

# 3100AL SERIES

Air loaded, High Pressure  
Back pressure regulators



Premier 3100AL Series air loaded, piston sensed, single stage, high pressure, back pressure regulators are rated for 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 a broad range of non-corrosive and corrosive media (based on materials of construction).

## FEATURES

- 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
- Numerous optional features are available
- Hydraulic design available

**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 (*MONEL®*)
    - 6000 PSIG / 689.5 BAR (*SAE 360 BRASS*)
  - AIR ACTUATOR:
    - 110 PSIG (*7.5 BAR*)
- **CONTROL PRESSURE RANGES:**
  - 10-1500 PSIG (*0.69 - 103.42 BAR*)
    - Diameter: 1.000"*
    - Area: 0.7854 in<sup>2</sup>*
    - Ratio: 16/1 \*\**
  - 15-2500 PSIG (*1.03 - 172.37 BAR*)
    - Diameter: 0.750"*
    - Area: 0.4418 in<sup>2</sup>*
    - Ratio: 28/1 \*\**
  - 50-6000 PSIG (*3.45 - 413.69 BAR*)
    - Diameter: 0.500"*
    - Area: 0.1964 in<sup>2</sup>*
    - Ratio: 64/1 \*\**
  - 100-10000 PSIG (*6.89 - 689.5 BAR*)
    - Diameter: 0.375"*
    - Area: 0.1104 in<sup>2</sup>*
    - Ratio: 114/1 \*\**
- \*\* 4.0" diameter diaphragm  
Diaphragm area: 12.5664 in<sup>2</sup>*
- **FLOW (Cv):** 0.03, 0.06, 0.14, or 0.20

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*PEEK® is a registered trademark of Victrex PLC*

*Krytox® is a registered trademark of The Chemours  
Company FC, LLC.*

## MATERIALS OF CONSTRUCTION

- **BODY OPTIONS:**
  - SAE 360 brass
  - Monel® 400
- **HOUSING, AIR ACTUATOR :**
  - 6061-T6 Aluminum/clear anodized
- **DIAPHRAGM, AIR ACTUATOR :**
  - Neoprene, nylon fabric-reinforced
- **MAIN VALVE SEAT OPTIONS:**
  - Vespel® SP-21
  - PCTFE (*See page 4 for special instructions*)
- **ELASTOMER SEAL OPTIONS:**
  - BUNA-N
  - Viton-A®
  - EPDM
  - FFKM (*Contact Premier for pricing*)
- **WETTED PARTS:**
  - Monel® 400
  - Monel® K-500
  - SAE 360 Brass
- **BACK-UP RINGS:**
  - PTFE
  - PCTFE
- **STANDARD LUBRICANT:**
  - Krytox® GPL 206

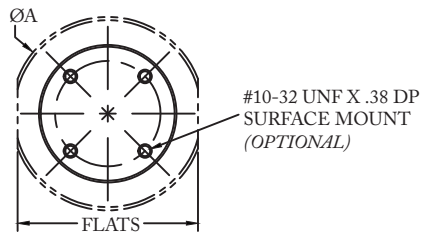
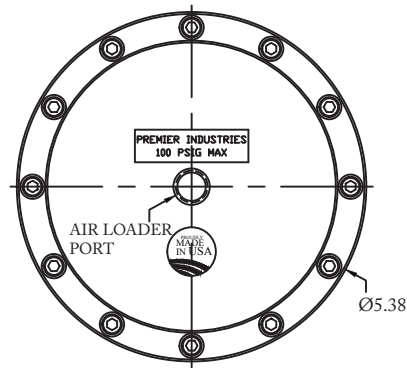
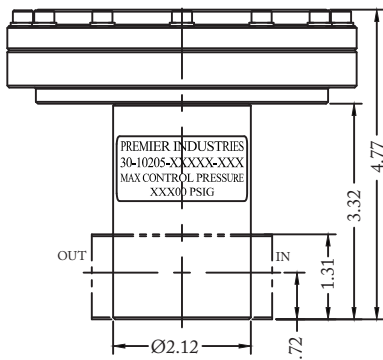
## PORTING

- **INLET/OUTLET**
  - 1/4", 3/8", 1/2" FNPT
  - 1/4", 3/8", 1/2" SAE J1926
  - 1/4", 3/8", 1/2" SAE AS5202 (*MS33649\*\**)
  - 1/4", 3/8", 9/16" MEDIUM PRESSURE
- \*\*SAE AS5202 supersedes MS33649*
- **AIR ACTUATOR:**
  - 1/4-18" FNPT (*Standard*)
  - 1/4" SAE AS5202 (*mod*)
  - 1/4" SAE J1926 (*mod*)
  - 1/8" FNPT (*mod*)

## OPTIONAL ITEMS

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

**PART NUMBER: 30-10205G**



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	—
1/4" SAE	Ø2.48	2.36
3/8" M.P.	Ø2.48	2.36
3/8" SAE	Ø2.73	2.58
1/2" SAE	Ø2.98	2.81
9/16" M.P.	Ø2.98	2.81

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PART #	-	1	2	3	4	5	-	6	7	8	-	MODS
30-10205G	-						-				-	

1	BODY MATERIALS (MAX. INLET PRESSURE)	
1	SAE 360 BRASS (6000 PSIG / 413.7 BAR)	
2	316 STAINLESS STEEL (10000 PSIG / 689.5 BAR)	
2	CONTROL PRESSURE	
3	10-1500 PSIG (0.69-103.4 BAR)	Diameter: 1.000" Area: 0.7854 in <sup>2</sup> Ratio: 16/1 **
4	15-2500 PSIG (1.0-172.4 BAR)	Diameter: 0.750" Area: 0.4418 in <sup>2</sup> Ratio: 28/1 **
6	50-6000 PSIG (3.4-413.7 BAR)	Diameter: 0.500" Area: 0.1964 in <sup>2</sup> Ratio: 64/1 **
7	100-10000 PSIG (6.9-689.5 BAR) (STAINLESS STEEL ONLY)	Diameter: 0.375" Area: 0.1104 in <sup>2</sup> Ratio: 114/1 **
** 4.0" diameter diaphragm - Diaphragm area: 12.5664 in <sup>2</sup>		
3	FLOW (Cv)	
A	Cv 0.03	
0	Cv 0.06	
1	Cv 0.14	
2	Cv 0.2	

4	PORT SIZE	
4	1/4"	
6	3/8"	
8	1/2"*	
9	9/16"***	
*1/2" NOT AVAILABLE IN MEDIUM PRESSURE **9/16" ONLY AVAILABLE IN MEDIUM PRESSURE		
5	PORT TYPE	
1	FNPT	
2	SAE J1926	
3	SAE AS5202 (MS33649**)	
4	MEDIUM PRESSURE	
**SAE AS5202 SUPERSEDES MS33649		
6	VALVE SEAT	
0	Vespe <sup>®</sup>	
3	PEEK <sup>®</sup>	
4	PCTFE*	
*** PCTFE SEATS		MAX CONTROL PRESSURE
Cv 0.03, 0.06		6000 PSIG
Cv 0.14		4000 PSIG
Cv 0.20		3000 PSIG
PCTFE SEAT MAXIMUM CONTROL PRESSURES SUPERCEDE BODY MATERIAL MAXIMUM CONTROL PRESSURES		

7	8	O-RING MATERIAL
00		BUNA-N
02		VITON-A <sup>®</sup>
05		EPDM
11		FFKM (Contact Premier for pricing)
MODIFICATIONS		
Separate multiple mods with a dash		
BLANK		NONE
AC		KRYTOX 240AC
AS		1/4" SAE AS5202 LOADER PORT
E		1/8" NPT AIR LOADER PORT
J		1/4" SAE J1926 LOADER PORT
N		NACE MR0175 COMPLIANT
SM		SURFACE MOUNT

10000 PSIG MAX INLET (STAINLESS STEEL)  
6000 PSIG MAX INLET (BRASS)  
The end user is responsible to ensure adequate fittings are used to connect regulator to plumbing.

Viton-A<sup>®</sup> and Vespe<sup>®</sup> are registered trademarks of E.I. duPont de Nemours and Company

Contact factory for material certifications.  
Fees may apply.