



*The choice for
desiccant dehumidification*

Typical Unit Specification

Bry-Air VFB Cassette

- A. Scope of Work
- B. Dehumidifier
- C. Filters
- D. Volume Dampers
- E. Electrical
- F. Fans
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A. SCOPE OF WORK

The air handler manufacturer shall furnish, install and place in operation, acceptable to the engineer, all dehumidifier sections with flexible connectors, filters, volume dampers, control panel, and all necessary controls for proper operation of the system, as shown on contract drawings and as specified herein.

The dehumidifier section shall be arranged to provide continuous dehumidification with constant outlet temperature and humidity for a given inlet condition. The unit shall be a two compartment type using Brysorb Plus fluted desiccant media with process and regenerative sections.

Dehumidifier cassette unit shall be as manufactured by Bry-Air Inc.

VFB Series "Model VFB [REDACTED]" as shown on the plans.

B. DEHUMIDIFIER

Dehumidifier section shall be capable of sustained operation of either process air flow or react air flow without energized reactivation heat for prolonged periods of operation without damage to the humidity transfer media.

The dehumidifier cassette shall be a fully automatic factory assembled unit, complete with desiccant rotor, desiccant rotor drive assembly, reactivation heat source, reactivation inlet filters, reactivation fan and motor, access panels, volume damper, [REDACTED] (dust-tight or weatherproof) electrical enclosure, and all component auxiliaries as recommended by the manufacturer for safe, unattended automatic operation.

Unit casing shall be constructed of continuously welded 0.125" thick aluminum to insure air and vapor tight construction. Air plenums and ducts shall be constructed of .080 or .125 solid welded aluminum. Easy-to-remove 0.125" thick aluminum access panels with vapor proof gasketing shall allow for simple service and inspection. Process insulation to be foil faced polyisocyanurate foam with an insulating R-value of not less than 6.5 per inch of thickness. Reactivation insulation shall be high temperature glass fiber with foil liner.

The unit shall have weather and U.V. resistant paint over the exterior for corrosion protection. Independent pressure gauges for indication of process and reactivation air flow rates shall be included. Gauges shall have the normal operating range of the unit at approximately the midpoint of the gauge scale.

Unit shall not require field piping, desiccant charging, pneumatics, or field erection of fans unless

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specifically requested by the engineer. Field connection of the utilities shall be performed by the installation contractor.

The dehumidifier rotor shall consist of high efficiency Brysorb Plus desiccant media mounted on a horizontal fixed shaft arrangement. The rotor media shall be comprised of "in situation formed" silica gel with fiberglass substrate. Asbestos or ceramic paper substrates and loose desiccant are not acceptable. The media shall be adsorbent, non-toxic, non-corrosive and non-flammable with the desiccant uniformly and permanently dispersed throughout the matrix structure to create a homogenous media. The desiccant media shall not be coated or bonded to the substrate.

The Brysorb Plus desiccant media shall rotate on integral long life sealed bearings supported by a secure fixed center shaft for simplified removal. The center shaft shall be held captive to, and supported by, a rigid horizontal support member to assure straight and true rotation of the desiccant media. Mounting of the desiccant media by any means other than center shaft support shall not be acceptable. No lubrication shall be required during the life of the rotor.

An observation window shall be provided to permit visual inspection of the rotor and the drive system while the unit is in operation. Reactivation air fan shall be factory mounted on the dehumidifier. The reactivation air fan shall be arranged so as to provide counter flow process and reactivation air streams.

The process and reactivation sections shall be divided by seals designed for long life. The positive sealing arrangement between process and reactivation sections shall permit independent airflow and shall not require balancing of process and reactivation airflows within the unit. High quality silicone rubber bulb seals shall be utilized to positively seal airstreams at up to 8" w.c. differential pressure. Seals shall be high temperature silicone rubber extrusions with PTFE composition coated face for low friction, durability, and long life. Seals shall be removable without the use of any tools and access shall be provided to facilitate inspections. Any system that requires the use of tools for seal removal shall not be acceptable. The perimeter seal shall not come into contact with the face of the media for extended life.

Starting and stopping of the unit or performance modulation shall be accomplished by a contact closure signal furnished by the air handler manufacturer with provisions made for its connection on the terminal strip of the control panel, or termination as specified by the engineer.

Reactivation heat for the dehumidifier shall be supplied by [REDACTED] (direct fired gas, direct fired propane, electricity, or steam) and installed with filters as detailed in the plans.

The dehumidifier shall have [REDACTED] CFM process air capacity. Reactivation air capacity shall be [REDACTED] CFM. The reactivation air fan shall have external static pressure of [REDACTED] " of WG. Dehumidifier shall be capable of removing [REDACTED] lbs/hr of moisture per hour with inlet air condition of [REDACTED] degree F, dry bulb temperature with [REDACTED] grains of moisture per pound of dry air.

C. FILTERS

All air entering the dehumidifier must be filtered. Unless otherwise specified, filters shall be 2" deep disposable with minimum 30% efficiency and of a size and capacity as recommended for air volumes shown. Filters shall be installed for removal from side of ductwork.

D. VOLUME DAMPER

The volume damper on the reactivation fan outlet on the dehumidifier shall be installed at the

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factory. The damper shall be single blade or opposed multi-blade type with locking quadrants. The damper shaft exposed at the quadrant shall be notched to indicate position of damper blade(s).

E. ELECTRICAL

The electrical characteristics of the dehumidifiers shall be as shown in the schedule on the contract drawings. Unit shall operate on [REDACTED] volts, [REDACTED] phase, [REDACTED] hertz. The control panel shall be factory mounted and pre-wired for the system operation and shall be supplied with panel mounted, through-the-door rotary type main disconnect switch, fuses or circuit breaker branch circuit protection, contactors, starters, control transformer, overload protection, and all necessary components to insure continuous automatic operation. A factory mounted and wired terminal strip shall be supplied within the control panel. Manual hand-off-auto switch shall be provided on dehumidifier panel.

F. FANS

Reactivation air fan and motor assembly shall be factory mounted on a structural support common with the dehumidifier.

G. OPTIONS

1. Double wall construction with all insulation encased
2. Room or duct mounted humidistat
3. Remote mounted control enclosure
4. Hour meter
5. UL / CUL 508A approved control enclosure with label
6. Alarm circuits (rotor drive, high / low reactivation heat, reactivation fan fault)
7. PID or PLC controls
8. High efficiency filters
9. Bypass duct
10. Modulation of reactivation energy for capacity control
11. Face & bypass damper arrangement for capacity control
12. Variable frequency drive for react fan

Note: This document is subject to change without notice.