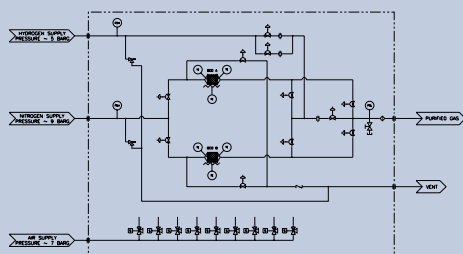
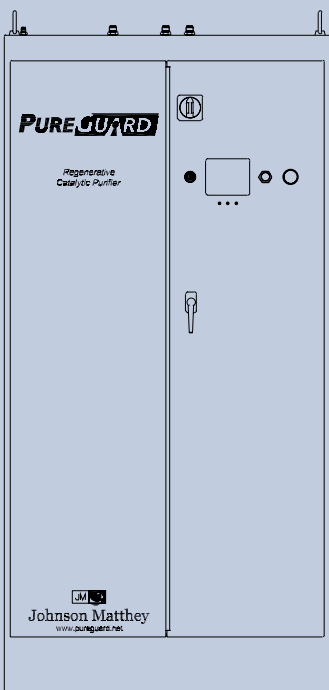


PureGuard™ Regenerable Catalytic Purifier Systems For Nitrogen, Argon/Helium and Oxygen

PUREGUARD™
The pure and simple choice

Johnson Matthey



PureGuard PSC Series Purifiers from Johnson Matthey provide parts-per-billion (ppb) purity in a durable, compact, low-cost package. PSC Series purifiers are designed for bulk nitrogen, argon and oxygen at flow rates from 5 Nm³/hr to 100 Nm³/hr. For any flow rate, the system includes dual-regenerable vessels, control system and complete automation of all operations.

Online All The Time

The PureGuard PSC Series provides continuous, high-purity gas with the use of two purifier vessels. One vessel is online at all times. When the capacity of the first vessel is consumed, the control system switches to the alternate vessel with no interruption in flow. The consumed vessel is then regenerated offline by a proprietary, controlled heating and purging procedure. After

regeneration, the bed is on standby, ready to provide the same efficiency and capacity when it's time to go back online.

Three Different Purifiers—One Common Design

Regenerable purifiers offer flexible solutions to varying gas types, impurity challenges and outlet purity demands. The column sizes can be increased to remove high inlet challenges (ie, > 5 ppm), and additional reactive media can be added to remove difficult impurities such as methane (CH₄) or carbon monoxide (CO).

Features

- CE marked
- SEMI S2 compliant
- Ground fault protection
- PLC system with 2 line text display
- Protection from exotherm reaction
- Redundant overtemperature protection
- Purge/Sample ports

Benefits

- Continuous operation
- No offsite regenerations, no bed replacements
- Purification at ambient temperature to reduce power consumption
- Continues to purify to < 1 ppb during power failures
- Custom sizes and features available
- User-friendly PLC
- Worldwide service support network

Options

- Outdoor enclosure with no footprint increase
- Manual or automatic bypass
- Separate control power
- Inlet Mass Flowmeter
- Inlet Pressure Display
- Outlet Pressure Display
- 0.003 μm outlet filter



Johnson Matthey
Gas Purification Technology

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Standard configurations are described below:

Regenerable Catalytic Purifier – PSC Series

The base model for nitrogen, argon and helium removes O₂, H₂O, CO, CO₂, H₂ and NMHC (non-methane hydrocarbons) to < 1 ppb. All purification is at ambient temperature using a single reactive vessel with one on standby.

Regenerable Catalytic Purifier with THC Removal – PSCM Series

This design for nitrogen, argon and helium removes O₂, H₂O, CO, CO₂, H₂ and all hydrocarbons (THC) including methane (CH₄). An upstream heated catalyst is added to the base model to breakdown the methane and other carbon impurities. These impurities are converted to moisture and CO₂, and downstream adsorber beds remove the remaining impurities. The heated catalyst vessel is continuously online and no replacement or regeneration is required. The downstream adsorber beds are alternately regenerated.

Regenerable Catalytic Oxygen/CDA purifier – PSCO Series

This design for oxygen or CDA removes H₂O, CO, CO₂, H₂ and all hydrocarbons (THC) including methane (CH₄). The heated catalyst converts impurities to moisture and CO₂, and downstream adsorber beds remove the remaining impurities without reacting with the oxygen. The heated catalyst vessel is continuously online and no replacement or regeneration is required. The downstream adsorber beds are alternately regenerated.

Regenerable Catalytic Purifiers < 1 ppb O₂, H₂O, CO, CO₂, H₂

Model	PSC-5	PSC-10	PSC-20	PSC-50	PSC-100
Maximum Flow Rate	5 Nm ³ /hr.	10 Nm ³ /hr.	20 Nm ³ /hr.	50 Nm ³ /hr.	100 Nm ³ /hr.
Operating Pressure	17 bar (250 psig)	17 bar (250 psig)	17 bar (250 psig)	17 bar (250 psig)	17 bar (250 psig)
Pressure Drop	< 1 bar (15 psig) at max flow, 10 bar (150 psig inlet)	< 1 bar (15 psig) at max flow, 10 bar (150 psig inlet)	< 1 bar (15 psig) at max flow, 10 bar (150 psig inlet)	< 1 bar (15 psig) at max flow, 10 bar (150 psig inlet)	< 1 bar (15 psig) at max flow, 10 bar (150 psig inlet)
Power Requirements	220V/1ph /50Hz 3 kW peak, 1 kW nominal	220V/1ph /50Hz	220V/1ph /50Hz	220V/1ph /50Hz	220V/1ph /50Hz
Pneumatic Pressure	7 bar (100 psig)	7 bar (100 psig)	7 bar (100 psig)	7 bar (100 psig)	7 bar (100 psig)
Regeneration Gas Flow Rate	5 slpm	23 slpm	23 slpm	55 slpm	110 slpm
Purge/Overpressure Relief Line	1/2" VCRM	1/2" VCRM	1/2" VCRM	1" VCRM	1" VCRM

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Principal Locations:
North America,
England, Japan, South
Korea, Taiwan,
China and Hong Kong

Regenerable Catalytic Purifiers with THC Removal < 1 ppb O₂, H₂O, CO, CO₂, H₂, THC (CH₄ + NMHC)

Model	PSCM-5	PSCM-10	PSCM-20	PSCM-50	PSCM-100
Maximum Flow Rate	5 Nm ³ /hr.	10 Nm ³ /hr.	20 Nm ³ /hr.	50 Nm ³ /hr.	100 Nm ³ /hr.
Operating Pressure	17 bar (250 psig)	17 bar (250 psig)	17 bar (250 psig)	17 bar (250 psig)	17 bar (250 psig)
Pressure Drop	< 1 bar (15 psig) at max flow, 10 bar (150 psig inlet)	< 1 bar (15 psig) at max flow, 10 bar (150 psig inlet)	< 1 bar (15 psig) at max flow, 10 bar (150 psig inlet)	< 1 bar (15 psig) at max flow, 10 bar (150 psig inlet)	< 1 bar (15 psig) at max flow, 10 bar (150 psig inlet)
Power Requirements	220V/1ph /50Hz	220V/1ph /50Hz	220V/1ph /50Hz	220V/1ph /50Hz	220V/1ph /50Hz
Pneumatic Pressure	7 bar (100 psig)	7 bar (100 psig)	7 bar (100 psig)	7 bar (100 psig)	7 bar (100 psig)
Regeneration Gas Flow Rate	5 slpm	23 slpm	23 slpm	55 slpm	110 slpm
O ₂ Injection	99.999% purity, 7 bar (100 psig)	99.999% purity, 7 bar (100 psig)	99.999% purity, 7 bar (100 psig)	99.999% purity, 7 bar (100 psig)	99.999% purity, 7 bar (100 psig)
Purge/Overpressure Relief Line	1/2" VCRM	1/2" VCRM	1/2" VCRM	1" VCRM	1" VCRM

Regenerable Catalytic Oxygen/CDA Purifier < 1 ppb H₂O, CO, CO₂, H₂, THC (CH₄ + NMHC)

Model	PSCO-5	PSCO-10	PSCO-20	PSCO-50	PSCO-100
Maximum Flow Rate	5 Nm ³ /hr.	10 Nm ³ /hr.	20 Nm ³ /hr.	50 Nm ³ /hr.	100 Nm ³ /hr.
Operating Pressure	17 bar (250 psig)	17 bar (250 psig)	17 bar (250 psig)	17 bar (250 psig)	17 bar (250 psig)
Pressure Drop	< 1 bar (15 psig) at max flow, 10 bar (150 psig inlet)	< 1 bar (15 psig) at max flow, 10 bar (150 psig inlet)	< 1 bar (15 psig) at max flow, 10 bar (150 psig inlet)	< 1 bar (15 psig) at max flow, 10 bar (150 psig inlet)	< 1 bar (15 psig) at max flow, 10 bar (150 psig inlet)
Power Requirements	220V/1ph /50Hz	220V/1ph /50Hz	220V/1ph /50Hz	220V/1ph /50Hz	220V/1ph /50Hz
Pneumatic Pressure	7 bar (100 psig)	7 bar (100 psig)	7 bar (100 psig)	7 bar (100 psig)	7 bar (100 psig)
Regeneration Gas Flow Rate	5 slpm	23 slpm	23 slpm	55 slpm	110 slpm
Purge/Overpressure Relief Line	1/2" VCRM	1/2" VCRM	1/2" VCRM	1" VCRM	1" VCRM



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