TESCOM™ Pressure Reducing Regulators

Specifications

For other materials or modifications, please consult Emerson.

OPERATING PARAMETERS

Pressure rating per criteria of ANSI/ASME B31.3

Nominal Inlet Service Pressure
5076 psi / 35.0 MPa / 350 Bar

Maximum Inlet Pressure
6345 psi / 43.8 MPa / 438 Bar

Minimum Inlet Pressure
290 psi / 2.0 MPa / 20.0 Bar
Operating at pressures below this minimum pressure could limit the maximum flow rate

Design Proof Pressure
150% of nominal inlet service pressure

Leakage
Bubble-tight

Operating Temperature
-40 °F TO +185 °F / -40 °C TO +85 °C

Flow Capacity
C_V = 0.17

Decaying Inlet Characteristic
0.05 psi / 3.4 mbar per 100 psi / 6.9 bar change in inlet pressure

Filter
10 µm
The 10 µm filter is for initial system assembly protection. The product is designed to be used with particulate free hydrogen. Your system should be designed with proper filtration before the regulator to protect against contamination.

MEDIA CONTACT MATERIALS

Body
Aluminum 6061-T6 with Electroless Nickel Plating

Seat
Polyimide (Vespel® SP1)

O-Rings
Nitrile (Buna-N)

Main Valve
316 SST

Valve Spring
316 SST

Piston
316 SST

Sensor
Aluminum 6061-T6

First and Second Stage Spring
17-7 SST

Filter
316 SST

Remaining Parts
300 Series SST, Aluminum 6061-T6 , Polyimide (Vespel® SP1)

OTHER

Cleaning
CGA 4.1 and ASTM G93

Weight
3.5 LBS / 1.6 KG

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HV-3500 EC79 Compliant Series Two Stage Pressure Reducing Regulator is a reliable, low maintenance pressure control solution. It is specially designed for use onboard industrial and commercial hydrogen fuel cell vehicles and allows manufacturers to maximize fuel efficiency and keep their fleet on the road for a longer distance. The HV-3500 also provides consistent pressure and continuous flow in a full range of operating conditions. It is suitable for nominal inlet pressures up to 35.0 MPa and flow rates above 3.2 g H_2/s.

Applications

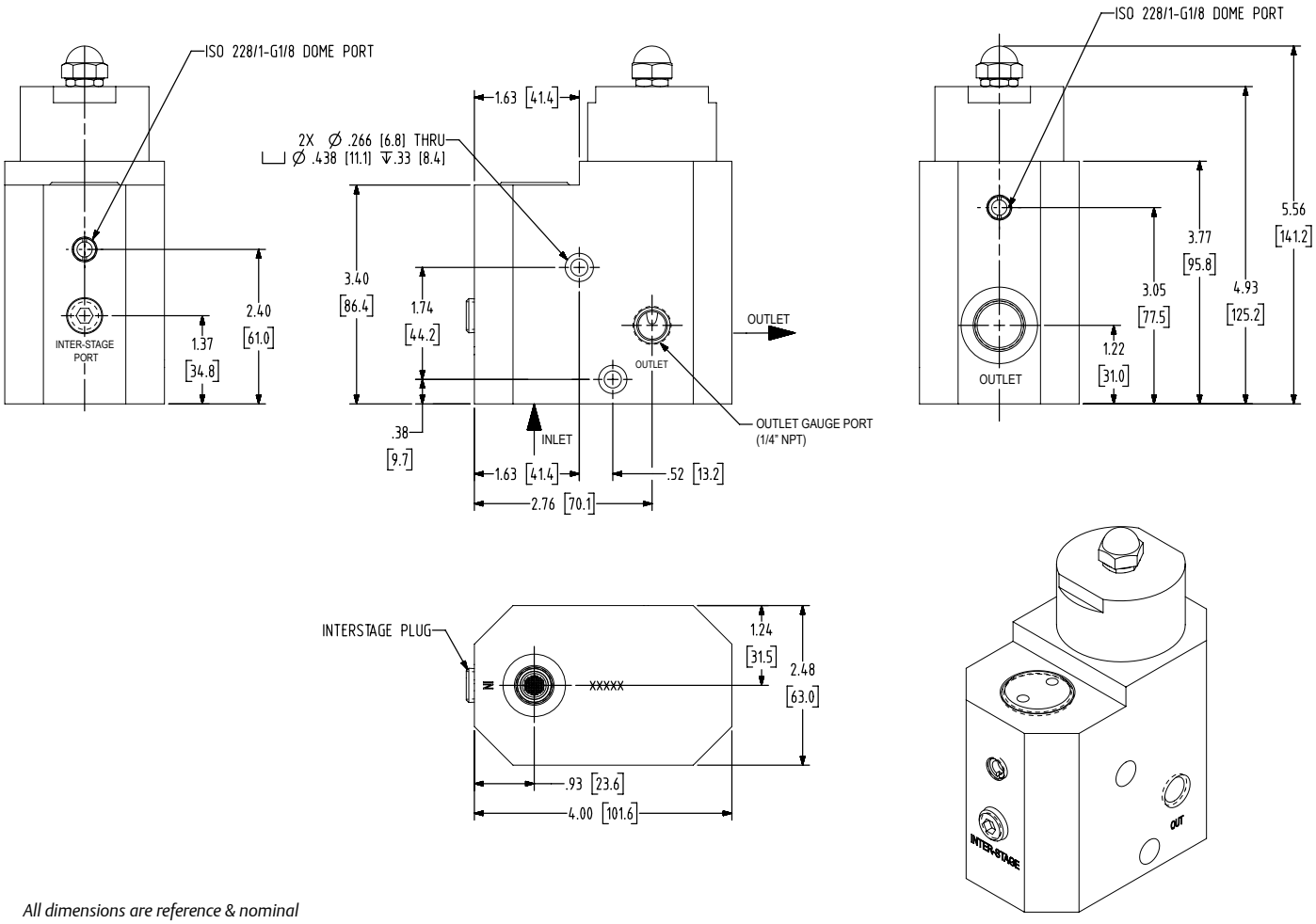
- Onboard industrial/commercial light and heavy-duty hydrogen fuel cell vehicles like buses and trucks

Features and Benefits

- Dual stage and active seal design that provides consistent pressure and continuous hydrogen fuel supply to fuel cells, decreasing downstream over pressurization risk
- Superior shutoff performance
- Corrosion resistant, nickel-plated aluminum body
- One design suitable for the full range of vehicle operating conditions and various system pressure settings
- Compact and lightweight configuration
- Specially designed shape and standard mounting holes for ease of installation
- Standard ports for sensor and pressure relief valve integrations
- Local manufacturing and support

HV-3500 SERIES

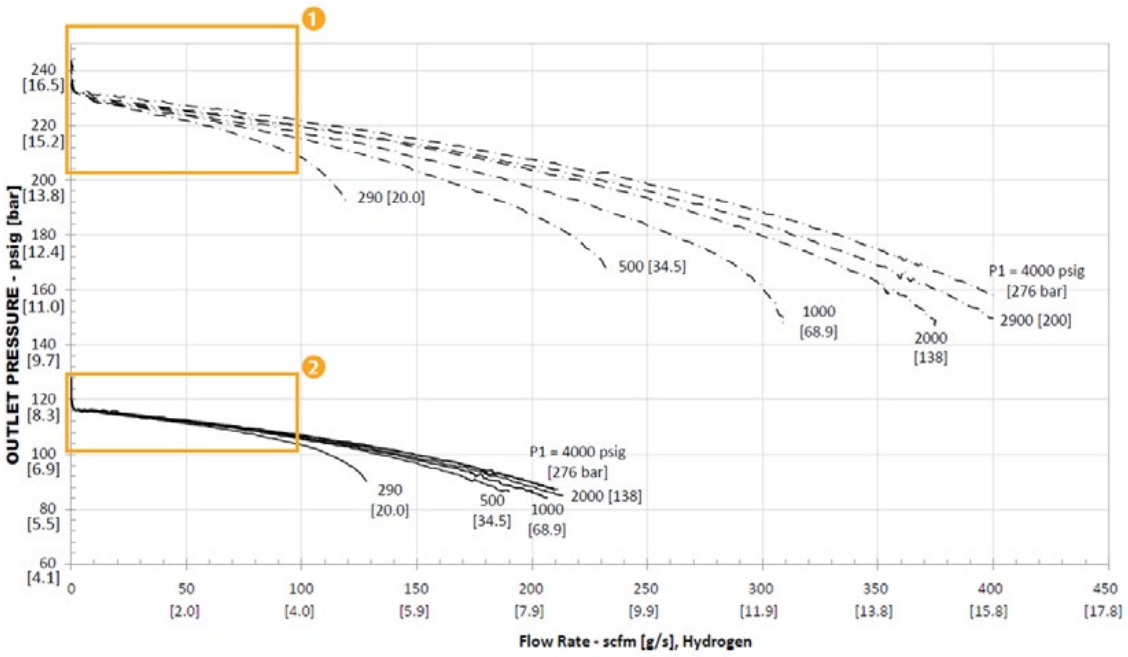
HV-3500 Series Regulator Drawings



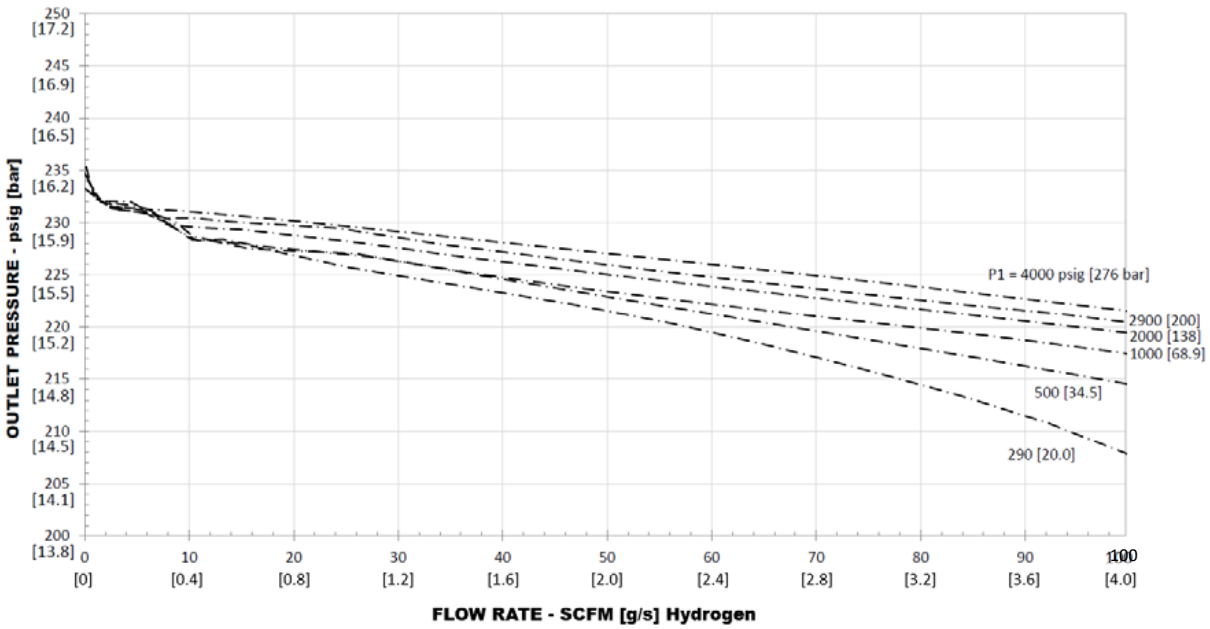
All dimensions are reference & nominal
Metric [millimeter] equivalents are in brackets

HV-3500 Series Regulator Flow Charts

For more information on how to read flow curves, please refer to the Flow Curves and Calculations document (debul2007x012) in the TESCOM catalog or on www.Emerson.com/TESCOM.



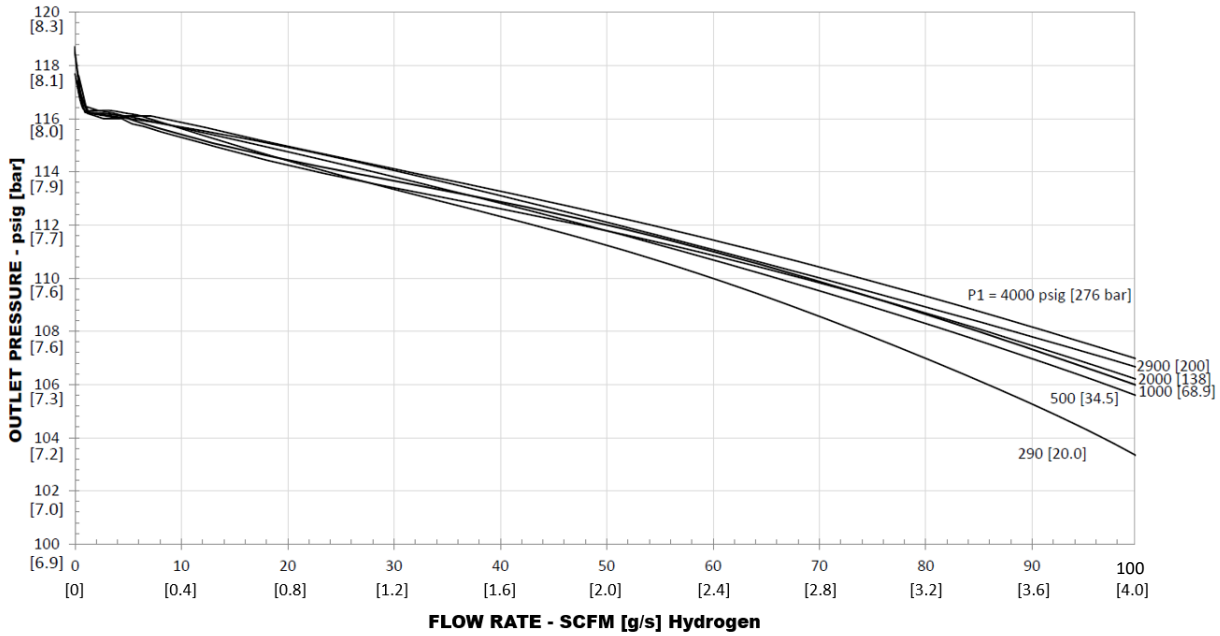
1 **Figure 1:** 232 psi / 1.6 MPa Outlet Pressure Setting



HV-3500 SERIES

HV-3500 Series Regulator Flow Charts (Cont.)

Figure 2: 116 psi / 0.8 MPa Outlet Pressure Setting



HV-3500 Series Regulator Part Number Selector

Learn more about common options.
For modifications, repair kits and accessories, contact factory.

Example for selecting a part number:

HV-35 3 1 - 1 7 01

BASIC SERIES	BODY MATERIAL	OUTLET PRESSURE RANGE	CONNECTION TYPE	CONNECTION SIZES	SET PRESSURE
HV-35	**3 –** Aluminum 6061-T6 with Electroless Nickel-Plating	**1 –** 116 - 174 psi / 0.8 - 1.2 MPa / 8.0 - 12.0 Bar	**1 –** SAE	**7 –** Inlet & Outlet: 3/8" **9 –** Inlet: 3/8" Outlet: 1/2"	**08 –** 8.0 Bar / 0.8 MPa / 116 psi **09 –** 9.0 Bar / 0.9 MPa / 131 psi **10 –** 10.0 Bar / 1.0 MPa / 145 psi **11 –** 11.0 Bar / 1.1 MPa / 160 psi **12 –** 12.0 Bar / 1.2 MPa / 174 psi
		2 – 174 - 232 psi / 1.2 - 1.6 MPa / 12.0 - 16.0 Bar	**1 –** SAE	**7 –** Inlet & Outlet: 3/8" **9 –** Inlet: 3/8" Outlet: 1/2"	**13 –** 13.0 Bar / 1.3 MPa / 189 psi **14 –** 14.0 Bar / 1.4 MPa / 203 psi **15 –** 15.0 Bar / 1.5 MPa / 218 psi **16 –** 16.0 Bar / 1.6 MPa / 232 psi