

# HB HEATED BLOWER DESICCANT AIR DRYER

HB150 – HB8000

Industrial Technologies  
Davidson, NC 28036

Date: 11-Jan-2011  
Cancels: All Previous

---

## ENERGY MANAGEMENT SYSTEM (EMS)

The normal cycle, or Fixed Cycle, of an HB heated blower desiccant dryer is 8 hours with each desiccant chamber in service for 4 hours followed by a 4 hour regeneration cycle. The dryer will be sized to deliver a -40° C/F PDP for the entire 8 hours. The dryer will be sized based upon an inlet flow at a maximum temperature and minimum pressure. If inlet flow is less, inlet temperature is less or inlet pressure is higher than the dryer's design point, the moisture loading to the dryer is less than the capacity of the dryer. As a result, the desiccant bed will be underused and regenerated before required, thereby wasting energy.

If the dryer will be operated at less than 100% duty at any time, then an Energy Management System (EMS) is recommended to reduce operating cost. The Energy Management System uses a precision dew point sensor to measure the outlet pressure dew point of the dryer and adjust the operation of the dryer to produce a constant outlet dew point.

Prior to the start of each regeneration cycle, before chamber depressurization, the EMS system will determine the dew point of the system by measuring the pressure dew point of the outlet air. Should this reading be drier than the EMS set-point, the regeneration cycle will be delayed. While in the EMS mode the system will continue to dry air through the same chamber as long as the dew point is better than - 40 PDP. Once the dew point increases to the EMS set-point, the dryer regenerating tower will depressurize and the dryer will revert to the normal drying and regeneration cycle.

In addition, the EMS option includes a temperature switch that senses the temperature of the purge air exhaust and stops the heater upon complete regeneration. This provides added energy savings during periods of partial load.

Features of the Energy Management System:

- Eliminates waste of compressed air

- A precision ceramic sensor measures outlet dew point.
- Dew point reading communicated via dryer controller..
- Field adjustable set points of the desired dew point and high humidity alarm.
- RS-232C Computer Interface installed.
- Dryer operation for Fixed cycle / EMS mode selected via controller. Dryer can be operated in fixed cycle while hygrometer is serviced.
- High Humidity Alarm
- NEMA 4 Enclosure