

Features & Benefits

- Dual-stage pressure reduction minimizes decaying inlet characteristics and enables stable pressure delivery to fuel cell
- Redundant seal design and integrated filter ensure safety and reliability
- Superior shutoff performance and contamination resistance due to positive seal design
- Flow rate up to 5 g/s
- Wide outlet pressure range 10-30 bar / 145-435 psi
- Corrosion-resistant, anodized nickel-plated aluminum body
- Hydrogen-compatible materials

Specifications

For other materials or modifications, please consult Emerson

Operating Parameters

Nominal Inlet Service Pressure

700 bar / 10,153 psi

Maximum Inlet Rated Pressure

875 bar / 12,691 psi

Minimum Inlet Pressure

At least 150% of outlet pressure

** Operating lower inlet pressure conditions could limit the maximum flow rate.*

Design Proof Pressure

150% of nominal inlet service pressure

Pressure Rating

Per Criteria of ANSI/ASME B31.3

Outlet Pressure Range

10-30 bar / 145-435 psi

Leakage

Bubble-tight

Operating Temperature

-40°F to +185°F / -40°C to +85°C

Flow Capacity

$C_v=0.17$; 5 g H₂/sec

Decaying Inlet Characteristic

6.2 mbar per 6.9 bar change in inlet pressure / 0.09 psi per 100 psi 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.*



TESCOM HV-7000 Series Two Stage Pressure Reducing Regulator is a reliable, low-maintenance pressure control solution specially designed for use onboard industrial and commercial heavy-duty hydrogen-powered vehicles with storage tanks rated to 700 bar (10,150 psi). The HV-7000 helps maximize vehicle fuel efficiency by consistently delivering flows up to 5 g/s of hydrogen fuel at the right pressure needed by the fuel cell or hydrogen combustion engine across the full range of operating conditions. The contamination-resistant design of the HV-7000 ensures reliability and long service life, minimizing the vehicle cost of ownership.

Applications:

- Onboard fuel cell electric vehicles (FCEV) or hydrogen internal combustion engine vehicles (HICEV)
- Pressure reduction from fuel tank in hydrogen powered vehicles or stationary back-up power

Media Contact Materials

Body

Aluminum 6061-T6 with Clear Anodic Coating

Seat

Polyimide

O-Rings

Nitrile

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 60661- T6, Polyimide

Other

Cleaning

CGA 4.1 and ASTM G93

Weight

3.5 LBS / 1.6 KG

Approvals

HGV 3.1 and EC79

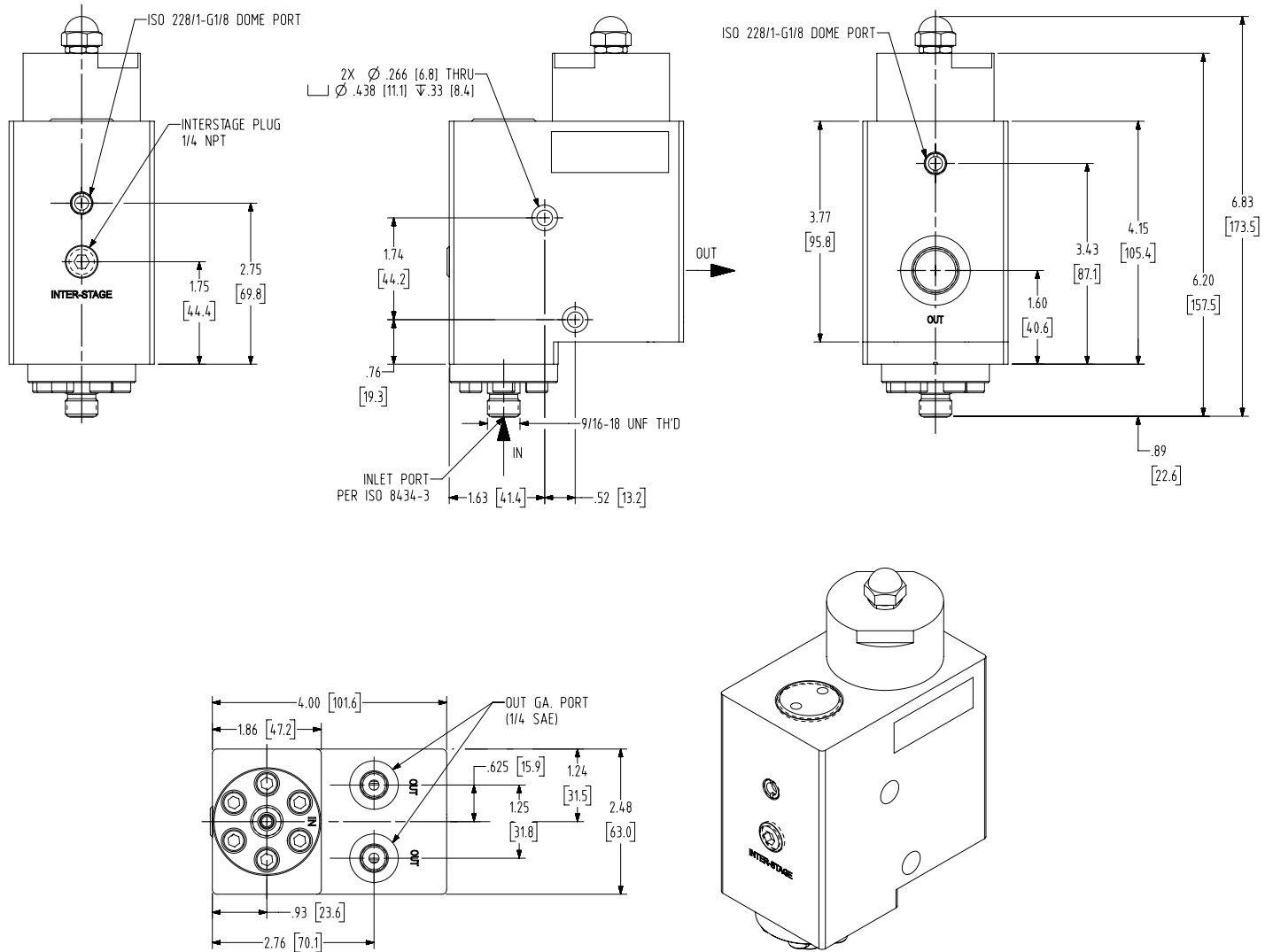
Selection Guide

Example for selecting a part number:

Basic Series	Body Material	Outlet Pressure Range	Port Type	Port Sizes	Set Pressure
HV-70	3 – Aluminum 6061-T6 with Clear Anodic Coating	1 – 10-12 bar / 145-174 psi	C – Inlet: O-Ring Face Seal Outlet: SAE	7 – Inlet: 1/4"; Outlet: 3/8" 9 – Inlet: 1/4"; Outlet: 1/2"	10 – 10 bar / 145 psi
					12 – 12 bar / 174 psi
		2 – 12-20 bar / 174-290 psi	C – Inlet: O-Ring Face Seal Outlet: SAE	7 – Inlet: 1/4"; Outlet: 3/8" 9 – Inlet: 1/4"; Outlet: 1/2"	15 – 15 bar / 218 psi
					16 – 16 bar / 232 psi
					20 – 20 bar / 290 psi
		3 – 20-30 bar / 290-435 psi	C – Inlet: O-Ring Face Seal Outlet: SAE	7 – Inlet: 1/4"; Outlet: 3/8" 9 – Inlet: 1/4"; Outlet: 1/2"	21 – 21 bar / 305 psi
					22 – 22 bar / 319 psi
					23 – 23 bar / 334 psi
					24 – 24 bar / 348 psi
					25 – 25 bar / 363 psi
					26 – 26 bar / 377 psi
					27 – 27 bar / 392 psi
					28 – 28 bar / 406 psi
					29 – 29 bar / 421 psi
					30 – 30 bar / 435 psi

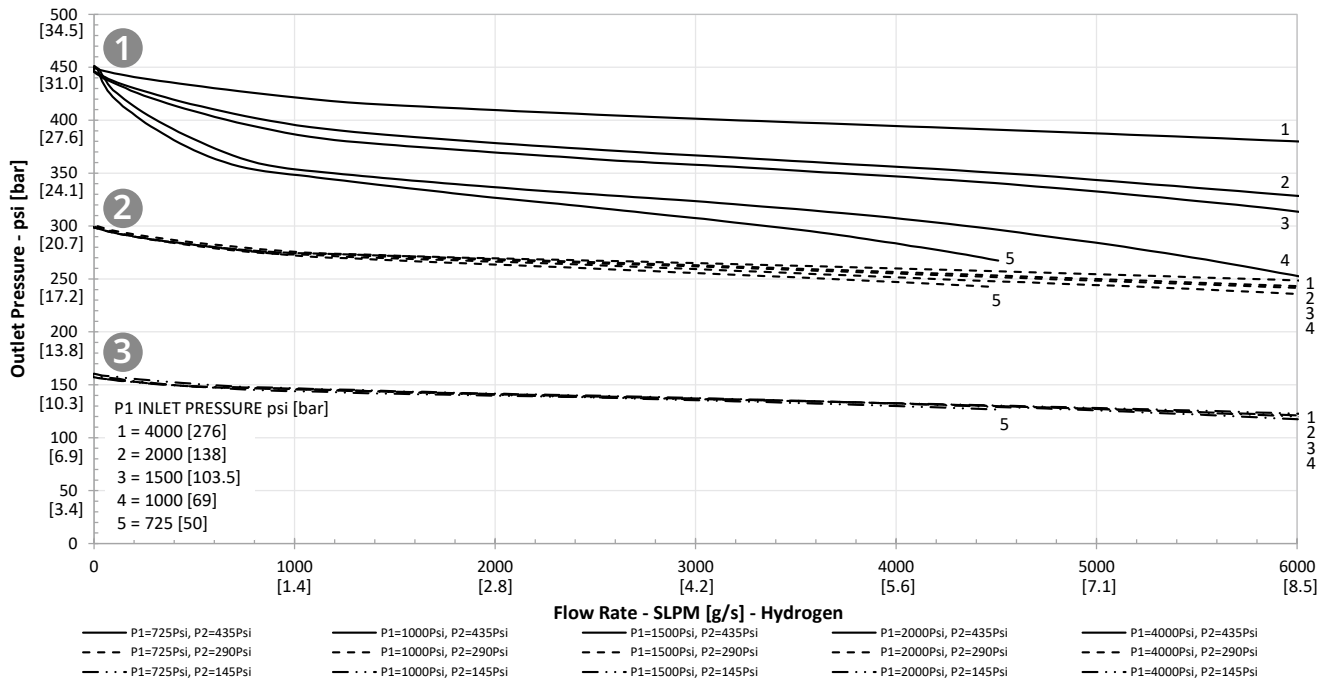
HV-7000 Series Regulator Drawings

Dimensions: mm (inches)

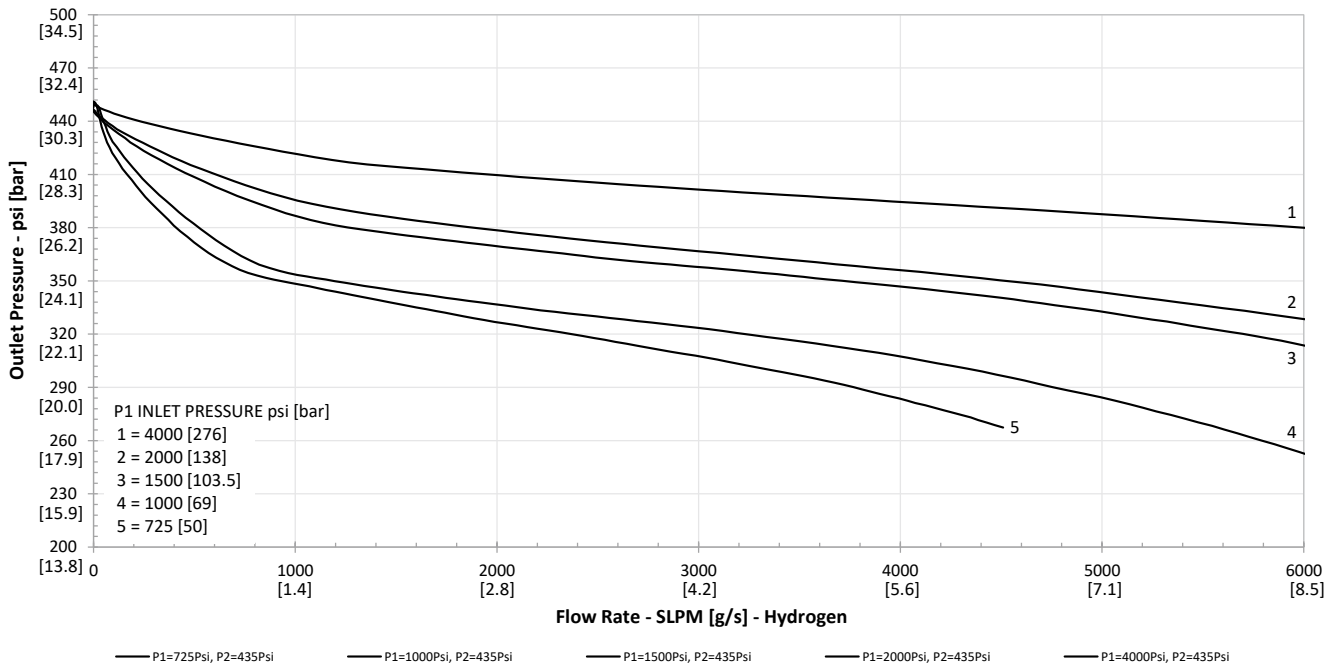


All dimensions are reference & nominal

HV-7000 Series Regulator Flow Charts

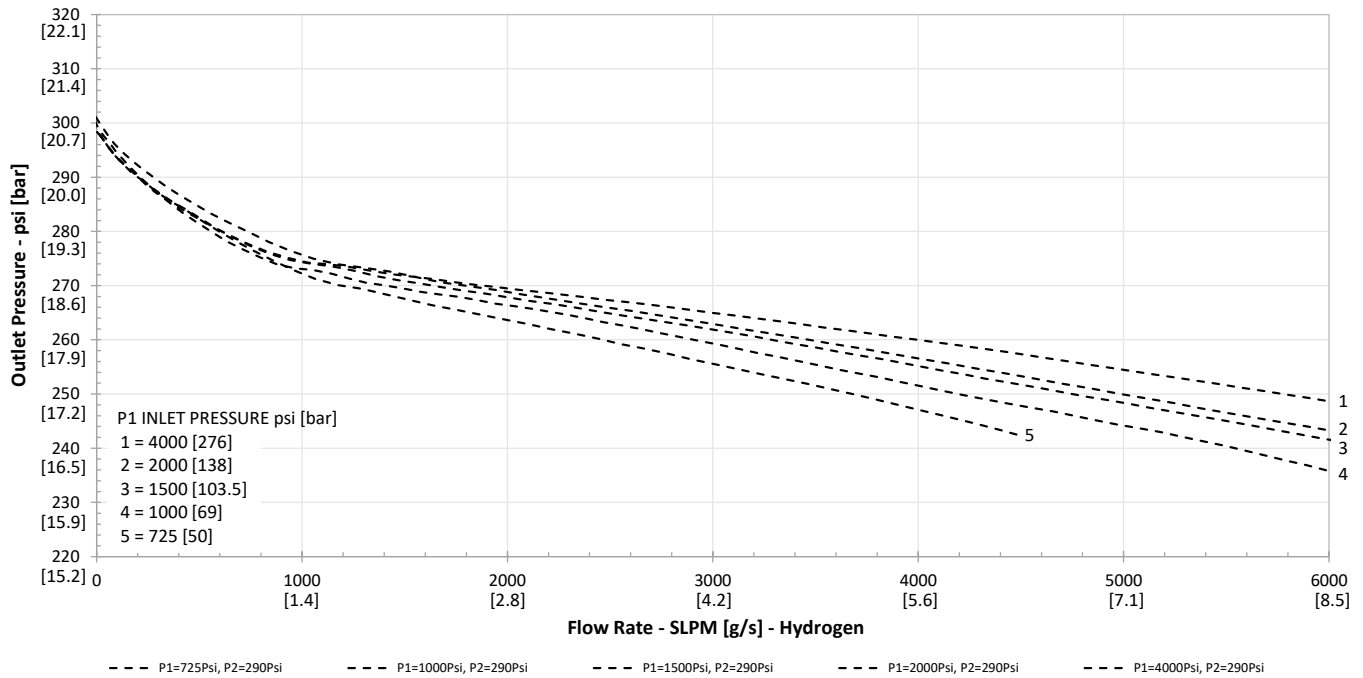


1 Figure 1: 435 psi / 30 bar Outlet Pressure Setting

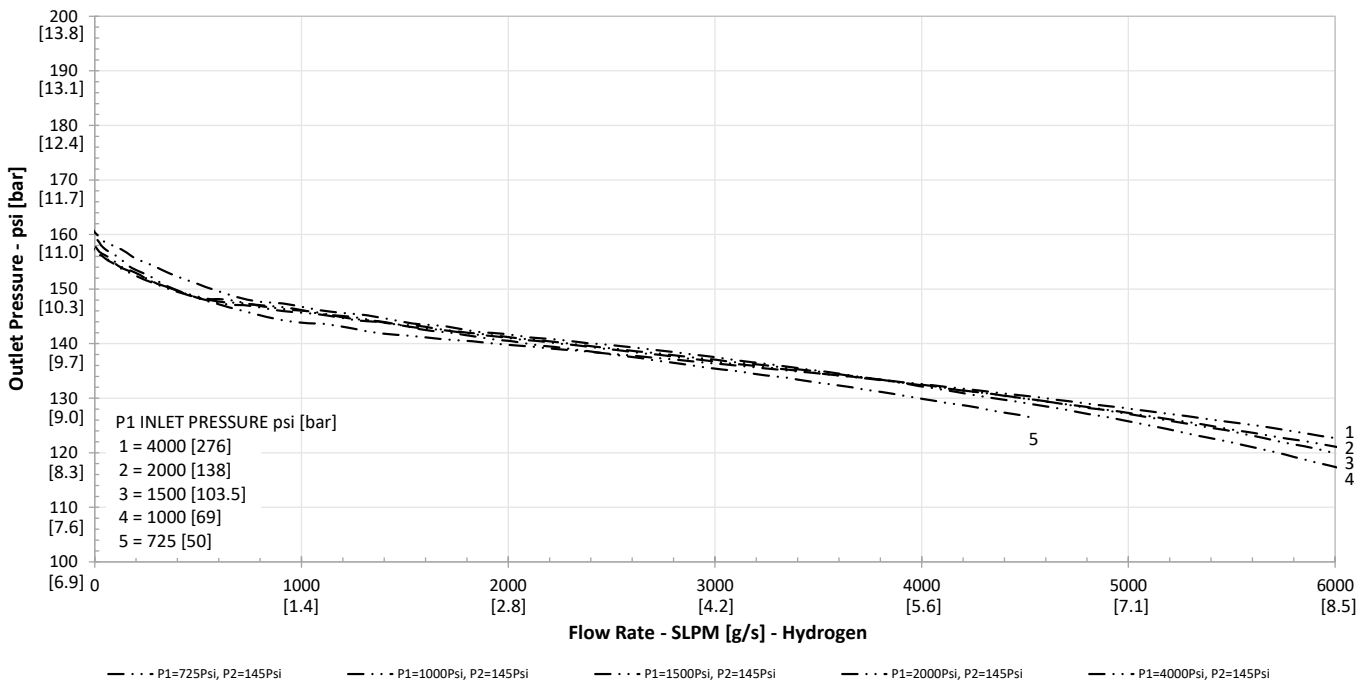


HV-7000 Series Regulator Flow Charts

2 Figure 2: 290 psi / 20 bar Outlet Pressure Setting



3 Figure 3: 145 psi / 10 bar Outlet Pressure Setting



Availability, design and specifications are subject to change without notice.
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