

# HLA HEATLESS DESICCANT AIR DRYER

## HLA90 – HLA600

Compression Technologies and Services  
Davidson, NC 28036

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Cancels: **All Previous**

### SUGGESTED AIR DRYER SPECIFICATION

#### General –

Compressed air dryer capable of reducing the moisture content of \_\_\_\_\_ scfm air at \_\_\_\_\_ psig and 100°F inlet air temperature to maintain a pressure dew point of the dried air at -40°F (or -100°F)

Dryer shall employ twin-drying towers comprising ASME code welded pressure vessels, spherical-particle, non-corrosive activated alumina desiccant, and desiccant fill and empty ports. A continuous supply of dry air shall be provided by the automatically cycled operation of the drying vessels on a fixed cycle, including drying, pressure stabilization and regeneration. Automatic cycling shall be controlled by an electronic controller. Airflow shall be directed through alternate drying vessels by pneumatically operated valves which require no lubrication. Dryers shall use high performance, stainless steel angle seated valves.

Fire rated relief valves shall be located on each pressure vessel.

The purge air control system shall include mufflers to reduce the noise level of the purge air exhaust to within OSHA standards. No electrical or other energy shall be supplied to the dryer from an outside source for reactivation. Total electrical requirements shall not exceed 5 Amperes at 110, 115 or 120 Vac. The dryer shall include, as a minimum, gauges showing pressure in each drying tower, a gauge showing purge pressure, a manual purge adjustment valve, UL type 4 PLC with a keypad & screen, and a light indication panel that indicates the status of the dryer including ON/OFF & tower status.

The PLC controller shall incorporate a user display screen that will provide information regarding dryer status (ON/OFF), dryer step sequence information, operating hours for various components (including main flow & purge valves), alarm status & notification, and maintenance information. The PLC shall be provided with RS485 communication as standard.

#### EMS Option –

As an option, the dryer can be equipped with an Energy Management System (EMS): a hygrometer sensor located downstream of the desiccant bed will determine the moisture content of process air and the PLC controls will correspondingly modulate the dryer cycle. At the end of the purge and repressurization cycles, if the dew point is below the set-point value (adjustable through the controller), the purge exhaust valves will remain closed and no purge air will be consumed. The dryer will continue to operate through the drying cycle in order to maintain heat of adsorption within both desiccant beds. When the dew point reaches the EMS control setpoint, the dryer will revert to fixed cycle with the last regenerated bed switched for online drying. If the EMS set-point is satisfied for more than a time period of eight hours, the PLC will revert to a fixed cycle for a period of 60 minutes in order to preventing the desiccant beds from becoming overloaded during rapid changes in compressed air demand.

The dew-point value, EMS status (enabled or disabled) function shall be displayed on the PLC along with the outlet dew-point value.

The PLC controller shall display shall include the dew-point value, system status, enable / disable function, cycle point indication, ability to facilitate adjustment of the set-point, and a common alarm dry contact.

Dryer shall be Ingersoll Rand Model HLA\_\_\_\_\_.

#### Fail to Shift Option (w/ Muffler Clog Alert)

As an option, the dryer can be equipped with a fail to shift option that utilizes a pressure transducer to constantly monitor the pressure of each tower during the operation of the dryer. The purpose of this function is to provide an alert as a muffler becomes clogged or to stop the operation of the dryer if the appropriate pressure values are not maintained during dryer operation that would indicate an operational fault condition. The pressure values will be displayed on the

controller screen for each step and the control program would activate an alarm contact in the event of a fault condition.

#### Prefilter and Afterfilter –

A prefilter shall be included for installation upstream of dryer to remove oil and liquid water down to 0.01 mg/m<sup>3</sup> content at 21°C (0.008 ppm W at 70°F). Prefilter shall be capable of removing solid particles as small as 0.01 micron. Prefilter shall employ a no-touch replaceable element. For the HLA90-HLA600 models, filters shall include an automatic drain valve for periodic removal of separated contaminants.

Prefilter shall be Ingersoll Rand Model \_\_\_\_\_.

An after-filter shall be included as standard for installation downstream of the dryer to remove particulate matter. Afterfilter shall be capable of removing solid particles down to 0.1 micron. Afterfilter shall employ a no-touch replaceable element. For HLA600 and smaller dryers, filter is equipped with a dual scale differential pressure gauge for indication of element replacement.

After-filter shall be Ingersoll Rand Model \_\_\_\_\_.

#### Filter Drain Options

As an option, an electronic no-air loss drain with a fault alarm can be factory installed on the pre-filter & after-filter. A drain fault would generate an alarm condition for the controller and trigger a remote alarm output.