



EMERSON TESCO High Purity Regulators User Guide

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TESCOM™ High Purity Regulator Selection Guide



Four-Step Product Selection Process

The simple four-step process outlined below will help you use this guide to find the product that meets your specific application requirements.

- Semiconductor Application:** Choose from one of the five semiconductor application tables that follow on pages 1-5. Specific applications, e.g., gas trays, gas jungles, and valve manifold boxes are listed at the very top of each table. As an example, a regulator that is located at the process tool and used to deliver a specialty gas is likely a 1/4" Point-of-Use Regulator. Gas Cabinet Regulators are used to deliver compressed or liquefied cylinder gases.
- Pressures & Flow Rates:** Narrow your search by referencing your required source pressure, outlet pressure, and flow rate. Leak rate and body materials are provided in the tables as a further reference point.
- Features:** Check the bullet points under the regulator model name for a short list of key features.
- Poppet Types:** Free poppet regulators are recommended for inert gases and point-of-use process gases. Tied diaphragm regulators offer a mechanically assisted shutoff to prevent leakage across the seat. The tied diaphragm regulators are recommended for high-pressure toxic, corrosive, and flammable gases.

To place an order: Once you have selected a product, you may call the number below for your local distributor or go to www.emerson.com/tescom and click on Sales Office Locator.

Need assistance or further specifications?

- Visit us online at www.emerson.com/tescom. Click on VIEW PRODUCTS to begin your search and download a PDF file of the relevant catalog sheet.
- Refer to Regulator Recommendations for Semiconductor Gases in our catalog or on our website.
- Call the number below for a factory application specialist or the number of a TESCO distributor near you: 800-447-1250 or 877-483-7266.
- Learn more about Emerson's Semiconductor solutions at www.emerson.com/semiconductor

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1/4" Point of use pressure regulators

For process tools, gas trays, gas jungles, valve manifold boxes & tool hook-ups



PRODUCT SERIES & FEATURES	SOURCE PRESSURE	DELIVERY PRESSURE	CERTIFIED INBOARD LEAK RATE*	FLOW RANGE	BODY MATERIAL
64-2600 Single Stage, Ultra-High Purity					

• 10 Ra microinch finish • Internal electropolish • Free poppet design • Hastelloy® trim available • Cv = .15	600 PSIG [41 bar]	30, 60, 100, 250 PSIG [2, 4, 7, 17 bar]	<1 x 10 ⁻⁹	0-100 SLPM	316L SST or 316L SST VAR
64-2800 Single Stage, Ultra-High Purity, Tied Diaphragm					
• Tied diaphragm design • Internal electropolish • 10 Ra microinch finish • Cv = .15	1000 PSIG [70 bar]	30, 60, 100, 150 PSIG [2, 4, 7, 10 bar]	<1 x 10 ⁻⁹	0-100 SLPM	316L SST or 316L SST VAR
64-3600 Single Stage, Ultra-High Purity, Low Droop					
• 10 Ra microinch finishes • Internal electropolish • Free poppet design • Hastelloy® trim available • Cv = .15	600 PSIG [41 bar]	30, 60, 100, 150 PSIG [2, 4, 7, 10 bar]	<1 x 10 ⁻⁹	0-100 SLPM	316L SST or 316L SST VAR
64-5000 Single Stage, Ultra-High Purity, Absolute Pressure					
• Subatmospheric to positive pressures • 10 Ra microinch finish • Internal electropolish • Cv = .24	120 PSIG [8 bar]	28" Hg-15, 30, 60, 100 PSIG [28" Hg-1, 2, 4, 7 bar]	<1 x 10 ⁻⁹	0-5 SLM	316L SST or 316L SST VAR
74-2400 Single Stage, Ultra-High Purity					
• Tied diaphragm design • Internally springless & threadless • Precision Electro-Polish • 10 Ra microinch finish • Cv = .15	600 PSIG [41 bar]	30, 60, 100 PSIG [2, 4, 7 bar]	<1 x 10 ⁻⁹	0-100 SLPM	316L SST VAR
12 Single Stage, Ultra-High Purity, Miniature					

• Tied diaphragm design • 5 Ra or 10 Ra microinch finishes • Internally springless & threadless • Precision Electro-Polish • 12F Series features an integrated outlet filter • Available with inlet & outlet filter • 1-1/2", 1-1/8" "C" or "W" seal, VCR®	150 PSIG [10 bar]	20" Hg-15, 30, 60, 100 PSIG [20" Hg-1, 2, 4, 7 bar]	<1 x 10 ⁻⁹	50 SLP M& 120 SLPM	316L SST VAR
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1/2" Point of use pressure regulators

For process tools, gas trays, gas jungles, valve manifold boxes & tool hook-ups



PRODUCT SERIES & FEATURES	SOURCE PRESSURE	DELIVERY PRESSURE	CERTIFIED INBOARD LEAK RATE*	FLOW RANGE	BODY MATERIAL
44-3200 Single Stage, High Flow					
• 10 Ra microinch finish • Cv = 1.0 or 1.8	500 PSIG [35 bar]	25, 50, 100, 150, 200 PSIG [1.7, 3.5, 7, 10, 14 bar]	<2 x 10 ⁻⁸	0-550, 900 SLPM (0-19, 32 SCFM)	316L SST
64-3200 Single Stage, Ultra-High Purity, High Flow					
• Tied diaphragm design • 10 Ra microinch finish • Hastelloy® trim available • Cv = 1.2	150 PSIG [10 bar]	30, 60, 100, 150 PSIG [2, 4, 7, 10 bar]	<1 x 10 ⁻⁹	0-900 SLPM (0-32 SCFM)	316L SST or 316L SST VAR
64-5400 Single Stage, Ultra-High Purity, High Flow					
• Free poppet design • 10 Ra microinch finish • Cv = 1.0	600 PSIG [41 bar]	30, 60, 100, 150 PSIG [2, 4, 7, 10 bar]	<1 x 10 ⁻⁹	550 SLPM (0-19 SCFM)	316L SST
74-3000 Single Stage, Ultra-High Purity, High Flow					
• Internally threadless • Precision Electro-Polish • 10 Ra microinch finish • Free poppet design • Cv = .5	600, 1000 PSIG [41, 70 bar]	30, 60, 100, 150 PSIG [2, 4, 7, 10 bar]	<1 x 10 ⁻⁹	0-500 SLPM (0-18 SCFM)	316L SST VAR
74-3800 Single Stage, Ultra-High Purity, High Flow					
• Internally springless & threadless • Precision Electro-Polish • 10 Ra microinch finish • Tied diaphragm design • Cv = .5	600 PSIG [41 bar]	30, 60, 100 PSIG [2, 4, 7 bar]	<1 x 10 ⁻⁹	0-500 SLPM (0-18 SCFM)	316L SST VAR
23 Single Stage, Ultra-High Purity, High Flow					
• Internally springless & threadless • Precision Electro-Polish • 10 Ra microinch finish • Cv = 1.8	250, 150 PSIG [17, 10 bar]	30, 60, 100 PSIG [2, 4, 7 bar]	<1 x 10 ⁻⁹	0-950 SLPM (0-34 SCFM)	316L SST VAR

Gas cabinet pressure regulators



64-3200 Series

PRODUCT SERIES & FEATURES	SOURCE PRESSURE	DELIVERY PRESSURE	CERTIFIED INBOARD LEAK RATE*	FLOW RANGE	BODY MATERIAL
64-2600 Single Stage, Ultra-High Purity					
• 10 Ra microinch finish • Free poppet design • Internal electropolish • Cv = .06	3500 PSIG [241 bar]	30, 60, 100, 250, 500 PSIG [2, 4, 7, 17, 35 bar]	<1 x 10 ⁻⁹	0-100 SLM	316L SST or 316L SST VAR
64-2800 Single Stage, Ultra-High Purity, Tied Diaphragm					
• Tied diaphragm design • 10 Ra microinch finish • Hastelloy® trim available • Cv = .06 (3500 PSIG max. inlet) • Cv = .15 (1000 PSIG max. inlet)	3500, 1000 PSIG [241, 70 bar]	30, 60, 100, 150 PSIG [2, 4, 7, 10 bar]	<1 x 10 ⁻⁹	0-100 SLM	316L SST or 316L SST VAR
64-3200 Single Stage, Ultra-High Purity, High Flow, BSGS					
• Tied diaphragm design • 10 Ra microinch finish • Hastelloy® trim available • Cv = 1.2	1500, 1000 PSIG [103, 70 bar]	30, 60, 100, 150, 200 PSIG [2, 4, 7, 10, 14 bar]	<1 x 10 ⁻⁹	0-900 SLM	316L SST or 316L SST VAR

Facility pressure regulators



22-2200 BA Grade



22-5400 BA Grade



PRODUCT SERIES & FEATURES	SOURCE PRESSURE	DELIVERY PRESSURE	CERTIFIED INBOARD LEAK RATE*	FLOW RATE	BODY MATERIAL
22-2200 BA Grade					
• Metal-to-metal diaphragm seals • 25 Ra microinch finish • Cv = .24	250 PSIG [17 bar]	30, 60, 100, 50 PSIG [2, 4, 7, 10 bar]	<2 x 10 ⁻⁸	0-100 SLP M	316 SST
22-5400 Single Stage, BA Grade, High Flow					
• Free poppet design • 25 Ra microinch finish • Cv = 1.0	600 PSIG [41 bar]	30, 60, 100, 150 PSIG [2, 4, 7, 10 bar]	<1 x 10 ⁻⁸	550 SLPM	316L SST
44-2200 Single Stage, Low Flow					
• Metal-to-metal diaphragm seals • NPT porting • Cv = 0.15	400 PSIG [28 bar]	25, 50, 100, 250 PSIG [1.7, 3.5, 7, 17 bar]	≤ 2 x 10 ⁻⁸	0-100 SLP M	316 SST or brass
44-3200 Single Stage, Ultra-High Flow					
• Metal-to-metal diaphragm seals • NPT porting • Cv = 1.0 & 1.8	500 PSIG [35 bar]	25, 50, 100, 150, 200 PSIG [1.7, 3.5, 7, 10, 14 bar]	<2 x 10 ⁻⁸	1000 SLPM (35 SCFM)	316 SST or brass
449-260 High Flow					
• 10 Ra microinch finish • Cv = 2.8	500 PSIG [35 bar]	25, 50, 100, 150, 200 PSIG [1.7, 3.5, 7, 10, 14 bar]	<2 x 10 ⁻⁸	1700 SLPM (60 SCFM)	316L SST
DH-16 BA Grade, Single Stage, High Flow					
• 25 Ra microinch finish • Cv = 5.0	300 PSIG [21 bar]	50, 100, 150 PSIG [3.5, 7, 10 bar]	N/A	7075 SLPM (250 SCFM)	316 SST
15 Series High Purity, Ultra-High Flow					
• Internally threadless • 10 Ra microinch finish • Spring load: Cv = 8 • Bellows dome load: Cv = 20	300 PSIG [21 bar]	130 PSIG [9 bar]	<1 x 10 ⁻⁹	11,300 SLP M 400 SCFM) 28,300 SLPM (1000 SCFM)	316L SST



M1 MicroStik



PRODUCT & FEATURES	SOURCE PRESSURE	DELIVERY PRESSURE	CERTIFIED INBOARD LEAK RATE*	FLOW RANGE	BODY MATERIAL
M1 MicroStik Regulator & Valve Manifold					
• 12 Series regulator & 14 Series valve • 10 Ra microinch finish • Internally springless & threadless • Internal filter available – 12F	150 PSIG [10 bar]	20" Hg-15, 30, 60, 100 SIG [20" Hg-1, 2, 4, 7 ar]	<1 x 10 ⁻⁹	50 or 120 SLPM	316L SST V AR
M4 MicroStik Regulator & Valve Manifold with Gauge Tee Assembly					
• 12 Series regulator & 14 Series valve • 10 Ra microinch finish • Internally springless & threadless • Internal filter available – 12F	150 PSIG [10 bar]	20" Hg-15, 30, 60, 100 SIG [20" Hg-1, 2, 4, 7 ar]	<1 x 10 ⁻⁹	50 or 120 SLPM	316L SST V AR

Ideal for the semiconductor industry, TESCO high purity regulators are simple and lightweight — featuring high accuracy and reliability, large flow ranges, and minimal internal volumes to reduce media contact points. As a global organization, Emerson will help you meet your production needs with both standard and custom solutions, fast delivery, and local support.

Your local contact: [Emerson.com/contactus](https://www.emerson.com/contact-us)

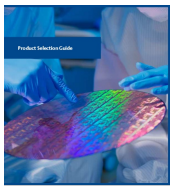


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Documents / Resources



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TESCOM, High Purity Regulators, Purity Regulators, High Purity, TESCO

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