



AERONEX® Z SERIES GAS PURIFICATION SYSTEM

*Continuous XCDA® (extreme clean dry air) purge
gas at a low cost of ownership*



continuous XCDA® purge gas at a low cost of ownership

Overview

The Aeronex® Z Series removes gaseous contaminants such as SO₂, SO_x, NO_x, H₂S, H₂O, CO₂, siloxanes, ammonia, amines, acid gasses, alcohols and non-methane hydrocarbons to sub-ppb levels in CDA (air) gas. The systems utilize ambient temperature purification technology, have a low pressure drop and offer a low cost of ownership.

With the Aeronex® Z Series systems, all purifiers used in a process are integrated into a single, microprocessor-controlled cabinet with a touch screen interface. The systems use two purifier beds in order to maintain a continuous flow of pure gas. One purifier bed is on-line while the other is in regeneration or is ready for use. Contaminants are removed to sub-ppb (part-per-billion) and ppt (part-per-trillion) levels.

All functions such as conditioning and purging are completely automated, requiring minimal user interface and providing maximum reliability and cost of ownership. The system offers improved safety by placing all purifiers in a single location and, because the purifiers are regenerable, there are no environmental concerns.

Panel-mounted subsystems are offered specifically to OEMs and are designed for integration into a process tool.

Applications

- Photolithography
- FOUP cleaning and purging
- Stocker cleaning and purging
- Other applications that require XCDA® purge gas

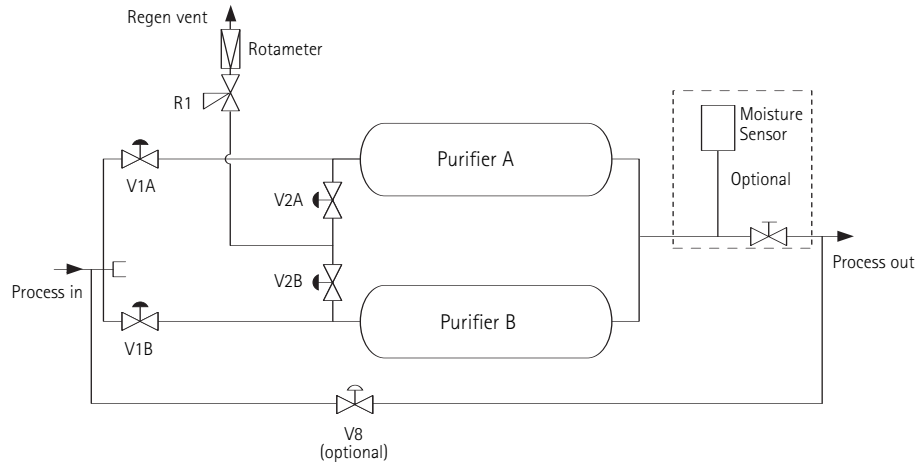
Features and Benefits

- Power failure will not damage the purification system
- Complete automatic operation saves time, increases reliability
- Purifies to sub-ppb (part-per-billion) and ppt (part-per-trillion) levels
- Low pressure drop means no changes to inlet pressure are required
- Self-regenerating purifiers provide the lowest cost of ownership
- Ambient temperature purification means lower energy costs and resource conservation
- CE and SEMI® S2 certified
- Start-up service is provided, making it easy to integrate the unit
- The system is designed for easy field maintenance and upgrades
- Available worldwide through Entegris' global infrastructure

Models Available

Model	Description
PGPS4Z	Panel-mounted model for OEM use and for applications requiring a flow rate up to 120 SLM
EGPS4Z	Enclosed model for use with applications requiring a flow rate up to 120 SLM
EGPS8Z	Enclosed model for use with applicatons requiring a flow rate up to 500 SLM
EGPS12Z	Enclosed model for use with applicatons requiring a flow rate up to 1000 SLM

System Process and Instrumentation Diagram



Safety Features

Feature	Description	PGPS4	EGPS4	EGPS8	EGPS12
Circuit breaker	Provides additional electrical protection to the system and includes a lock-out/tag-out.	N/A	Yes	Yes	Yes
Over temperature rise condition	Monitored via thermocouple. Heaters sized to prevent runaway conditions. As a secondary precautionary device, a high-temperature hardware interlock is included on all systems.	Yes	Yes	Yes	Yes
EMO button	When activated, power is removed from the cabinet. The system shuts down. The front panel and controller remain powered.	N/A	Yes	Yes	Yes
Remote EMO	Provides input for remote EMO activation and an output for remote signal of EMO condition.	Yes	Yes	Yes	Yes
Remote alarm	In the event of a minor alarm in the system not requiring an EMO shutdown, the system will send a signal to an external sensing device that alerts the facility of the alarm.	Yes	Yes	Yes	Yes
Visual alarm	In the event of an alarm, a detailed description of the alarm will be displayed in red on systems that include a touch screen. In the event of an alarm on a system with LEDs, a red LED indicator will activate.	Yes	Yes	Yes	Yes
Audible alarm	Alarm conditions result in an audible alarm.	N/A	Yes	Yes	Yes
Isolated electrical enclosure	Electronics are physically isolated from the main purifier cabinet in an attached electrical enclosure in situations where high voltage lines are near potentially flammable gas.	N/A	Yes	Yes	Yes

Product Specifications

Model	PGPS4	EGPS4	EGPS8	EGPS12
Gases purified	CDA (air)			
Media type	Inorganic			
Contaminants removed	Volatile acids, volatile bases, refractory compounds, condensable organics, moisture			
Outlet purity	<1 part-per-billion (ppb)*			
Operating pressure range	(515–1825 kPa) 60–250 PSIG			1136 kPa (60–150 PSIG)
Pressure drop	<10 PSI @ 120 PSIG inlet and max rated flow			<17 PSI @ 90 PSIG and max rated flow
Maximum flow rate	120 SLM		500 SLM	1000 SLM
Gas operating temperature	-40°C to +60°C (-40°F to +150°F)			
Outlet filtration	0.003 micron @ 99.9999999% efficiency			
Leak rating	1 × 10 ⁻⁹ atm cc/sec.			

*Outlet purity is significantly lower for some contaminants. Test data available upon request.

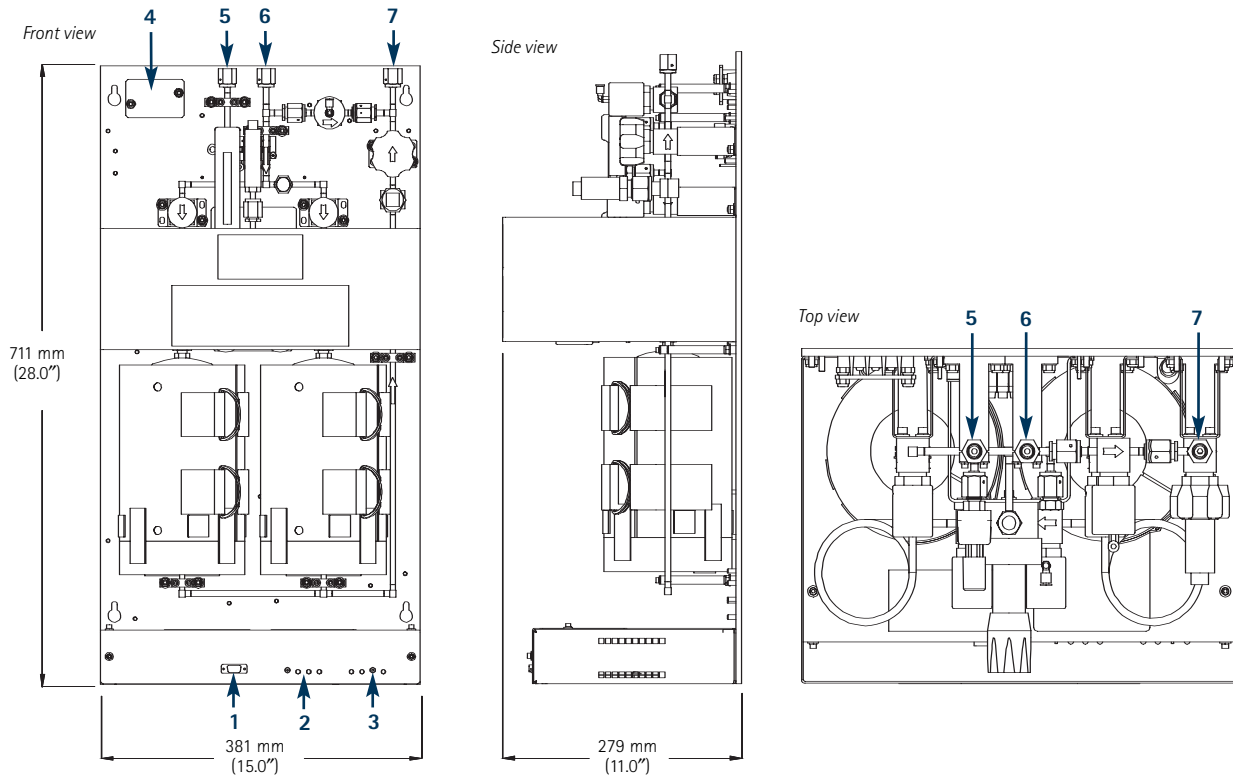
Facility Specifications

Specifications		PGPS4	EGPS4	EGPS8	EGPS12
Process gas input	Mechanical connection	1/4" face seal	1/4" tube stub	1/2" tube stub	3/4" tube stub
Process gas output	Mechanical connection	1/4" face seal	1/4" tube stub	1/2" tube stub	3/4" tube stub
Ventilation	Mechanical connection	N/A	4" duct		
	Exhaust flow	N/A	50 CFM	100 CFM	65 CFM
Power requirements	Mechanical connection	Standard terminal			
	Power requirements	200–240 VAC			
	Power consumption	50W at idle and process mode; 300W during regen		50W at idle and process mode; 800W during regen	50W at idle and process mode; 1000W during regen
Regeneration	Max regen frequency	3 days (May be configured per customer inlet gas purity)			
	Regen duration	48 hours			
Regen gas output	Pressure	Atmospheric			
	Mechanical connection	1/4" tube stub			
Instrument air	Gas and pressure	CDA or N ₂ @ 653–791 kPa (80–100 PSIG)			
	Mechanical connection	1/4" compression fitting			
Physical requirements	Mounting	Wall		Floor	
	Shipping weight	32 kg (70 lbs)	39 kg (85 lbs)	113 kg (250 lbs)	205 kg (450 lbs)
	Operating conditions	15°–40°C indoor (60°–104°F indoor)			
	Humidity	10–90% RH noncondensing			

Note: It is the customer's responsibility to ensure that the equipment is installed according to local building code requirements.

Model PGPS4

Dimensional Information



System Connections

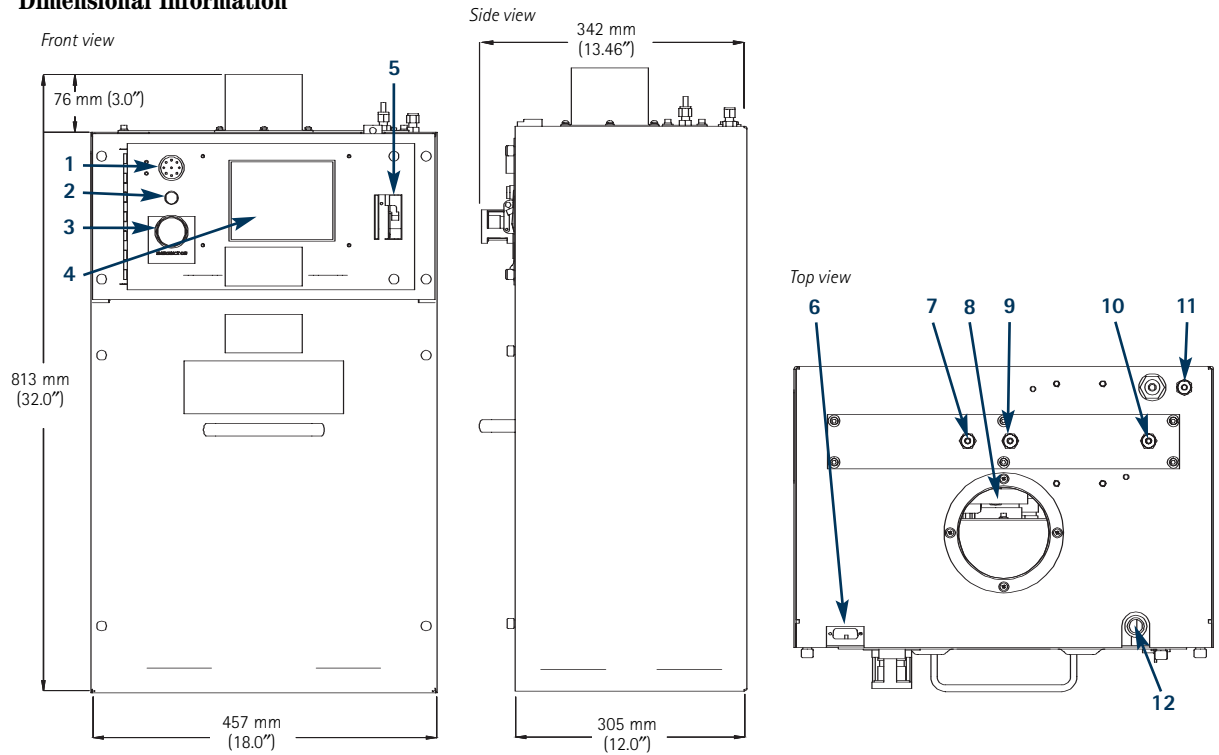
1	Communications port	For user interface via PC
2	LED indicators	For main power, bed online, bed regen, heaters and alarms
3	Start	Used to begin system operations and to clear alarms
4	A/C terminal block	Power connection
5	Gas exhaust/regen vent	Exhausts regen gas
6	Process gas input	Inlet gas (not purified)
7	Process gas output	Outlet gas (purified)

Panel Information

This equipment is not enclosed. It is the user's responsibility to ensure that it is installed in compliance with local safety requirements for gas equipment. The PGPS4 is designed using SEMI® S2 guidelines for gas equipment enclosures. Because it is a subsystem, it must be certified with the final product in which it is used.

Model EGPS4

Dimensional Information



System Connections

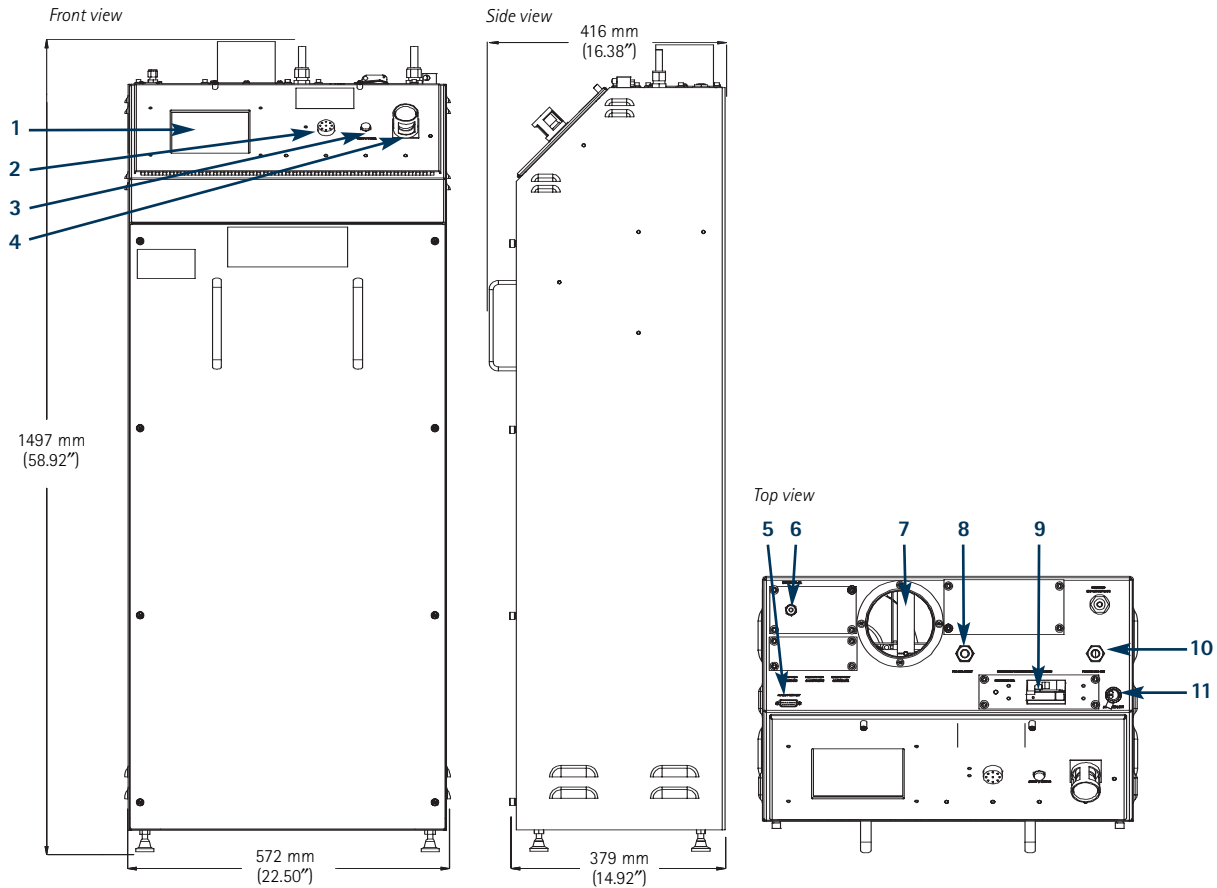
1	Audible alarm	Audible warning informs of alarm condition
2	Start	Used to begin system operations and to clear alarms
3	EMO	When activated, power is removed from the cabinet. The system shuts down. Front panel and controller remain powered.
4	Touch screen	For system status and interface
5	Circuit breaker	Provides additional electrical protection to the system and in some models also acts as an ON/OFF switch for the system
6	Remote alarm interface	Allows for remote alarm input and output with female 15 pin DB connector
7	Regen gas vent	Exhausts regen gas
8	Exhaust vent	Allows ventilation
9	Process gas input	Inlet gas (not purified)
10	Process gas output	Outlet gas (purified)
11	Instrument air	Supplies gas to the air operated control valves
12	A/C power input	Power connection

Enclosure Information

The ventilated enclosure is designed for indoor applications only. The enclosure has mounting locations on the back surface. The front panel is removable.

Model EGPS8

Dimensional Information



System Connections

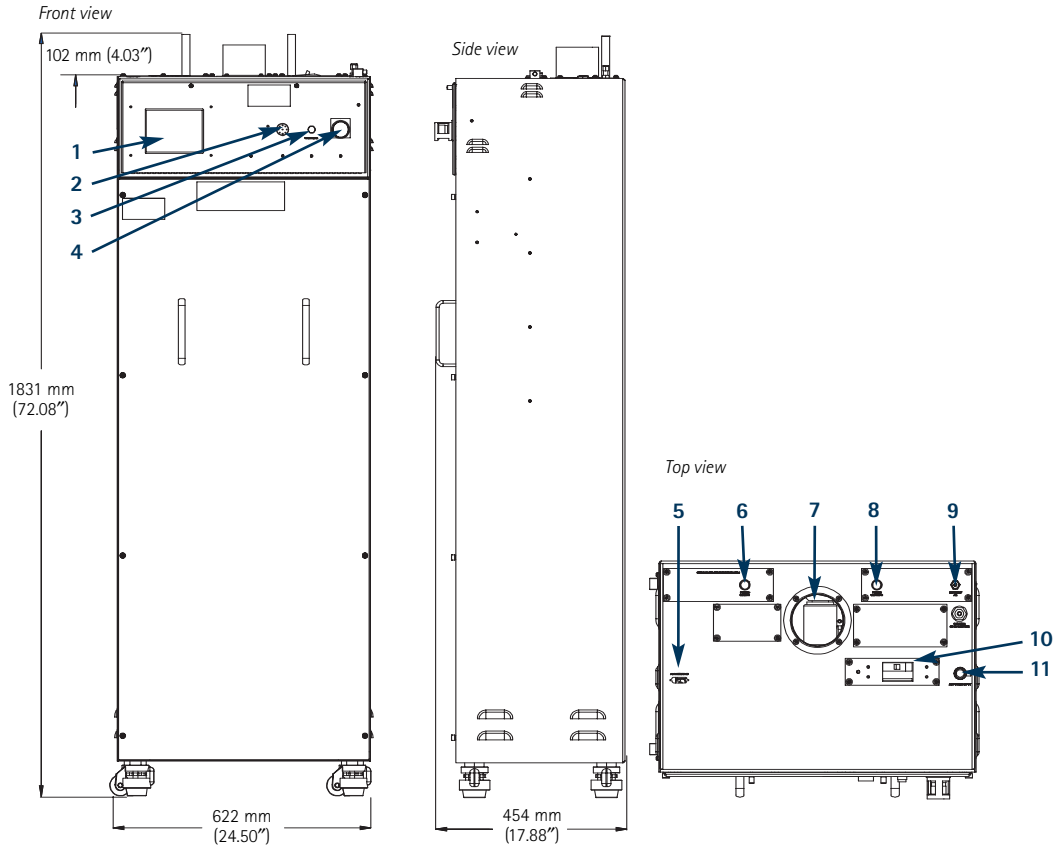
1	Touch screen	For system status and interface
2	Audible alarm	Audible warning informs of alarm condition
3	Start	Used to begin system operations and to clear alarms
4	EMO	When activated, power is removed from the cabinet. The system shuts down. Front panel and controller remain powered.
5	Remote alarm interface	Allows for remote alarm input and output with female 15 pin DB connector
6	Instrument air	Supplies gas to the air-operated control valves
7	Exhaust vent	Allows ventilation
8	Process gas input	Inlet gas (not purified)
9	Circuit breaker	Provides additional electrical protection to the system and in some models also acts as an ON/OFF switch for the system.
10	Process gas input	Inlet gas (not purified)
11	A/C power input	Power connection

Enclosure Information

The ventilated enclosure is designed for indoor applications only. The enclosure has mounting locations on the back surface. The front panel is removable.

Model EGPS12

Dimensional Information



System Connections

1	Touch screen	For system status and interface
2	Audible alarm	Audible warning informs of alarm condition
3	Start	Used to begin system operations and to clear alarms
4	EMO	When activated, power is removed from the cabinet. The system shuts down. Front panel and controller remain powered.
5	Remote alarm interface	Allows for remote alarm input and output with female 15 pin DB connector
6	Process gas input	Supplies gas to the air-operated control valves
7	Exhaust vent	Allows ventilation
8	Process gas output	
9	Instrument air	Supplies gas to the air-operated control valves
10	Circuit breaker	Provides additional electrical protection to the system and in some models also acts as an ON/OFF switch for the system
11	A/C power input	Power connection

Enclosure Information

The ventilated enclosure is designed for indoor applications only. The enclosure has bolt down locations on the bottom surface. The front panel is removable.

Options

Available Options	Letter (Designator)	PGPS4	EGPS4	EGPS8	EGPS12
Automatic bypass manifold	A	Yes	Yes	Yes	Yes
Manual bypass manifold	M	Yes	Yes	Yes	Yes
Moisture indicator	T	Yes	Yes	Yes	Yes
Japanese kit*	J	N/A	N/A	Yes	Yes

*Consult factory for more information

Ordering Information

Part Number

PGPS4 Panel-mounted model for OEM use and applications requiring a flow rate up to 120 SLM	EGPS4 Use with applications requiring a flow rate up to 120 SLM	EGPS8 Use with applications requiring a flow rate up to 500 SLM	EGPS12 Use with applications requiring a flow rate up to 1000 SLM
PGPS4Z	EGPS4Z	EGPS8Z	EGPS12Z
PGPS4ZA	EGPS4ZA	EGPS8ZA	EGPS12ZA
PGPS4ZAT	EGPS4ZAT	EGPS8ZAT	EGPS12ZAT
PGPS4ZM	EGPS4ZM	EGPS8ZATJ	EGPS12ZATJ
PGPS4ZMT	EGPS4ZMT	EGPS8ZM	EGPS12ZM
PGPS4ZT	EGPS4ZT	EGPS8ZMT	EGPS12ZMT
		EGPS8ZT	EGPS12ZT

Part Number	Automatic Bypass Manifold	Manual Bypass Manifold	Moisture Indicator	Japanese Kit*
PGPS4Z				
PGPS4ZA	Yes			
PGPS4ZAT	Yes		Yes	
PGPS4ZM		Yes		
PGPS4ZMT		Yes	Yes	
PGPS4ZT			Yes	
EGPS4Z				
EGPS4ZA	Yes			
EGPS4ZAT	Yes		Yes	
EGPS4ZM		Yes		
EGPS4ZMT		Yes	Yes	
EGPS4ZT			Yes	

Part Number	Automatic Bypass Manifold	Manual Bypass Manifold	Moisture Indicator	Japanese Kit*
EGPS8Z				
EGPS8ZA	Yes			
EGPS8ZAT	Yes		Yes	
EGPS8ZATJ	Yes		Yes	Yes
EGPS8ZM		Yes		
EGPS8ZMT		Yes	Yes	
EGPS8ZT			Yes	
EGPS12Z				
EGPS12ZA	Yes			
EGPS12ZAT	Yes		Yes	
EGPS12ZATJ	Yes		Yes	Yes
EGPS12ZM		Yes		
EGPS12ZMT		Yes	Yes	
EGPS12ZT			Yes	

Specifications are subject to change. Please verify prior to order.



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