AES Group, Inc.

Sales • Construction • Service

Temporary-Rental Oil-Free Enclosed Scroll Air Compressor System

Base Model (Powerex)	SEQ2007-AES-SPL-DD
System Configuration	(1) 20HP Enclosed Scroll Compressors
Horsepower (Total)	20HP - 460V 3Phase 60Hz – 28FLA Each Compressor
System Capacity	60.8 SCFM @ 100 PSIG – 85-90 PSIG Delivery Pressure
Receiver Size-Configuration	TDD120060-SPL-120 Gallon Vertical Receiver-120V Power Required

General

The Powerex Scroll Enclosed Air Compressor System is designed to provide clean, dry air for applications where the quality of the compressed air is critical. The standard unit is rated for a maximum of 116 PSIG.

Air Compressed System

The package shall include multiple oil-less scroll air compressors and associated equipment. The only field connections required will be system intake if remote intake option is chosen, exhaust, and power connection at the control panel.

Oil less Scroll Compressor Pump

Each compressor pump shall be belt drive oil-less rotary scroll single stage, air-cooled with absolutely no oil needed for operation. The rotary design shall not require any inlet or exhaust valves within the compressor pump housing or structure and shall be rated for 100% continuous duty. Direct drive compressors shall not be used. Tip seals shall be of a composite PTFE material and be rated for 8,000 hours operation for standard units, and 4,000 hours operation of high-pressure units. Compressor pump bearings shall be external to the air compression chamber and pin crank and moving scroll bearings shall be serviceable for extended compressor life. Bearing maintenance shall not be required until 8,000 run hours for standard units, and 4,000 run hours for high pressure units. Compressor pumps with bearings that are not accessible for service have a limited life with bearings that are not accessible for service have a limited life span and shall not be accepted. Compressor pumps shall have an integral radial flow fan for cooling. Each compressor pump shall have flexible connectors on intake and discharge. Each compressor pump shall have a non-metallic heat insulting liner for the discharge air pipe where it threads into the compressor housing.
Each compressor pump shall be provided with an electric drive motor, discharged check valve, an air-cooled after-cooler, and a high discharge temperature shut down switch. Auxiliary cooling fans shall operate from 120-volt power provided by the transformer included in the system controls.

Approach Temperatures

The system is designed with 3 stages of internal aftercooling so that the approach temperature shall be no greater than 24°F above ambient at system discharge with the system running at maximum capacity. No additional external aftercooling is required for use with a dryer.

Motor

Each compressor shall be belt driven by a 2 pole, TEFC, NEMA construction motor that run at 3500 RPM. Motors are EISA compliant and premium efficient.

Motor Slide Base

Maintenance feature designed for easy adjustment of belt tension from the motor side on the basemount assembly.

- Robust single screw linear belt tension adjustment.
- Custom compact design.

System Controls

4330 Redwood Highway, Suite 100
San Rafael, CA 94903
Tel 415 507-9373 Fax 415 507-9376

The controls operate the duplex or triplex air compressor modules as needed in response to a pressure signal from a pressure transducer located in the system manifold. An illuminated on/off push button controls power to the motor starters. When the button is in the off position, the system is merely in stand-by mode, not powered off.
The pressure transducer sends a signal to the programmable logic controller (PLC) which is programmed to operate two, three or four compressor modules as needed to maintain the system pressure requirements. An HMI touch screen interface displays system status and alarm conditions. Pressure settings are user adjustable within factory predetermined setting limits.
The PLC will alternate each compressor module based on demand as well as timed alternation. If a compressor module is running longer than ten minutes continuously, the control will alternate to the next available compressor module to equalize run time and synchronize maintenance intervals. On initial startup or if air pressure drops rapidly, simultaneous motor starts are prevented by a programmed three second stagger. One 120VAC control circuit transformer with primary and secondary fuses is installed for control circuit voltage.
Motor circuit breakers with lockable disconnects are provided for each compressor module. Operating hours, high temperature alarms, motor overloads alarms, run indication, and hours to schedule maintenance for each compressor module are displayed on the screen. All alarm history is kept in the alarm log. Easily navigated menus are provided to allow the user to select the display conditions and acknowledge the alarms. Remote alarm contracts are provided as shown on the system wiring diagram.

Inlet Filters
The system includes an inlet filter with a pleated element and a canister with silencing tubes for each pump. The filters are located on each pump inside the sound reducing cabinet protected by a convenient access panel.

Sound Reducing Enclosure
The system is constructed with an internal frame and steel base system with individual vibration isolation mounted compressor modules. The sound reducing enclosure has a front access panel to allow service of the electrical controls. The enclosure has rear cooling air intake, and all exhaust air leaves the enclosure from the top.

PD208A-SPL
60 SCFM @ 100 PSIG
115/1/60

DESICCANT AIR DRYER / FILTRATION:
The twin-tower, heatless desiccant air dryer shall be sized for the full system capacity and to yield a pressure dew point of -40 degrees F. The dryer design shall be of the automatic pressure swing, heatless, regenerative type and shall include integrated exhaust air silencers for quiet operation. Control display features include a schematic of the dryer, two LED indicators for each tower to indicate whether the tower is dryer or regenerating/re-pressurizing, and one LED indicating operation of the pre-filter drain. Four user selectable purge optimizer settings are provided to allow adjusting the purge rate in situations where the full dryer capacity is not required. The purge settings are based on percentage of rated flow and can be set at 100%, 80%, 60%, or 40%. The filtration system shall consist of 2 stages of filtration. The first stage of filtration shall include a .01 micron coalescing pre-filter with element change indicator and automatic condensate drain and installed up-stream of the air dryer. The second stage is a 1-micron particulate filter with element change indicator and mounted at the discharge of the dryer.

AIR RECEIVER, 120 GALLON, VERTICAL
WL series, vertical ASME certified, 200 PSIG air receiver to include pressure gauge, auto drain, safety valve and internal lining to resist corrosion.

DEW POINT MONITOR:
The system-integrated hygrometer shall be equipped with an LCD dewpoint display and high dewpoint alarm with dry contacts for remote monitoring. The dew point sensor (probe) shall be installed so that the monitored airflow is downstream of the pressure regulator assembly. The sensor shall include an auto calibration feature to ensure the accuracy of the dewpoint measurement. Monitor to be wired to desiccant air dryer to control dewpoint demand purge saving control.

SKID MOUNT & PIPED