

## PureGuard™ Regenerable Catalytic Purifiers for Nitrogen, Argon, Helium and Hydrogen



PureGuard PSCx Series regenerable purifiers provide 99.9999999% purity gas in a durable, compact system. These purifiers for nitrogen, argon, helium, hydrogen and oxygen are available in flow rates from 10 to 60 Nm<sup>3</sup>/hr. All purifiers include dual-column regenerating systems to provide uninterrupted flow of gas with < 1 ppb purity.

Regenerable catalytic technology is the ideal choice for higher flows of nitrogen and argon due to the lower cost compared to resin or heated getter purifiers. The reactive media is regenerated, so costly replacement or disposal expenses are not required.

PureGuard PSCx Series purifiers provide continuous, high-purity gas with the use of two purifier beds. When the capacity of the first bed is consumed, the control system switches to the alternate bed with no interruption in flow. The standby bed is then regenerated by a proprietary heating and purging procedure. After regeneration, the bed is on standby, ready to provide full purity when switchover is required.

The PSCx Series regenerable purifier provides all purification at ambient temperature with a single online vessel. If total hydrocarbons, including CH<sub>4</sub>, must be removed, then the demethanation option can be added. This feature includes a heated catalyst vessel, upstream of the adsorber bed, to convert methane and other carbon impurities into H<sub>2</sub>O and CO<sub>2</sub>. The remaining impurities are then removed by the downstream adsorber bed.

### Features

- Regenerable catalyst technology
- < 1 ppb O<sub>2</sub>, H<sub>2</sub>O, CO, CO<sub>2</sub>, H<sub>2</sub>, NMHC (CH<sub>4</sub> optional)
- PLC with touch screen HMI
- Protection from exotherm reaction
- Inlet pressure display
- Separate control power
- Suitable for Class I, Division II environment

### Benefits:

- Purification at ambient temperature to reduce power consumption
- Continues to purify to < 1 ppb during power failures
- User-friendly interface
- Worldwide service support network



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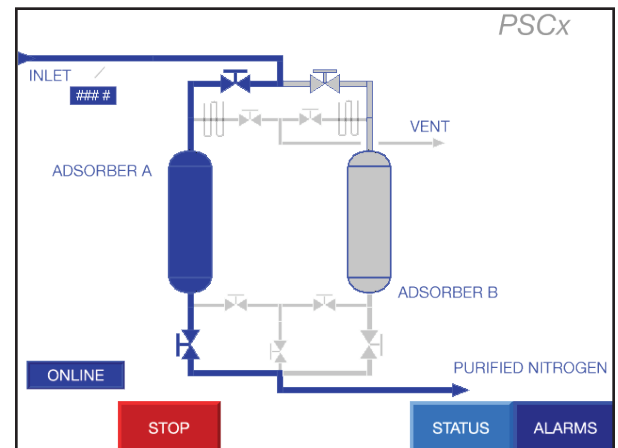
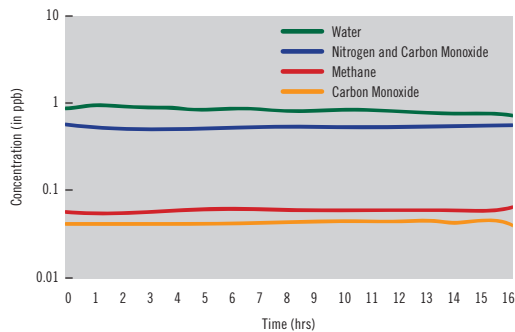
## Specifications

Parameter		PSCx-10/20	PSCx-30	PSCx-40/50/60
<b>Nitrogen, Argon, Helium, Hydrogen</b>	Max flow rate	PSCx-10 10 Nm <sup>3</sup> /hr. PSCx-20 20 Nm <sup>3</sup> /hr.	PSCx-30 30 Nm <sup>3</sup> /hr.	PSCx-40 40 Nm <sup>3</sup> /hr. PSCx-50 50 Nm <sup>3</sup> /hr. PSCx-60 60 Nm <sup>3</sup> /hr.
	Operating Pressure	60-250 psig (4.1 - 17.2 barg)	60-250 psig (4.1 - 17.2 barg)	60-250 psig (4.1 - 17.2 barg)
<b>Outlet Purity</b>	ppb	< 1 ppb O <sub>2</sub> , H <sub>2</sub> O, CO, CO <sub>2</sub> , H <sub>2</sub> , NMHC	< 1 ppb O <sub>2</sub> , H <sub>2</sub> O, CO, CO <sub>2</sub> , H <sub>2</sub> , NMHC	< 1 ppb O <sub>2</sub> , H <sub>2</sub> O, CO, CO <sub>2</sub> , H <sub>2</sub> , NMHC
<b>Dimensions</b>	Width (cm)	39.75" (1009)	39.75" (1009)	39.75" (1009)
	Depth (cm)	31.44" (799)	31.44" (799)	31.44" (799)
	Height (cm)	70.25" (1860)	70.25" (1860)	70.25" (1860)
<b>Electrical Power</b>	Voltage - Phase - Frequency	208-240 VAC - 1 - 50/60	208-240 VAC - 1 - 50/60	208-240 VAC - 1 - 50/60
<b>Pressure Drop</b>	Pressure	< 15 psig @ 120 psig inlet @ rated flow	< 15 psig @ 120 psig inlet @ rated flow	< 15 psig @ 120 psig inlet @ rated flow
<b>Regen Flow</b>	slpm	50	50	50
<b>Regen Gas Pressure (H<sub>2</sub> or N<sub>2</sub>)</b>	psig	55 +/- 5 psig (3.8 +/- 0.34 barg)	55 +/- 5 psig (3.8 +/- 0.34 barg)	55 +/- 5 psig (3.8 +/- 0.34 barg)
<b>Pneumatic Supply</b>	Gas	Dry Air or Nitrogen	Dry Air or Nitrogen	Dry Air or Nitrogen
	Pressure	90 +/- 5 psig (6.2 +/- 0.34 barg)	90 +/- 5 psig (6.2 +/- 0.34 barg)	90 +/- 5 psig (6.2 +/- 0.34 barg)
<b>Enclosure Flow (opt)</b>	cfm	20	20	20

## Options

- Exhaust connection
- Outdoor enclosure
- Manual or automatic bypass
- Inlet mass flowmeter
- H<sub>2</sub> leak detector
- Outlet pressure display
- 0.003 µm outlet filter

## Purity Output by APIMS



HMI Touch Screen display shows Adsorber Bed A is online while Bed B is in standby mode ready to provide purification when Bed A is ready for regeneration.



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Gas Purification Technology

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**Principal Locations:**  
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Japan, Singapore