

The Automated Motor Winding Dryout System



Many electric motors inside or outside a plant have a history of not meeting their Polarization Index (PI) Acceptance Criteria, especially with the older insulation systems found in these motors. Most of these test failures can be attributed to moisture intrusion. Before a motor can be returned to service, or before a high potential test can be performed, the windings usually require a dryout of the moisture to minimize premature insulation failure.

The conventional process of drying out motor windings is very tedious, time consuming and inefficient. It usually involves circulating current utilizing welding machines, which are not designed for that task. This can

be a very labor-intensive process, and cause winding and insulation damage in the motor as well as damage to the welding power supply.

Cost Efficient Solution

The Series 1200ADM from Mannings USA addresses all aspects of this problem. This Automated Motor Winding Drying Machine (ADM) provides for fully automatic temperature control in the motor windings. It has operator adjustable current limiting, temperature rate-of-change to dryout temp and duration to be held at dryout temperature. It also provides for fully automatic switching of current through the windings assuring uniform heating of all windings.

Controlled Monitoring and Data Recording

This ADM process is continually monitored with pertinent data logged to disk for later analysis and review. A Time/Temperature trend chart is always displayed on the screen or historical data can be called up for review. Data for any selected period can be downloaded from this screen to a floppy disk for historical record keeping and for review in a standard spreadsheet application.



The 1200 ADM incorporates a touch screen Pentium computer in the operator's console that provides the Man/Machine interface, allowing an operator to change modes of operation or significant parameters in a given mode. Full password protection is provided to prevent any unauthorized or inadvertent changes.

System Benefits

- Reduced Man-Hour Requirements for Motor Winding Dryout
- Provides Better Process Control of Motor Dryout
- Provides an On-Site Dryout Process after Stator Winding Steam Cleaning
- Reduces Cure Time of End Winding Re-treatments
- Reduces Motor Related Outage Time Requirements
- Reduces Personnel Hazards and Radiation Exposure
- Reduces Risk of Equipment Degradation
- Cures Generator Field Windings after On-Site or Shop Rewinds
- Keeps Generator Field Dry While Performing Stator Work During Outage
- Cures Hydro Pole Piece Windings After Refurbishment and Re-insulating
- Radio Modem Transceiver, Permit System Operation when mains disconnect is Remote from Motor. Also provides positive isolation of imbedded T/C's from the system.

Safety Features

- Internal Breaker Protection.
- Automatic Shutdown on Loss of Temperature Signal.
- T/C-RTD Scanner Selects Hottest of 3 Connected Sensors to Control Process.
- Rotating Strobe Light Indicates Mains Power Applied to Primary Power Transformer. The Computer Screen will flash a warning and Strobe Extinguishes in Event of Anomaly.
- External Panel Electrical Interlock System Prevents Application of Power when Panels are not in place.
- Positive Mechanical Breaker Selection Feature Permits Operation of System from either 60amp or 200A Connected Service.
- Software Password Protection Prevents Unauthorized System Parameter Changes.
- Connected Windings Grounded between Switching to Eliminate Residual Current/Voltage.
- Switching Delay Feature Prevents Operations of Contactor When Powered.

Proven Field and Shop Uses

- Efficient Drying of Motor/Generator Windings up to Several Thousand Horsepower.
- Expedited Endturn Re-Treatment Resin Cure on Motors/Generators.
- Curing of B-Stage insulation and Hydro-Electric Generator Pole Pieces.
- Even Heating of Windings to Perform Quality Checks by Winding Connections via Thermography.
- Main Generator Rotor Dryout and Insulation Cure.
- Programmable DC Current Source, 0-1200A.
- Programmable DC Voltage Source, 0-300V.

Operating Modes

- 1. Fully Automatic Motor Winding Current Control.**
Auto-Sequencing/ Temperature Feedback/ Control to Profile.
- 2. Fully Automatic.**
Auto-Sequencing/ Temperature Feedback/ Control to Selected Setpoint Temperature.
- 3. Fully Automatic.**
Auto-Sequencing/ No Temperature Feedback/ Operator Controls Output Current.
- 4. Semi Automatic.**
Non-Sequencing Single Phase (2-Wire) as in #1.
- 5. Semi Automatic.**
Non-Sequencing Single Phase as in #2.
- 6. Semi Automatic.**
Non-Sequencing Single Phase as in #3.
- 7. Manual.**
Voltage Control and Adjustable Voltage Ramp Rate of Change. Current Limit Selected by Operator.
- 8. Manual.**
Adjustable Current Output with Operator Adjustable Ramp Rate of Change.



Mannings USA

Since 1989, Mannings USA has established an international reputation for manufacturing well-designed, functional and reliable products. Along with our field services division, Mannings USA has become a leader in the power generation industries by providing quality products and services worldwide. Mannings integrity coupled with customer satisfaction is the cornerstone upon which this successful business has been built.

For more information on the Automated Motor Winding Dryout Machine or other Mannings products and services, please give us a call today.

Nationwide Locations

Mannings USA · 200 Richards Avenue · Dover, NJ 07801

Tel 800-447-4473 · Fax 973-537-1581

www.manningsusa.com

email: info@manningsusa.com

Houston, TX
Tel 800-989-4696
Fax 281-227-9727

Long Beach, CA
Tel 888-757-4328
Fax 562-491-0254

Martins Ferry, OH
Tel 800-551-5541
Fax 740-633-3937

Hobart, IN
Tel 800-417-6664
Fax 219-947-5867

Lakeland, FL
Tel 800-563-3003
Fax 863-619-7910

Columbus, OH
Tel 800-432-8040
Fax 614-836-0028

Claremore, OK
Tel 800-485-6094
Fax 918-343-0601

Lakeside, MT
Tel 888-920-4328
Fax 406-844-3011

Rock Hill, NC
Tel 803-327-3454
Fax 803-327-5535

San Francisco, CA
Tel 877-641-2018
Fax 707-751-0237

Mobile, AL
Tel 800-892-5152
Fax 334-653-9775

