

SCF 3100AL SERIES

Air loaded, High Pressure
Back pressure regulators



The Premier SCF 3100AL Series back pressure regulators are elastomer free, designed to stand up to the aggressive, solvent-like qualities of supercritical CO₂, while providing reliable and precise pressure regulation. Premier SCF 3100AL air loaded, piston sensed, single stage, high pressure, back pressure regulators feature control pressures up to 10000 PSIG (689.48 bar), and Cv 0.03, 0.06, 0.14, or 0.2. Premier 3100AL Series regulators are used to regulate to a broad range of non-corrosive and corrosive media (*based on materials of construction*).

FEATURES

- Designed for use with supercritical CO₂
- Compatible with electro pneumatic controllers
- Cv 0.03, 0.06, 0.14, or 0.2
- Control pressures up to 10000 PSIG (689.48 bar)
- Machined bar stock body, bonnet and piston eliminates porosity found in castings
- Elastomer free

SOME APPLICATIONS WILL REQUIRE A CUSTOM SOLUTION.
CONTACT PREMIER INDUSTRIES TO REQUEST A MODIFICATION
OR A CUSTOM DESIGN.

SPECIFICATIONS

- **MAXIMUM INLET PRESSURE:**
 - REGULATOR:
 - 10000 PSIG / 689.5 bar
 - AIR ACTUATOR:
 - 100 PSIG (6.89 bar)
 - **CONTROL PRESSURE RANGES:**
 - 10-1500 PSIG (0.69 - 103.42 bar)
Diameter: 1.000"
Area: 0.7854 in²
*Ratio: 16/1 ***
 - 15-2500 PSIG (1.03 - 172.37 bar)
Diameter: 0.750"
Area: 0.4418 in²
*Ratio: 28/1 ***
 - 50-6000 PSIG (3.45 - 413.69 bar)
Diameter: 0.500"
Area: 0.1964 in²
*Ratio: 64/1 ***
 - 100-10000 PSIG (6.89 - 689.5 bar)
Diameter: 0.375"
Area: 0.1104 in²
*Ratio: 114/1 ***
- ** 4.0" diameter diaphragm
Diaphragm area: 12.5664 in²*
- **FLOW (Cv):** 0.03, 0.06, 0.14, or 0.20

MATERIALS OF CONSTRUCTION

- **BODY OPTIONS:**
 - 316 Stainless Steel
- **HOUSING, AIR ACTUATOR :**
 - 6061-T6 Aluminum/clear anodized
- **DIAPHRAGM, AIR ACTUATOR :**
 - Neoprene, nylon fabric-reinforced
- **MAIN VALVE STEM:**
 - 17-4 Stainless Steel
- **MAIN VALVE SEAT OPTIONS:**
 - Vespel®
 - PEEK®
- **SEALS:**
 - PTFE
- **WETTED PARTS:**
 - 316 Stainless Steel
 - 17-4 Stainless Steel
- **BACK-UP RINGS:**
 - PTFE
 - PCTFE

PORTING

- **INLET/OUTLET**
 - 1/4", 3/8", 1/2" FNPT
 - 1/4", 3/8", 9/16" MEDIUM PRESSURE
- **AIR ACTUATOR:**
 - 1/4" FNPT (Standard)

OPTIONAL ITEMS

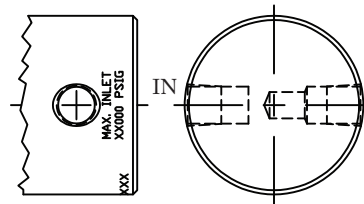
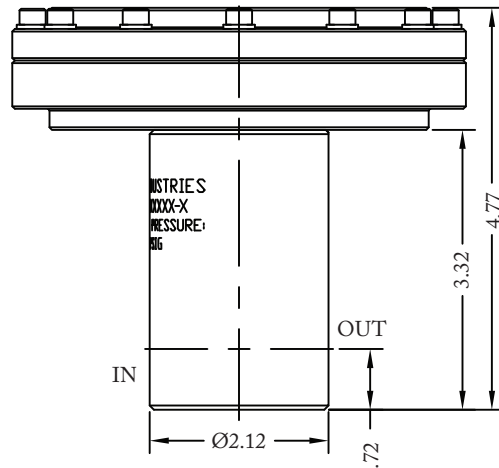
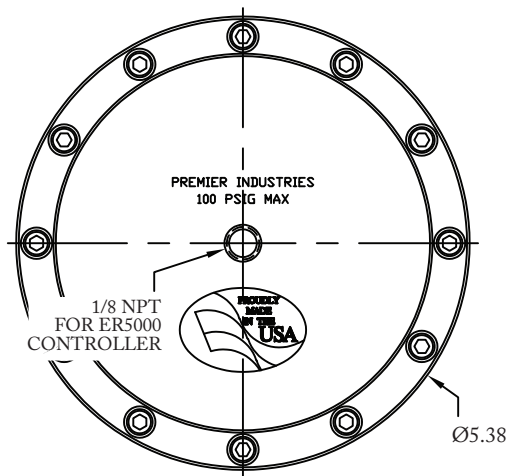
- Panel mounting bracket: P/N: 30-10059
(Ø2.15 panel hole)
- Private label

***SAE AS5202 supersedes MS33649
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E.I.duPont de Nemours and Company
PEEK® is a registered trademark of Victrex PLC*

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PART NUMBER: 30-10205SC




BODY DIMENSIONS		
PORT TYPE	ØA	FLATS
1/4 & 3/8 NPT	Ø2.12	—
1/4" M.P.	Ø2.12	1.98
1/2" NPT	Ø2.48	—
3/8" M.P.	Ø2.48	2.36
9/16" M.P.	Ø2.98	2.78

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PART #	-	1	2	3	4	5	-	6	-	MODS
30-10205SC	-						-		-	

1	CONTROL PRESSURE	
3	10-1500 psig (0.69-103.4 bar)	<i>Diameter: 1.000"</i> <i>Area: 0.7854 in²</i> <i>Ratio: ¹⁶/₁ **</i>
4	15-2500 psig (1.0-172.4 bar)	<i>Diameter: 0.750"</i> <i>Area: 0.4418 in²</i> <i>Ratio: ²⁸/₁ **</i>
6	50-6000 psig (3.4-413.7 bar)	<i>Diameter: 0.500"</i> <i>Area: 0.1964 in²</i> <i>Ratio: ⁶⁴/₁ **</i>
7	100-10000 psig (6.9-689.5 bar) <i>(stainless steel only)</i>	<i>Diameter: 0.375"</i> <i>Area: 0.1104 in²</i> <i>Ratio: ¹¹⁴/₁ **</i>
<i>** 4.0" diameter diaphragm - Diaphragm area: 12.5664 in²</i>		
2	FLOW (Cv)	
A	Cv 0.03	
0	Cv 0.06	
1	Cv 0.14	
2	Cv 0.2	
3	PORT CONFIGURATION (FROM TOP)	
S		

4	PORT SIZE
4	1/4"
6	3/8"
8	1/2"
9	9/16"
<i>*1/2" not available in medium pressure</i> <i>**9/16" only available in medium pressure</i>	
5	PORT TYPE
1	FNPT
4	MEDIUM PRESSURE
6	VALVE SEAT
0	VespeI®
3	PEEK®

MODIFICATIONS	
<i>Separate multiple mods with a dash</i>	
BLANK	NONE
HH	1/8" NPT HEATER HOLES

10000 PSIG MAX INLET
The end user is responsible to ensure adequate fittings are used to connect regulator to plumbing.

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Contact factory for material certifications. Fees may apply.