



Medical Air & Vacuum System Specialists

MEDICAL AIR TREATMENT SYSTEM WITH DESICCANT AIR DRYERS 3DDF10-37

The EMSE CORPORATION Duplex Desiccant Air Dryer System is a completely packaged NFPA 99 and NEC compliant assembly featuring redundant twin tower desiccant air dryers with integral purge saver control, pre-filters, after-filters, line pressure regulating valves, safety relief valves, dew point monitor, CO monitor and a test port.

All components are pre-piped and pre-wired to single-point service connections in the field to eliminate field assembly errors, simplify installation and reduce installation costs. The only field connections are air intake, air discharge and power connection. All interconnecting stainless steel/brass piping as well as wiring is completed and operationally tested prior to shipment.

Each unit consists of two identical banks of air treatment equipment, piped in parallel and provided with valves to by-pass either bank for filter element or desiccant replacement, maintenance and repair work while still treating medical compressed air through the other bank without any sacrifice in air quality. Each bank consists of three stages of treatment.

The first stage is a prime efficiency coalescer with particle removal down to 0.01 micron with 99.9999% retention. This filter removes aerosols and solid particles. The filter is equipped with electronic drain and element change indicator.

The second stage is a desiccant heatless air dryer. Each dryer is sized for 100% of the system NFPA peak calculated demand. The dryer is designed to provide a maximum dew point below the frost point of 0°C (+32°F) per NFPA 99. The dew point is attained by directing the flow of saturated compressed air over desiccant which is contained in two separate but identical "twin" towers. As the saturated compressed air flows through the "on line" tower, its moisture adheres to the surface of the desiccant. A solid state controller automatically cycles the flow of compressed air between the towers. While the "on line" tower is drying, the "off line" tower is regenerating. Regeneration is the process by which moisture accumulated during the "on line" cycle is stripped away during the "off time" cycle. As low pressure dry purge air flows gently through the regenerating tower, it attracts the moisture that had accumulated on the surface of the desiccant during the drying cycle and exhausts it to atmosphere. Built-in purge saver control will automatically minimize and adjust the amount of purge air to match the variable air flow.

The dry compressed air is discharged from the "on line" tower into the third stage.

The third stage is a 0.5 micron prime efficiency particulate afterfilter with element change indicator. The after filter element provides high particle retention, low pressure drop and long element life.



Downstream pressure regulators equipped with pressure indicators will maintain constant delivery pressure of 55 PSIG plus or minus 10% (field adjustable).

Digital dew point and CO monitors with alarm set points at 39°F and 10 PPM are provided. A "demand check" for maintenance is included per current NFPA 99 for each instrument.

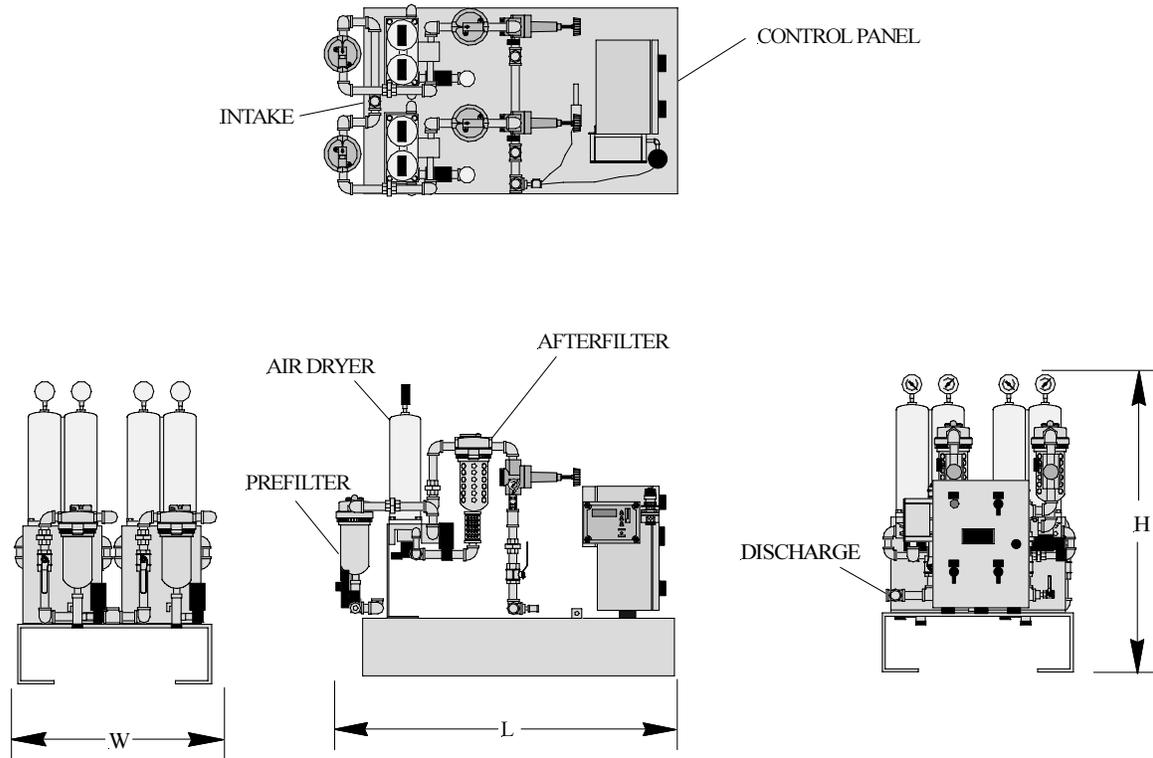
The system includes a UL labeled control panel in a NEMA 12 enclosure. The panel includes a power "On-off" switch and individual dryer dual control selector switches for "Purge saver" and "Desiccant regeneration". Local audible and visual alarms are provided per NFPA 99 for high dew point and high carbon monoxide. The alarms include indicating lights as well as the horn. The audible alarm can be acknowledged with the "Silence" button. The visual alarm will remain energized until the problem has been corrected. Dry contacts for connection to the master alarm are provided for "high dew point" and "high carbon monoxide" as well as "dewpoint monitor failure" and "carbon monoxide monitor failure".

The Medical Air Treatment System and its component parts will undergo a complete electric and pneumatic test prior to shipment.

The Medical Air Treatment System is guaranteed by the manufacturer for a period of 12 months from the date of start-up or 18 months from the date of shipment (whichever comes first) against defects in design, materials, or construction.

The service of a factory trained representative will be available at the jobsite to check installation, start-up and instruct operating personnel in proper operation and maintenance.

MEDICAL AIR TREATMENT SYSTEM WITH DESICCANT AIR DRYERS 3DDF10-37 LAYOUT AND PERFORMANCE TABLE



Model Number	Capacity at 100 PSIG/100°F	Voltage	In/out conn.	L	W	H	Weight
3DDF10	10	1-60-115	1/2"	34	24	37	180
3DDF18	18	1-60-115	1/2"	34	24	37	185
3DDF30	30	1-60-115	3/4"	34	24	37	195
3DDF37	37	1-60-115	3/4"	34	24	37	200

Note: Maximum inlet temperature: 100°F