

Earthsafe Systems Inc.
Quick Specification
UM3CH DEF Urea Chiller / Heater

PART 1: GENERAL

1.01 System Description

- A. Provide the Earthsafe UM3CH DEF Urea Chiller Heater to maintain temperature in the DEF storage tanks between 25 to 75 degrees Fahrenheit.
- B. The system design shall include allowances for heat gain / loss in piping systems where circulation systems are used to maintain piping temperatures. The chiller / heater unit shall be independent of the pipeline circulation pump system to point of use.
- C. The manufacturer shall have a minimum of 5 years experience in DEF Urea heating and cooling systems for critical applications

PART 2: PRODUCTS

2.01 Equipment

- A. The system shall circulate DEF Urea from the storage tank through a heat exchanger to maintain the required temperature in the storage tank. The system shall include an on-board chiller and heater sized to provide the required load.
- B. The system shall have all 304 stainless steel wetted parts and shall be enclosed within a 304 stainless steel weatherproof enclosure. The enclosure shall have heating and cooling devices to maintain the internal operating environment.
- C. The system supplier shall provide 2 each temperature transmitters for field installation into each DEF Urea storage tank, and connection to the system controller.
- D. The system controller shall be a UL508 listed controller with PLC and 7 inch color touch screen. The controller shall indicate all operating parameters including temperature readings for ambient, storage, inlet, and discharge. The controller shall include a MODBUS interface and 4 programmable dry contact relays for connection to external systems.
- E. The system shall include duplex DEF Urea positive displacement transfer pumps. The pumps shall be a magnetic drive and rated for continuous operation. The pumps shall alternate on a minimum weekly cycle and the controller shall record operating hours. Pumps shall include inlet and outlet gauges, pressure transmitters, and flow sensors for monitoring by the system controller.
- F. The DEF Urea heat exchanger shall be all 304 stainless steel construction. The compressor shall consist of a rotary compressor, air cooled coil, fan, reversing valve, accumulator, metering device and internal controller.

PART 3: EXECUTION

- A. Install the DEF Urea chiller heater system in accordance with the manufacturers written instructions.
- B. Piping between the unit and the storage tanks shall be minimum 1 inch 304 stainless steel pipe or tubing. Piping shall be flushed clean prior to connection to the unit. Piping shall be insulated and heat traced where required.