

LECTRODRYER

HYDROGEN COOLED GENERATOR AUXILIARY EXPERTS



BAC-50

Automatic Continuous Hydrogen Dryer



On-line or Off-line, Lectrodryer has a Hydrogen Dryer that does it all.

* **Automatic Regeneration** * **Increase Purity** * **Hydrogen Savings** * **Removed Water Measurement** *

IMPROVE GENERATOR PROTECTION

Prevent moisture causing damage to generator internals and stress corrosion cracking propagation in retention rings. Increase purity and improves cooling.

AUTOMATIC & CONTINUOUS OPERATION

Automatic operation reduces maintenance, minimizes operator involvement. Continuously dries even during turning gear.

NO HYDROGEN VENTING

Adsorption and reactivation are accomplished at generator gas pressure, with no venting or purging for reactivation.

EASILY PAYS FOR ITSELF

Reduced windage losses, no operator regenerations and lower Hydrogen usage provide ongoing savings. The prevention of just one moisture caused outage will more than pay for the cost of the BAC-50.

INTRODUCTION

Lectrodryer has solved the problems associated with outmoded generator hydrogen dryers with the BAC-50 continuous operating automatic twin tower dryer.

Whether you're operating or offline, drying remains constant. The regeneration chore is eliminated. The Lectrodryer BAC-50 does it all for you, automatically and without operator involvement. The BAC-50 takes the risk out of moisture control and guards against damage causing moisture which can lead to costly repairs, down time, and losses in efficiency.

Lectrodryer dual tower hydrogen dryer utilizes the latest technology. Unlike single tower dryers, BAC-50's advanced design offers greatly improved generator protection by continuous drying of the gas.

DESCRIPTION

The type BAC-50 Lectrodryer is a dual tower unit for the continuous drying of hydrogen gas used in cooling turbine generators. The unit utilizes regenerative type desiccant and is fully automatic in operation. The unit is used worldwide and meets all known applicable specifications including ASME, PED/ATEX, IECEx, CCC, and GOST. The BAC-50 is heat reactivated with high efficiency embedded electric heaters operating from seven standard voltages, and NEMA 4 purged electrical enclosures to meet C11, Div 2, Gr B area.

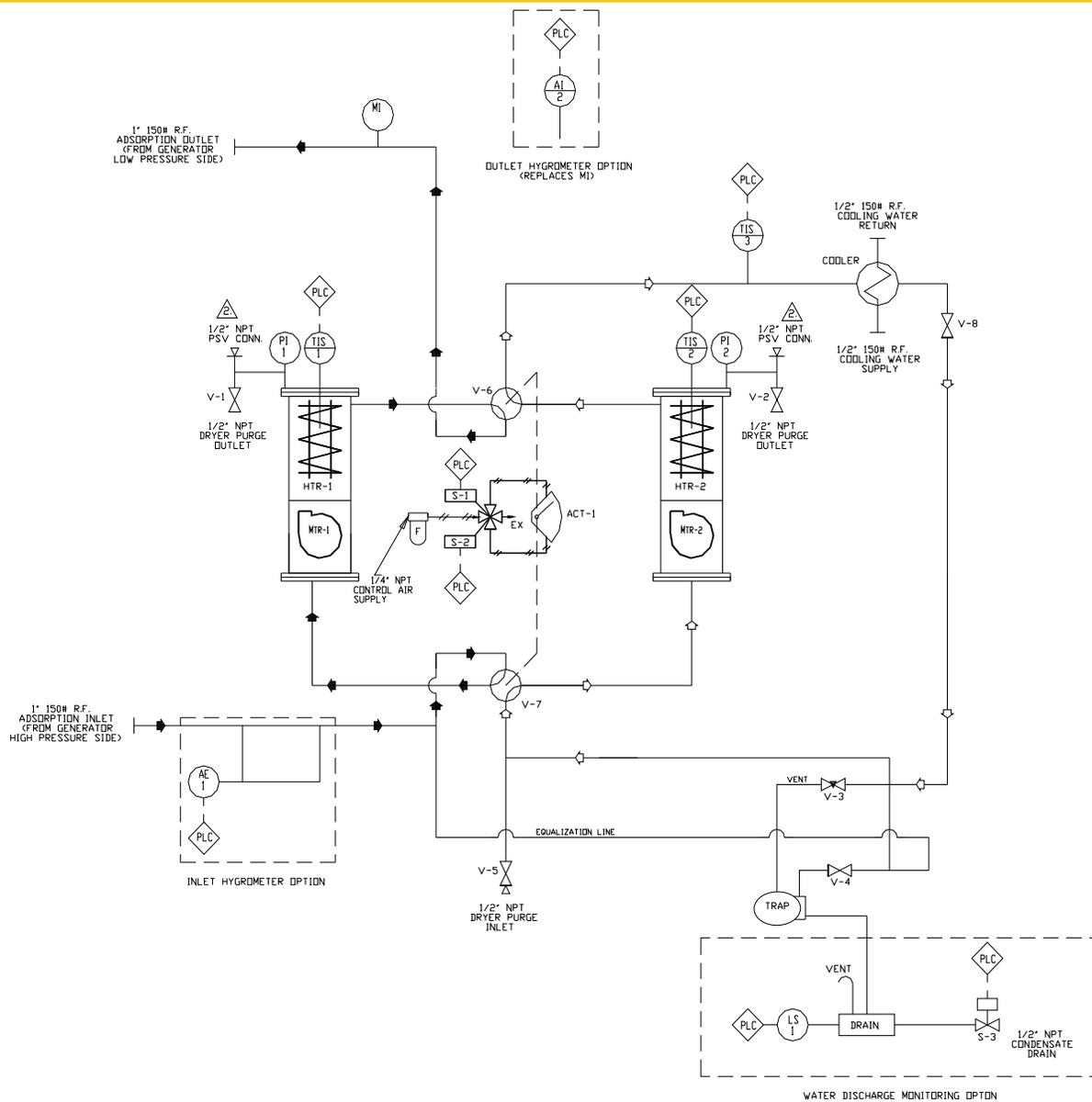


Interlocked non-lubricated 4-way valves provide trouble-free switching with a generously sized double acting actuator. Reactivation is accomplished at operating pressure with a closed circuit system with **no hydrogen purge loss** or Infiltration of air into the system.

This system also allows the continuous monitoring of the volume of water removed from the generator. The BAC-50 Lectrodryer generates an adsorption flow and a reactivation flow simultaneously. Flow can be continued through the generator and dryer even though the turbine may be on turning gear.

The BAC-50 Lectrodryer features ASME or PED carbon steel pressure vessels with embedded electric heater in each adsorber vessel with over temperature protection, initial charge of desiccant, two 4-way non-lubricated plug valves with double acting actuator and solenoid valve controls, pressure gages, 110 volt controls with control transformer, PLC, heater contractors, on-off switch, and a HMI (Human Machine Interface) for information on dryer status, sequence activity, alarms and maintenance information.





FEATURES

- No Hydrogen purging
- Fully automatic - no manual regeneration
- Integral blowers - maintain positive flow even during turning gear
- Closed circuit reactivation with welded piping, no venting from valves or other Hydrogen losses
- Internal heaters - efficiently provide even heat distribution
- Dual tower desiccant beds— provide continuous drying
- Non- lubricated valves- no maintenance
- Easy maintenance electrical enclosures that meet area requirements with a full PLC and operator interface
- Protective cage enclosure - prevents tampering, protects operating personnel
- Over-temperature protection-extends heater life

- Approximate weight: 1,800 pounds / 816 kgs
- Dimensions (not crated): 43"W x 36"D x 78"H / 110cms x 92cms x 199cms

OPTIONS

- Inlet and outlet dewpoint monitors with 4-20 ma outputs and dual alarms. Readings are taken at pressure to ensure accuracy.
- Oil vapor pre-filter prevents contamination of desiccant bed.
- Water Discharge Monitoring measures the water that is being discharged by the generator through the dryer. This could be an early indicator of seal oil moisture problems, or coolant leaks and changes within the generator.
- DCS control and ETHERNET connection.



LECTRODRYER POWER SECTOR PRODUCTS

Gas Optimization Systems

Incorporates and unifies typical generator auxiliaries:

- Dryer
- Purity Equipment
- Gas Control Piping
- Dew point Instruments
- Continuous Generator Monitoring



The skid can be standard or custom designed.

Fast Degas CO₂ System

- Ability to deliver 370 SCMh (220 SCFM) of CO₂ to generator
- Helps reduce the time and cost involved during outages
- Safety benefit by rapidly blanketing the generator in emergency situations
- Optional ATEX certification
- Can be purchased as a stand alone system, with a BAC-50 hydrogen dryer or as a part of the Gas Optimization System.



Landfill Gas Compression System

The Lectrodryer Landfill Gas Compression System is designed to compress, clean, and deliver a volume of landfill gas at a specified pressure and quality. The LGCS strives for efficiency, one that minimizes initial cost and seeks to operate at the lower possible horsepower.



Lube Oil / Air Tanks

Lectrobreather tank vent dryers prevent atmospheric moisture from entering storage during "breathing" due to ambient temperature changes and draining periods. Valuable oils and chemical solutions remain free of water contamination.



Lectrodryer Filters

The Lectrodryer Oil Vapor pre-filter prevents (OVF-6) prevents contamination of desiccant BAC-50 bed. The Lectrodryer type SF and type F filters provide high efficiency filtration with ten sizes available in each type for flows to 8400 SCFM, larger sizes available on application. Both types have a high level filter efficiency of 99.985% retention (0.015 DOP penetration) for filtration to a 0.3 micron particle size and smaller.



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P.O. Box 2500, Richmond, KY 40476-2602 (U.S.A.)

Phone: +1 (859) 624-2091 / USA Toll Free: 877-403-5215 / Fax: +1 (859) 623-2436

Website: www.lectrodryer.com / E-mail: info@lectrodryer.com