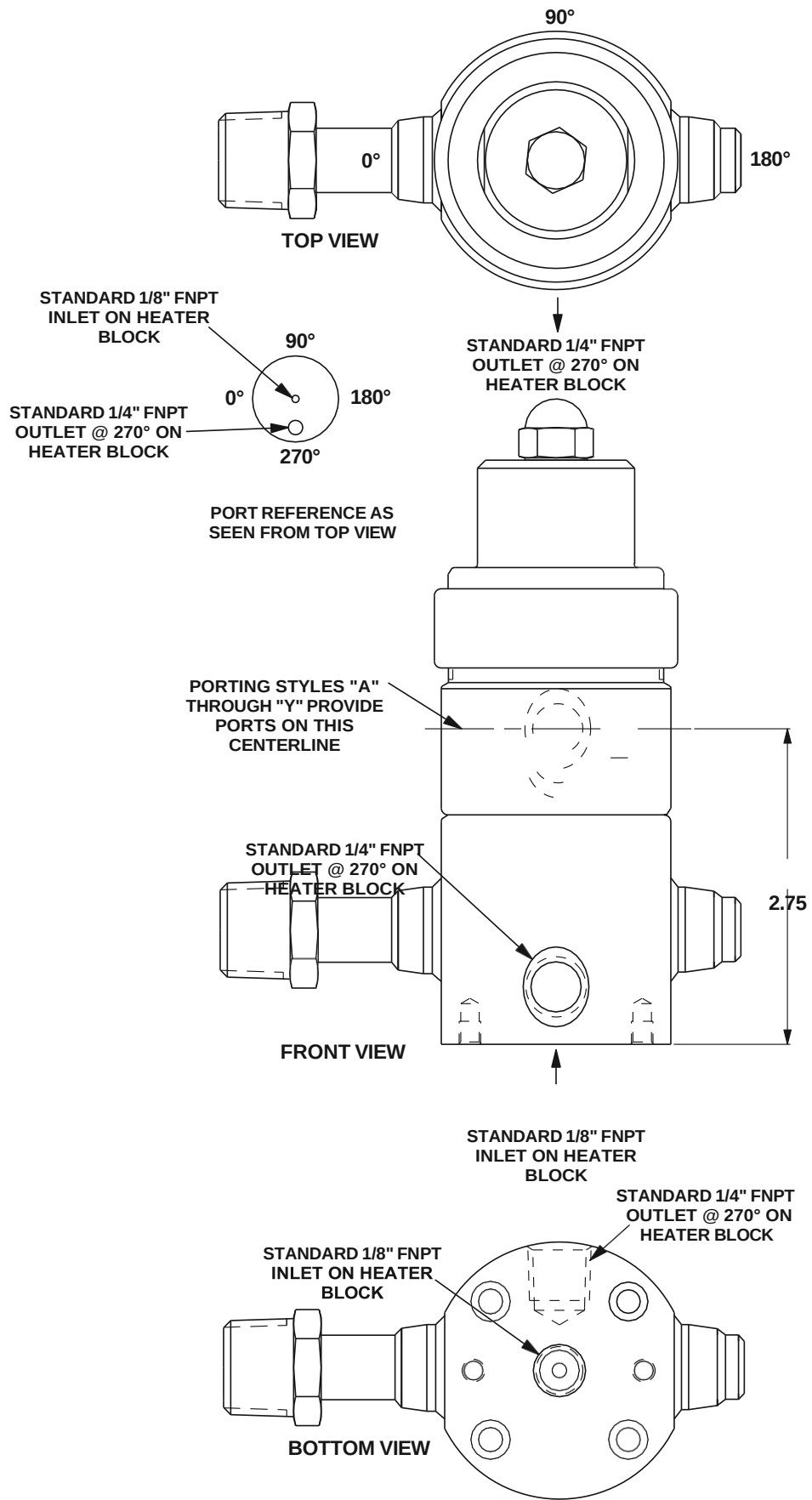


Panel mount option requires
1.390" (35.3mm) minimum
diameter panel cut out

Weight 8.7 lbs (3.95 kg)

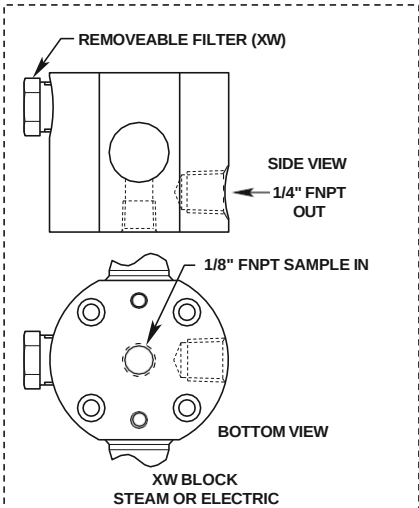
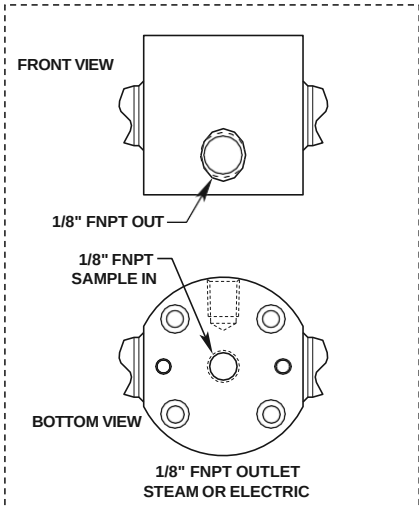
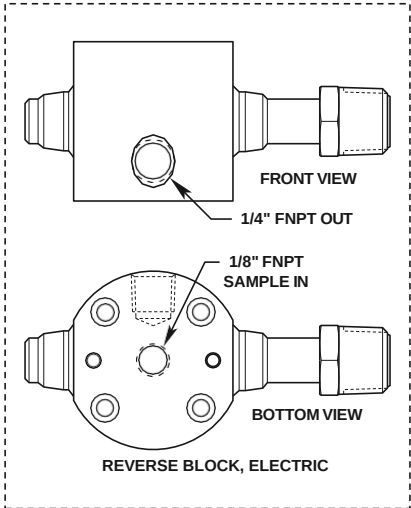
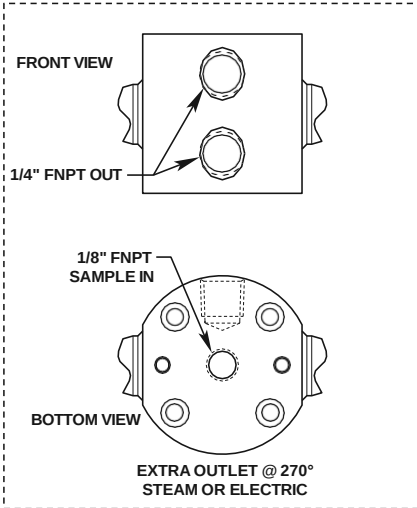
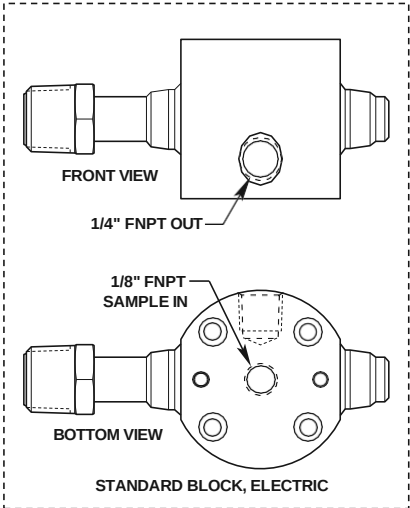
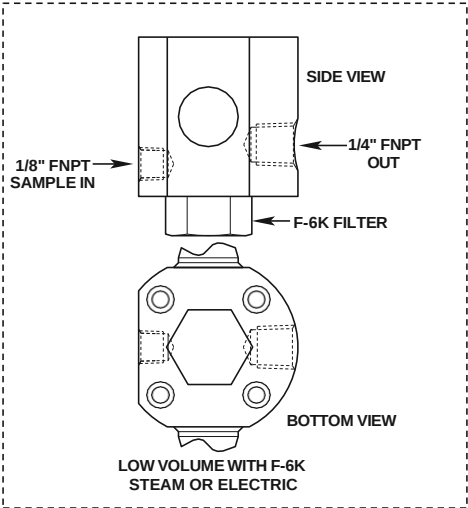
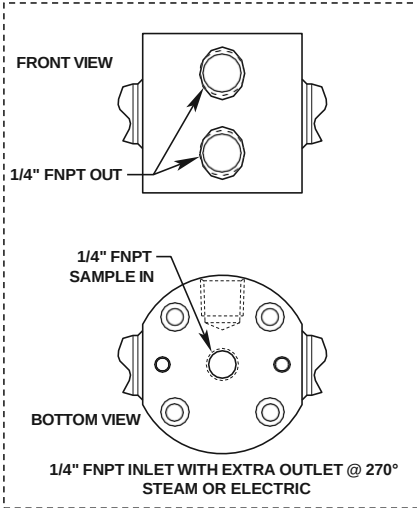
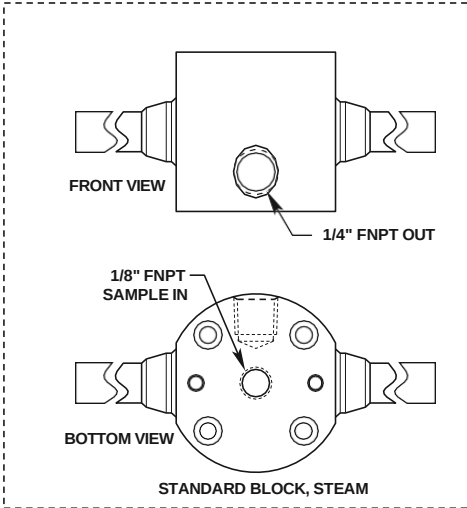


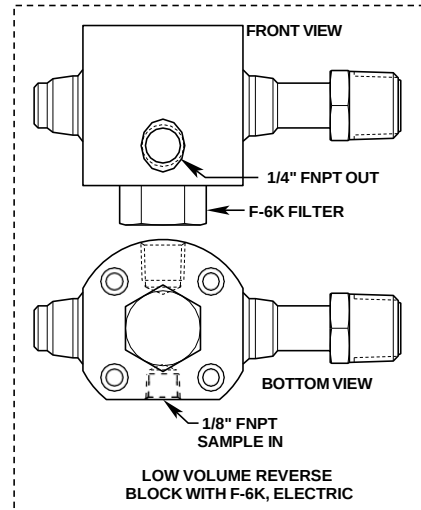
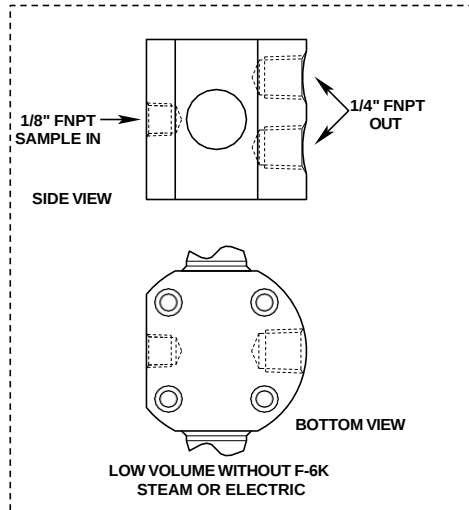
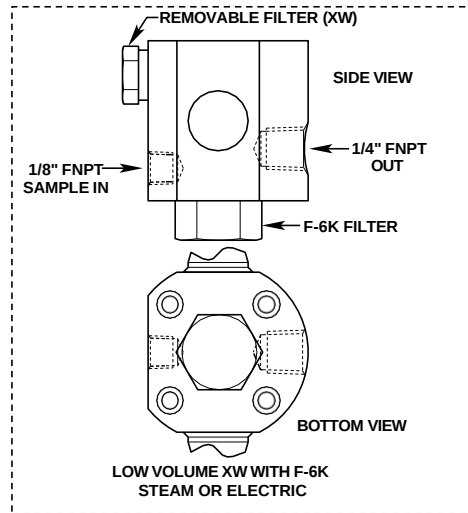
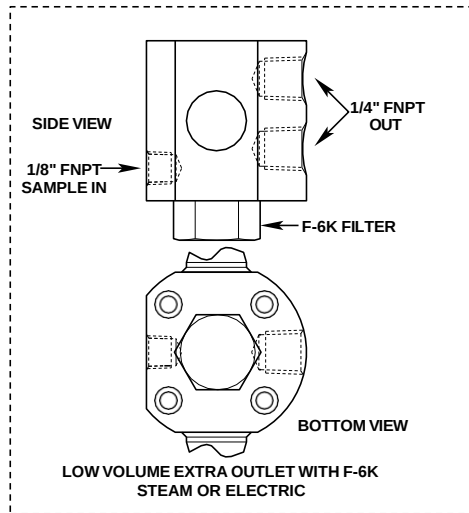
HPR-2 Electric Port References



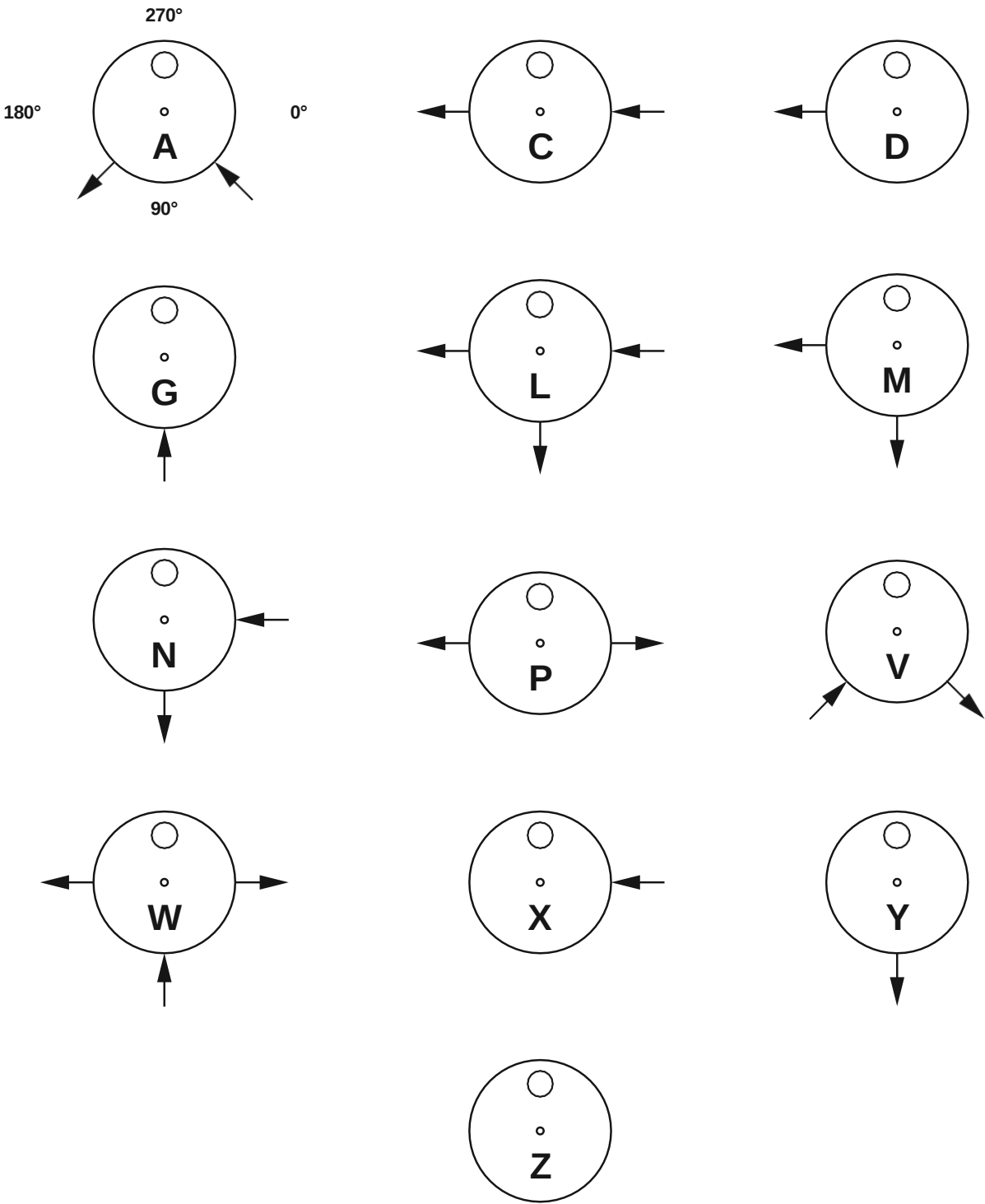
Heater Block Configurations

for HPR-2 Steam & Electric and HPR-2XW Steam & Electric Series



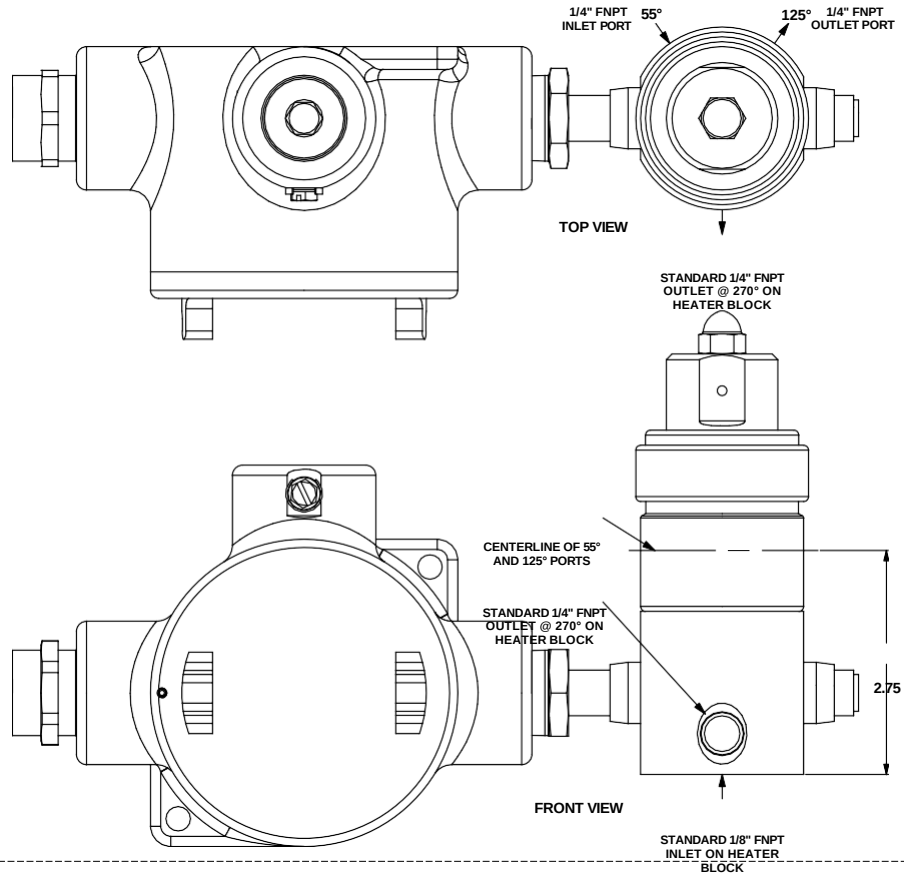


Porting Configurations (Pressure Regulator Body)
for HPR-2 Steam & Electric, HPR-2XW Steam & Electric Series and
HBP Steam & Electric.

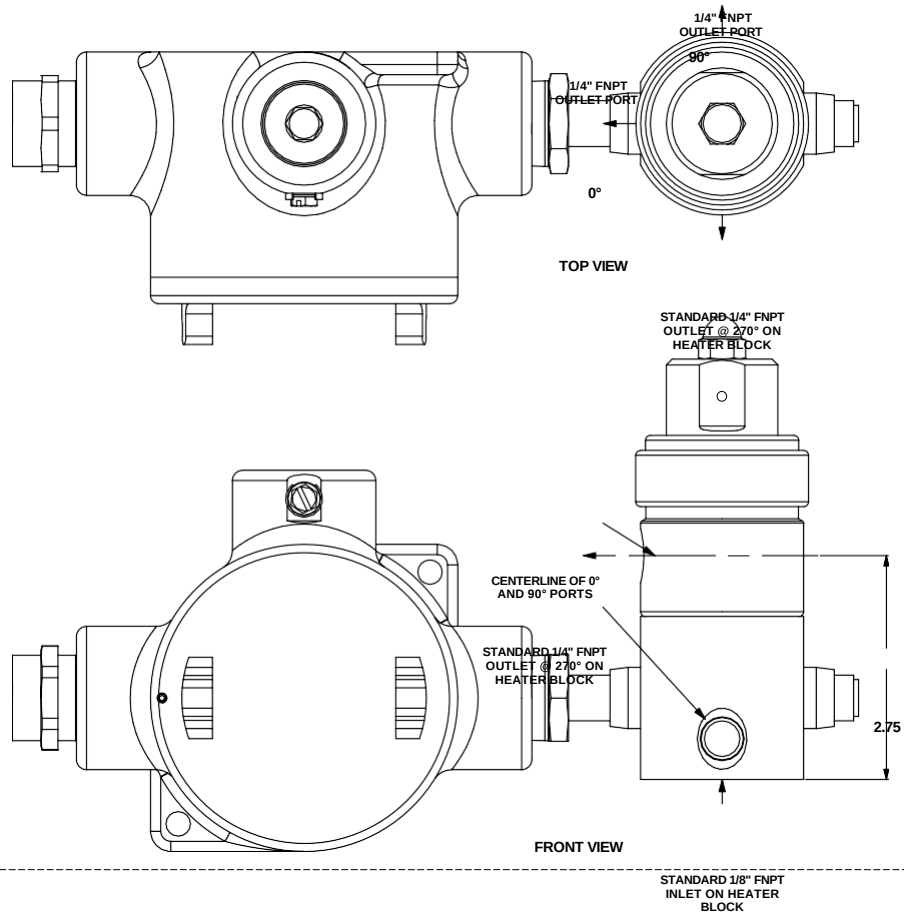


Location of ports from top view. Arrow pointing toward body is inlet. Arrow pointing away from body is outlet.

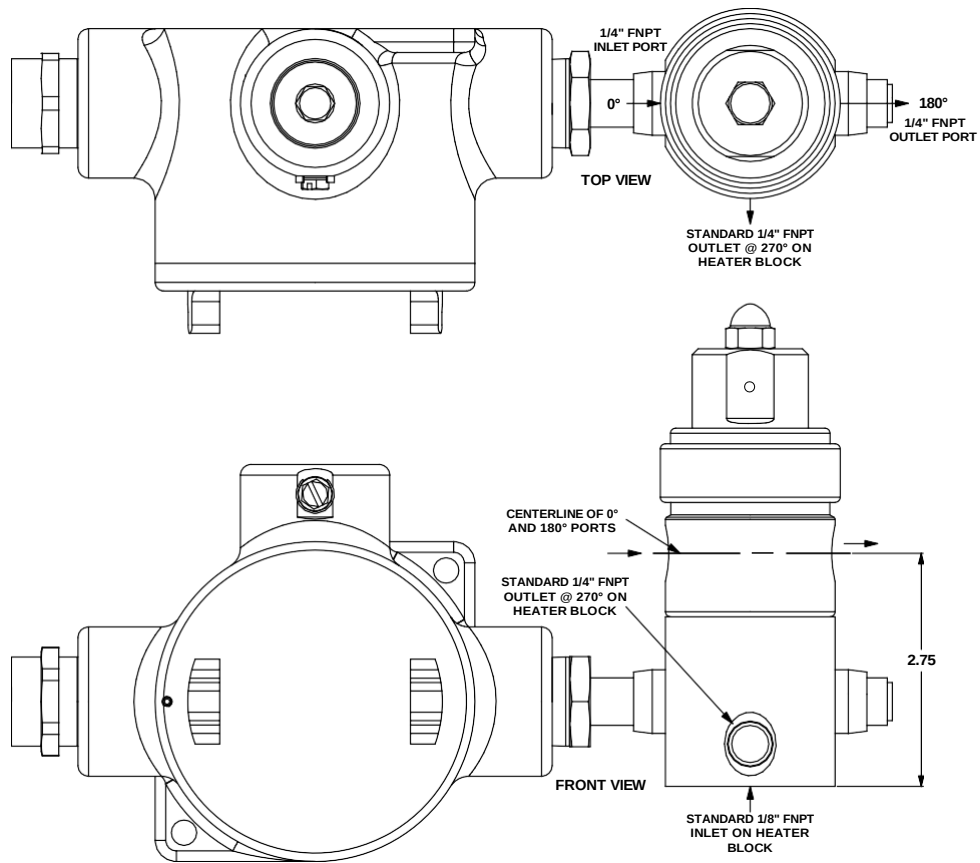
HPR-2 A Style Porting Configuration



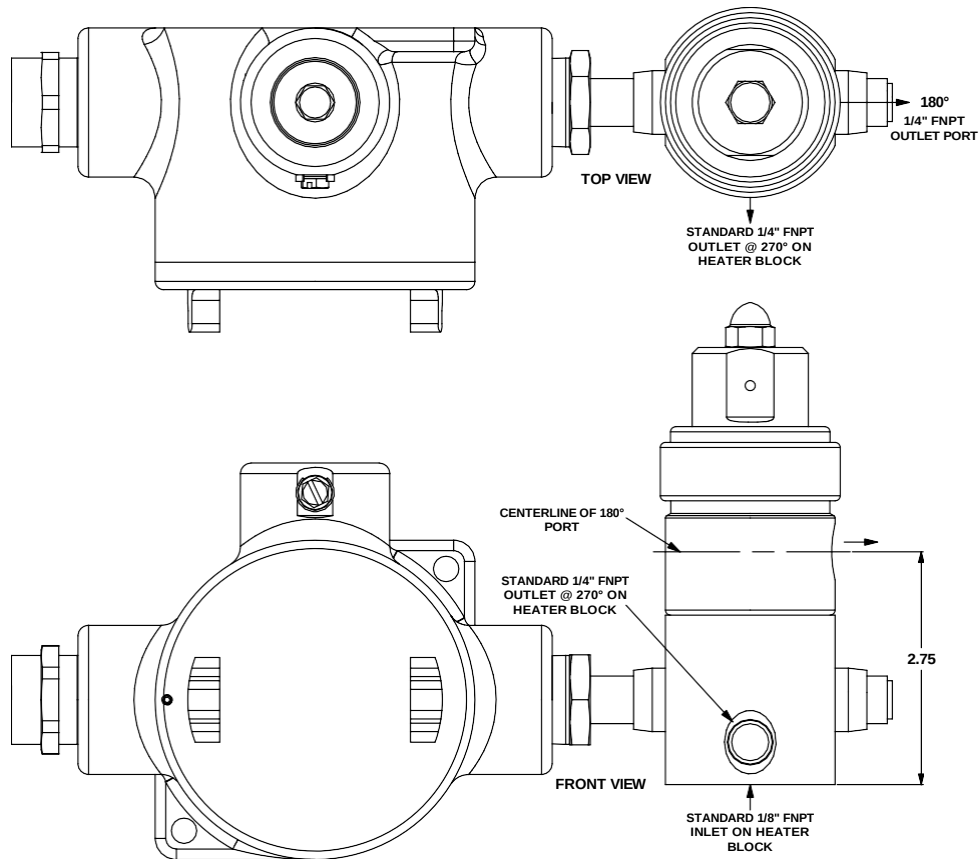
HPR-2 B Style Porting Configuration



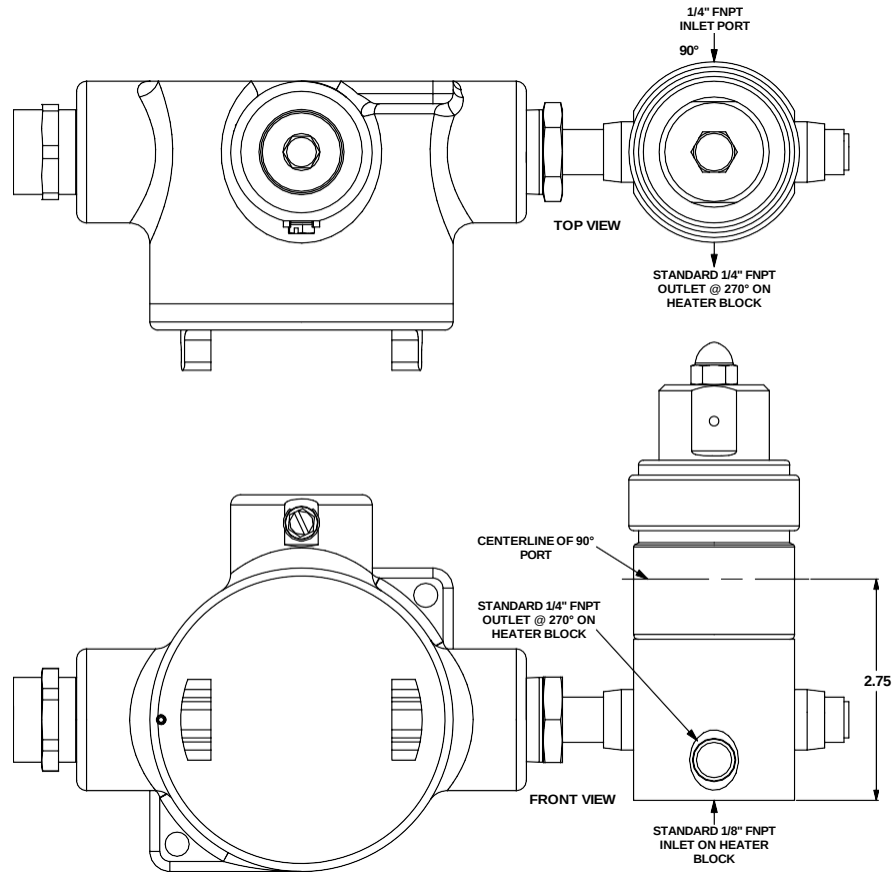
HPR-2 C Style Porting Configuration



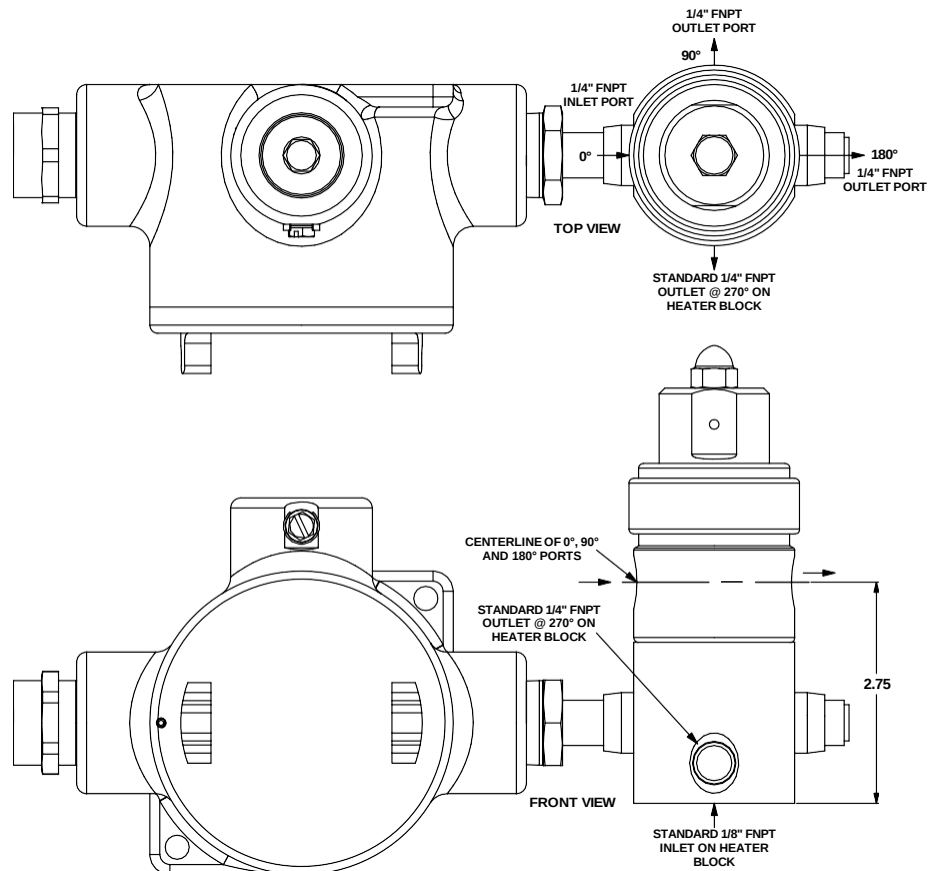
HPR-2 D Style Porting Configuration



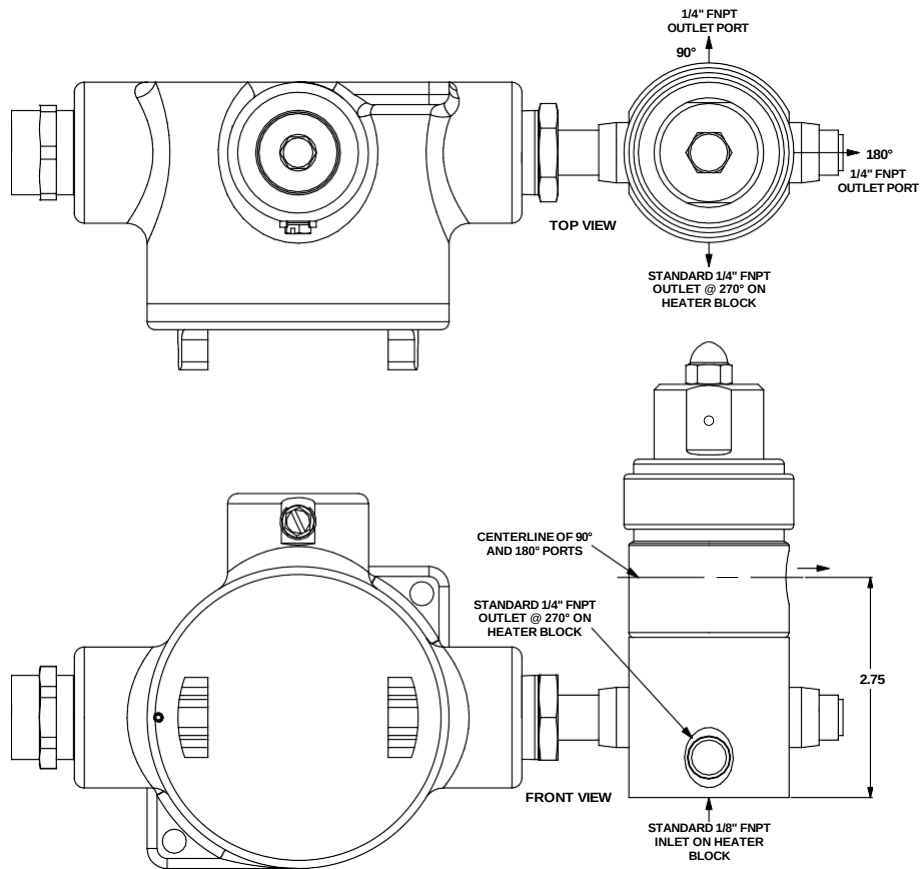
HPR-2 G Style Porting Configuration



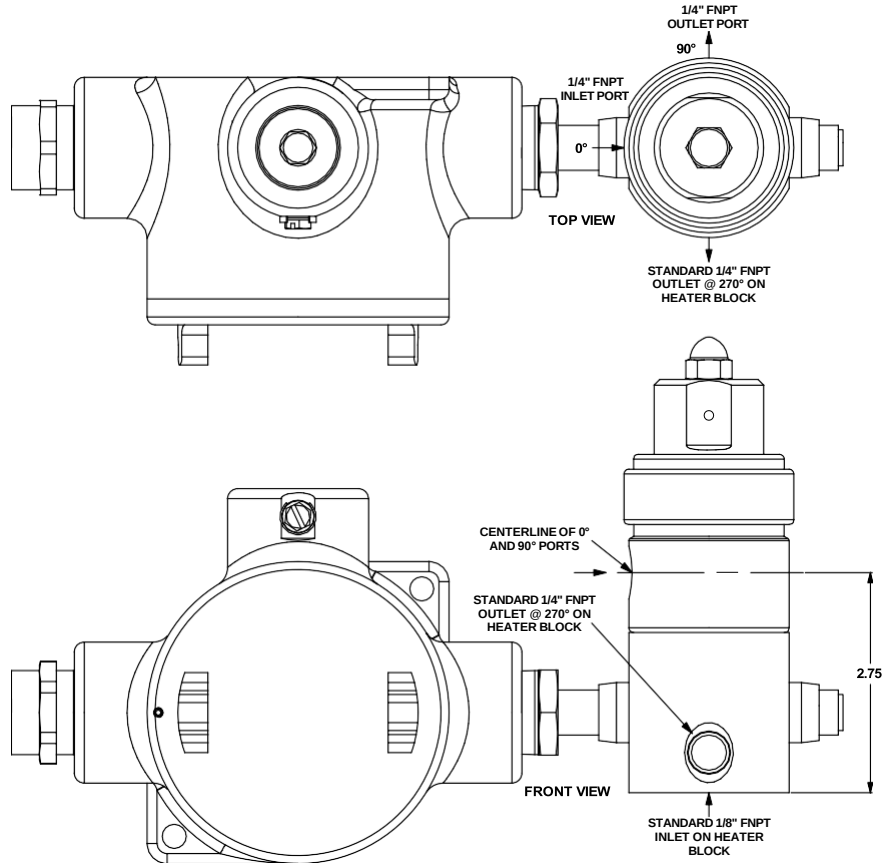
HPR-2 L Style Porting Configuration



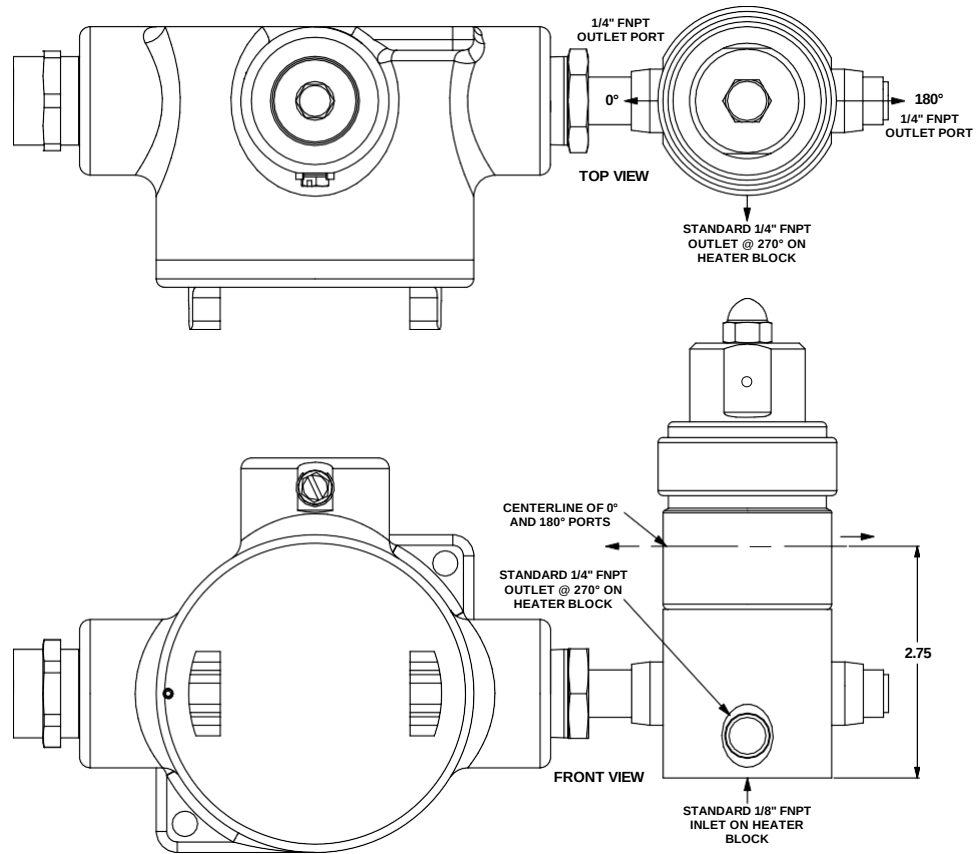
HPR-2 M Style Porting Configuration



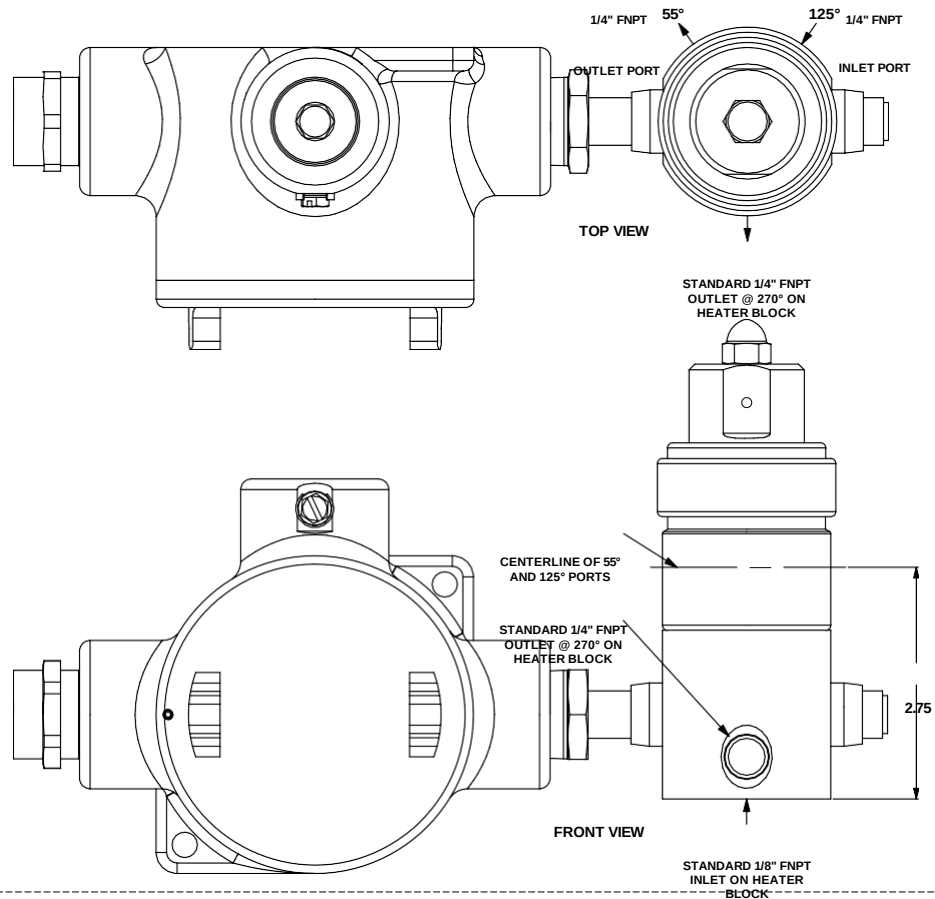
HPR-2 N Style Porting Configuration



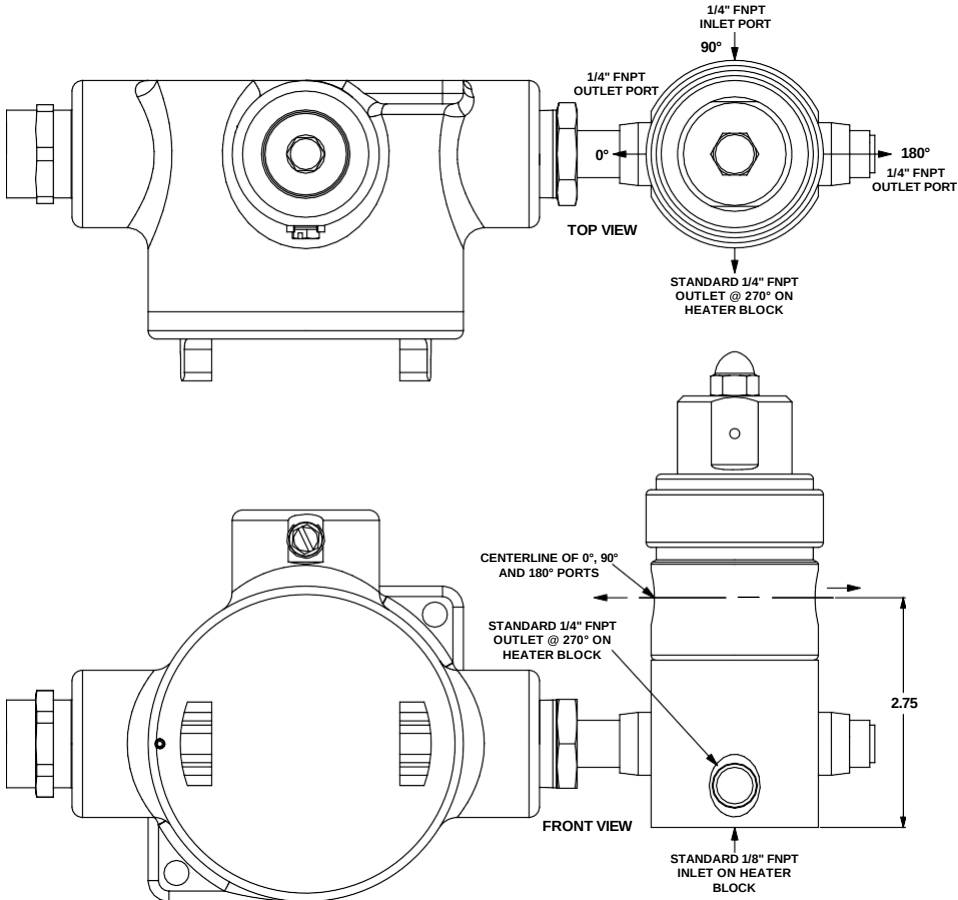
HPR-2 P Style Porting Configuration



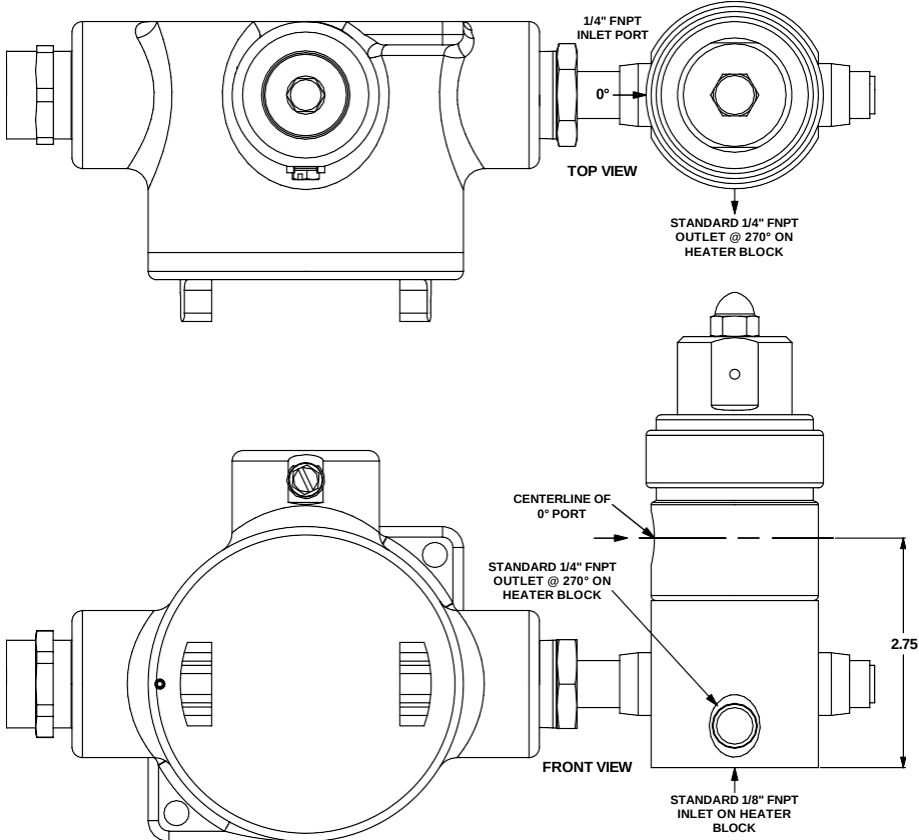
HPR-2 V Style Porting Configuration



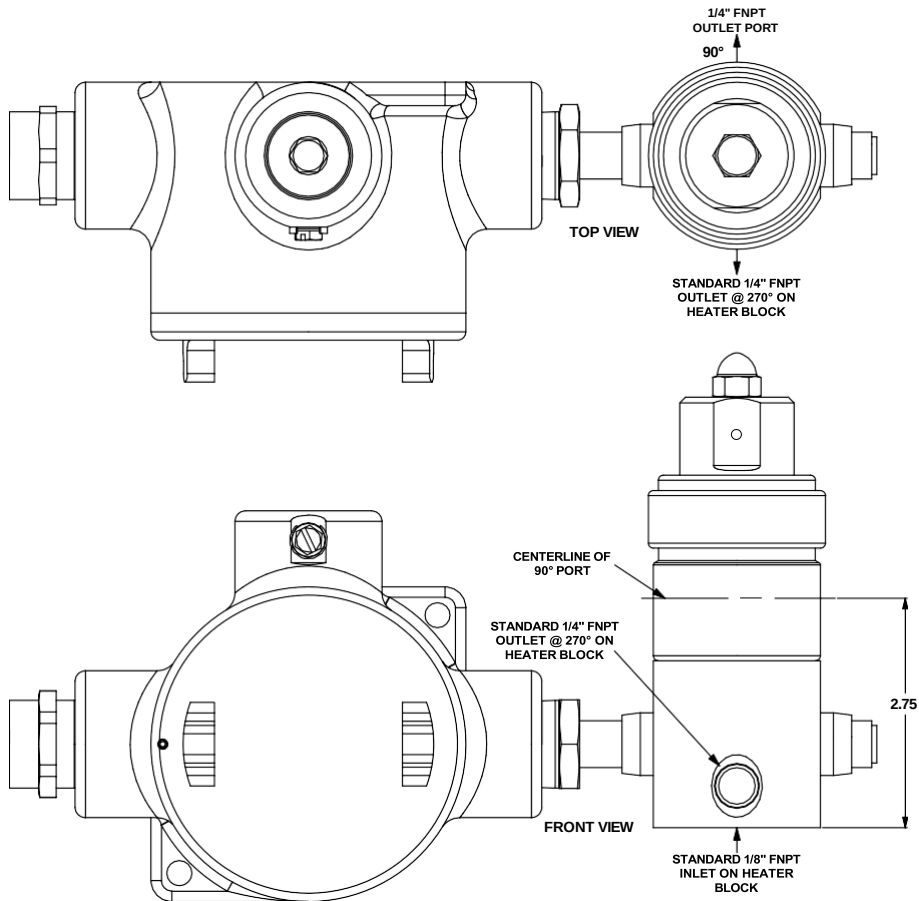
HPR-2 W Style Porting Configuration



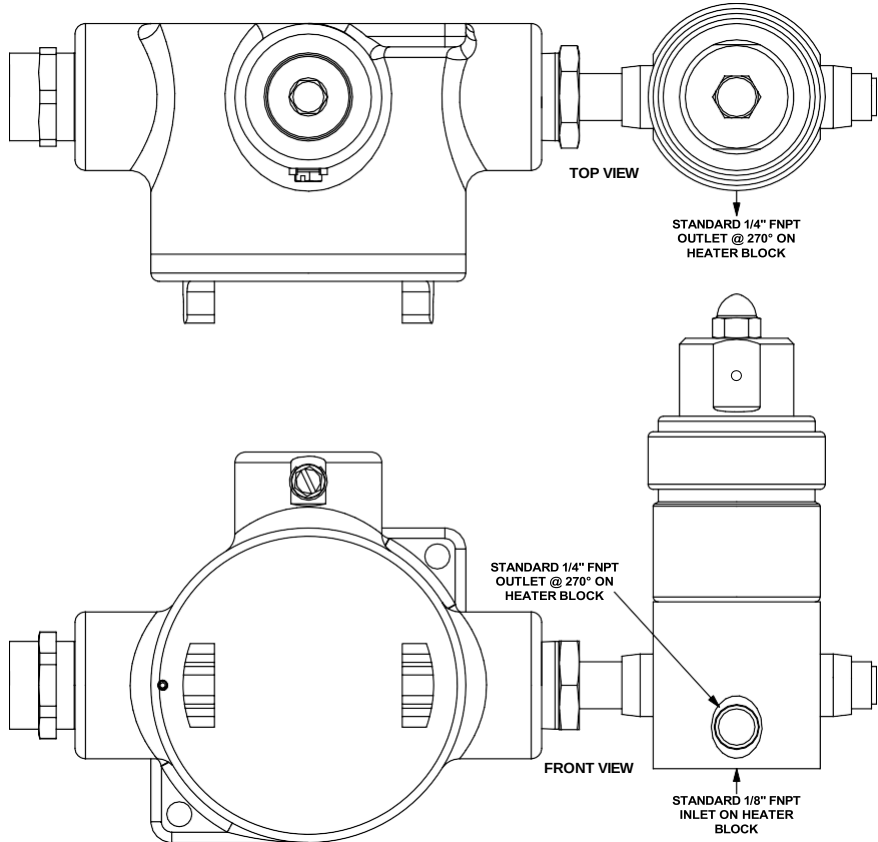
HPR-2 X Style Porting Configuration



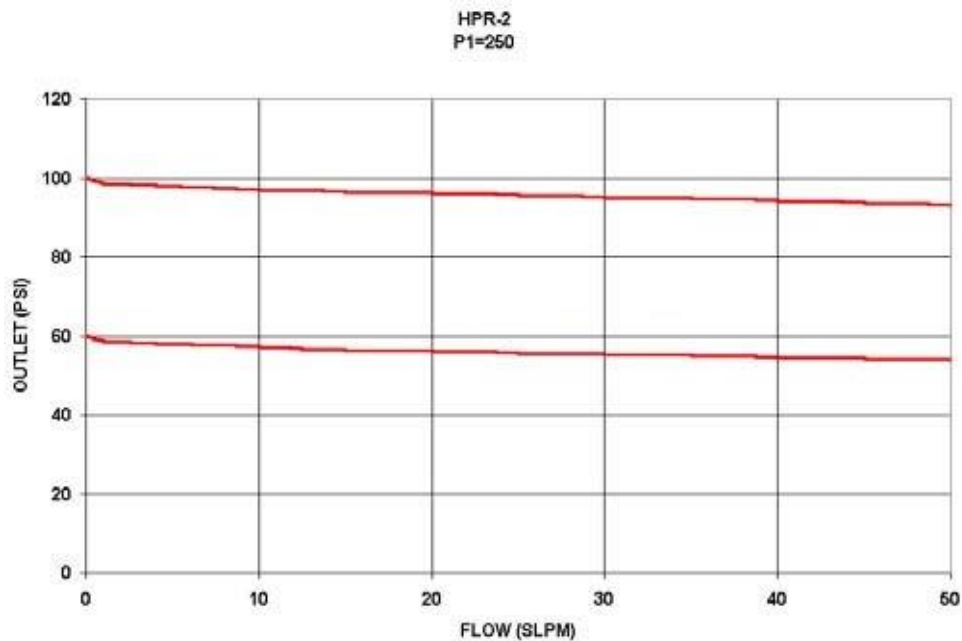
HPR-2 Y Style Porting Configuration



HPR-2 Z Style Porting Configuration



HPR-2 Electrically Heated Vaporizing Regulator Flow Curve



GO Regulator

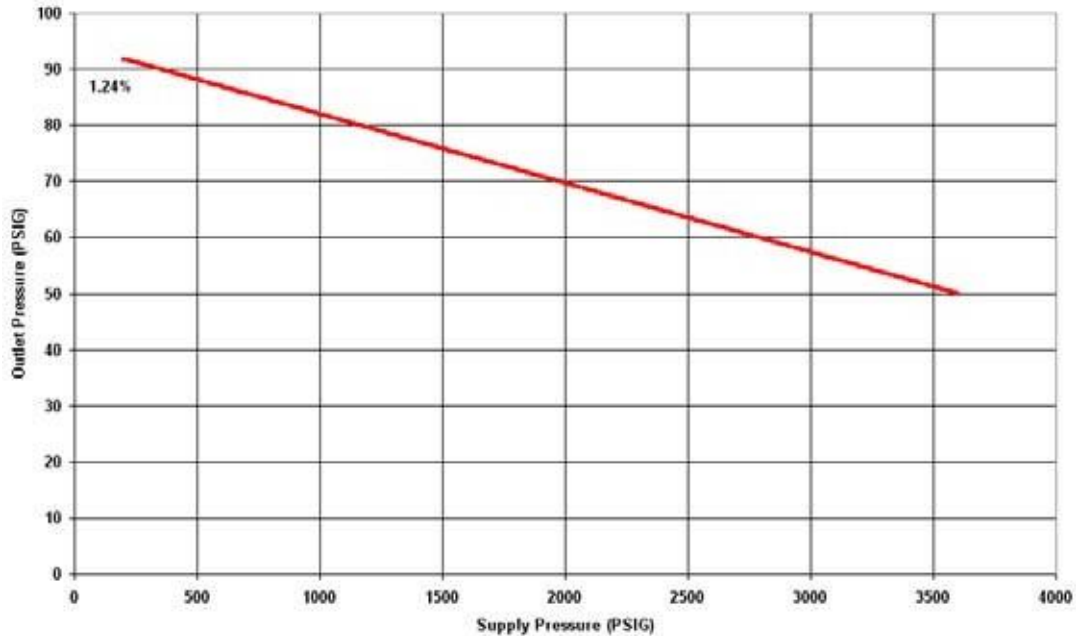
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HPR-2 Electrically Heated Vaporizing Regulator Supply Pressure Effect

SUPPLY PRESSURE EFFECT



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