

Specification

General

The Powerex Scroll Enclosed tank mounted system is designed to provide clean, dry air for industrial applications where the quality of the compressed air is critical. The standard unit is rated for a maximum of 116 PSIG. The high pressure unit is rated for a maximum of 145 PSIG.

Air Compressor System

The package shall include one or two oil-less scroll air compressor and associated equipment, one ASME tank, and magnetic starter/alternating control panel. The only field connections required will be plumbing to the system discharge and electrical power connection to the control panel and optional refrigerated dryer. All interconnecting piping and wiring shall be included and operationally tested prior to shipment. An air dryer system is optional (simplex units will have mounted dryers; on duplex units the dryer will be separate from the unit).

Oilless Scroll Compressor Pump

The compressor/s shall be belt driven oil-less rotary scroll single stage, air-cooled oil-less construction with absolutely no oil needed for operation. The rotary design shall not require any inlet or exhaust valves 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, 4,000 hours operation for high pressure units. Compressor bearings shall be external to the air compression chamber and shall all be serviceable for extended compressor life. Bearing maintenance shall not be required until 8,000 run hours for standard units, 4,000 run hours for high pressure units. Compressors with bearings that are not accessible for service have a limited life span and shall not be accepted.

Each compressor pump shall be provided with an electric drive motor, discharge 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.

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

Sound Reducing Enclosure

The system is constructed with an internal frame and steel base system with an individual vibration isolation mounted compressor

module. The sound reducing enclosure has side access panels to allow service of the electrical controls. The enclosure has side cooling air intakes and all exhaust air leaves the enclosure from the right side.

Air Receiver

The system shall include an ASME rated air receiver, rated for 200 PSI MAWP. The tank shall be equipped with a pressure gauge, safety relief valve, and discharge shut-off valve.

Standard drain valve is a 115V automatic solenoid timer drain. Optional: 115V "No-loss" type automatic tank drain.

Air-cooled Aftercooler

Air-cooled aftercoolers shall be provided for each compressor and shall be sized to provide an approach temperature 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. Each unit shall be constructed of corrosion-resistant metals.

Air Filters

The system includes a single inlet filter with a pleated element and a canister. The single inlet filter serves all the compressor modules in the system. The filter is located inside the sound reducing cabinet protected by a convenient access panel. The filter is configured for remote intake at the corner of the box.

Optional Desiccant Air Dryer

The twin-tower desiccant dryer shall be sized for the peak calculated system demand to provide a pressure dew point of 0°F. Dryer controls shall include a re-pressurization cycle to prevent shocking of the desiccant bed prior to switching towers. An integral purge saving control system shall be provided and shall suspend the purge air loss during periods of low demand. When the dryer is in purge control mode, the tower switching valves shall not operate, and only one desiccant tower shall be on-line. Dryers that continue to operate the switching valves on a fixed cycle, while in purge control mode shall not be acceptable. (Dryers utilizing purge control require the optional dew point monitor listed below.) Each dryer is supplied with two stages of filtration. The pre-filter removes particulates and liquids and includes an element change indicator and automatic condensate drain. The 0.5 micron after filter includes an element change indicator. Dryers shall be powered through the compressor controls.

Optional Refrigerant Air Dryer

The Powerex air drying system shall be tank mounted with compressor, and shall provide air at a 35-38°F pressure dew point. The refrigerated compressed air dryer is non-cycling, direct expansion, using R-134a refrigerant. A constant pressure expansion valve is provided to maintain a 38°F evaporator temperature. The dryer is self-regulating for large load swings, and includes a 3 micron filter/separator with automatic condensate drain. Refrigerated dryers are to be powered from a separate supply, not through the compressor controls. Option also includes a .01 micron after filter, a pressure regulator and an installed automatic solenoid timer drain. Simplex

units will have mounted dryers; for duplex units, dryer is separate from unit.

System Controls

The controls operate the simplex or duplex 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 one or two 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.

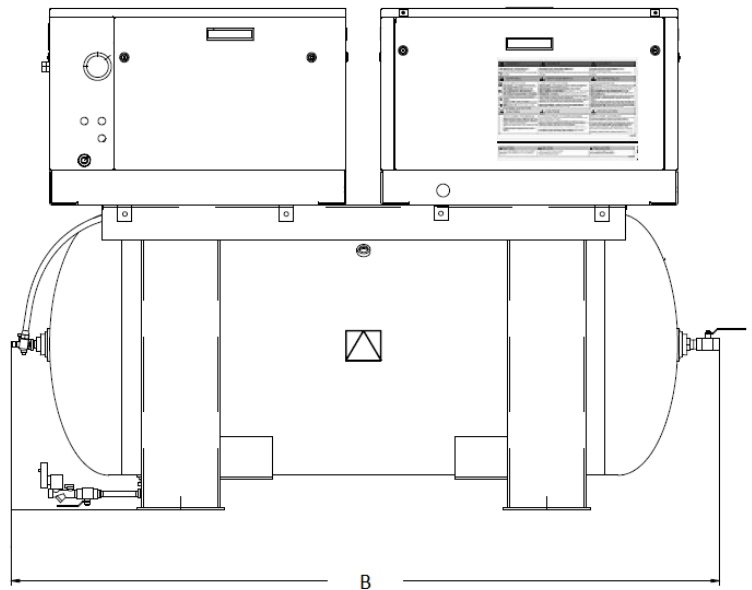
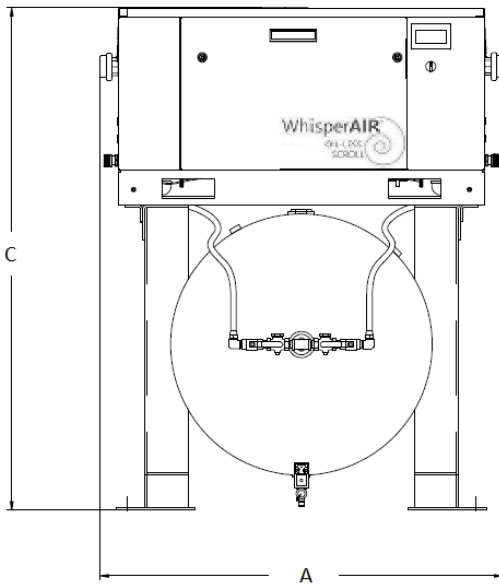
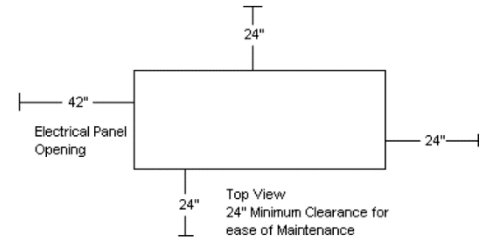
The PLC will alternate each compressor module based on demand as well as timed alternation (duplex models). If a compressor module is running longer than ten minutes continuously, the control will alternate to the next available compressor module to equalize run time and synchronize maintenance intervals. 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.

Overload relays are provided for Simplex models and motor circuit breakers with lockable disconnects are provided for each compressor module on Duplex models. Operating hours, high temperature alarms, motor overload alarms, run indication, and hours to scheduled 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 contacts are provided as shown on the system wiring diagram.

Available Options

- Premium Warranty
- Air Receiver options
 - 120, 200 (unit specific)
 - Electric drain
 - FDA approved tank lining
- Control Panel options
 - NEMA 4/12 – requires external control panel
- Refrigerant air dryer (mounted on simplex only, shipped loose for duplex)
- Desiccant air dryer (mounted on simplex only, shipped loose for duplex)
- Vibration mounting pads

Dimensions				
Model	Dim. A	Dim. B	Dim. C	Outlet
STED0755	47"	82"	58"	3/4"
STED0755HP	47"	82"	58"	3/4"
STED10B5	47"	82"	58"	3/4"
STED10B5HP	47"	82"	58"	3/4"



Enclosed Scroll Air Compressors										
Model	HP ¹	SCFM @ 100 PSIG	Maximum Pressure (PSIG)	Tank Size (gal)	BTU/Hr	dB(A) Level	System F.L.A.			System Weight (lbs)
							208V	230V	460V	
STED0755	7.5 (2)	46.2	116	200	38,200	68	40	36.6	18.4	1,410
STED0755HP	7.5 (2)	34	145	200	38,200	68	40	36.6	18.4	1,410
STED10B5	10 (2)	62.4	116	200	50,800	69	55	50	25	1,450
STED10B5HP	10 (2)	49	145	200	50,800	69	55	50	25	1,450

Notes:

- 1 – Actual BHP is less than rated name plate. Contact Powerex for BHP rating.
- 2 – 3 Year Limited Warranty.
- 3 – HP after a model number indicates high pressure model. SCFM for high pressure units are @ 145 PSIG.