GENERAL
The Powerex Instrument Air System provides high pressure clean dry air for medical support purposes. The system is designed in accordance to NFPA99 section 5.1.3.8 Instrument Air Supply Systems.

INSTRUMENT AIR SYSTEM
The package shall include multiple air compressors and associated equipment, one ASME tank, one medical desiccant air treatment center, and one medical control panel. The only field connections required will be system discharge, power connection at the control panel, and between-skill air and power connections. All interconnecting piping and wiring shall be included and operationally tested prior to shipment. Vibration isolation pads are included with the system.

COMPRESSOR PUMP
The compressor shall be belt-driven reciprocating, Two-Stage, single acting, air-cooled, oil pressure lubricated design. Each compressor shall be capable of compressing air to a maximum pressure of 250 psig. Crankshaft and connecting rod bearings are pressure lubricated for extended life. Piston rings shall include two compression rings, and one oil control ring to provide excellent oil control and high efficiency air delivery. Single-unit disc type valves provide low lift and long life. Discs are made of corrosion resistant Swedish steel. Intercoolers are provided between compression stages for maximum efficiency. Each compressor shall include a discharge check valve of brass construction, an ASME safety relief valve, discharge flexible connectors, a start-up unload system, an isolation valve, an air cooled aftercooler, and a moisture separator with automatic drain.

MOTORS
Each compressor shall be belt driven by a 1750 RPM, ODP NEMA construction motor with a 1.15 service factor rating. OSHA approved belt guards shall be provided.

AIR RECEIVER
The system shall include a ASME rated air receiver rated for 250 PSI MAWP. The tank shall be equipped with a pressure gauge, safety relief valve, block and by-pass valves, and condensate sight gauge and automatic electronic tank drain with manual override. The receiver shall be internally lined with an FDA approved material for corrosion resistance.

CONTROL PANEL
The NEMA 12 control panel complies with NFPA 99 requirements for Medical Air. The controls operate the duplex, triplex or quadplex, 250 psi capable air compressor modules as needed in response to a pressure signal from a pressure transducer located in main system pipeline near the air receiver.

The pressure signal is input to the programmable logic controller (PLC) and it is programmed to operate one, two or three compressor modules as needed to maintain the system minimum pressure of 200 psig. A touch screen interface displays system status and alarm conditions. A reserve pump in use alarm circuit provides local in use indicator light. An acknowledge function is provided for air demand increases beyond the system rated capacity or the conditions. A reserve pump in use alarm circuit provides local in use indicator light. An acknowledge function is provided for air demand increases beyond the system rated capacity or the conditions. A reserve pump in use alarm circuit provides local.

DEW POINT MONITOR
The system-integrated hygrometer shall be equipped with an LCD dew point display and high dew point 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 without the need to return the sensor to the factory for calibration.

FILTRATION AND PRESSURE REDUCING STATION
The filtration systems shall consist of 4 stages of filtration, two pressure reducing valves with pressure gauges, and a sample air port. The first stage of filtration shall include dual .01 micron coalescing pre-filters with element change indicators and automatic condensate drains and installed up-stream of the air dryers. The second stage shall include dual 1 micron particulate filters with element change indicators and installed downstream of the air dryers. The third stage shall include dual activated carbon filters. The fourth stage shall include dual .01 micron final filters with pressure drop indicators. A dual set of pressure reducing valves with pressure gauges shall be installed downstream of the final filters. Each filter/dryer/regulator assembly shall be plumbed with bypass valves to enable service without disrupting air flow to the facility.

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**Instrument Air Multiplex Systems**

Rev. 7/30/12

<table>
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<th>MODEL</th>
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**Instrument Air Systems**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>HP</th>
<th>SCFM @ 200 PSIG¹</th>
<th>Tank Size (Gal.)</th>
<th>BTU/HR²</th>
<th>dB(A) LEVEL³</th>
<th>SYSTEM F.L.A.</th>
<th>SYSTEM WT. (LBS.)</th>
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Notes:
1. SCFM values @ 200 PSIG are shown with one compressor in reserve.
2. BTU/HR Levels are shown with one compressor in reserve.
3. dB(A) is shown with one compressor in reserve.
4. 3 Year Limited Warranty

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### Instrument Air Multiplex Systems

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Top View
24” Minimum Clearance
for ease of Maintenance

Electrical Panel Opening

#### Instrument Air Systems

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