

Airfield Lighting Insulation Resistance Monitoring System (IRMS)

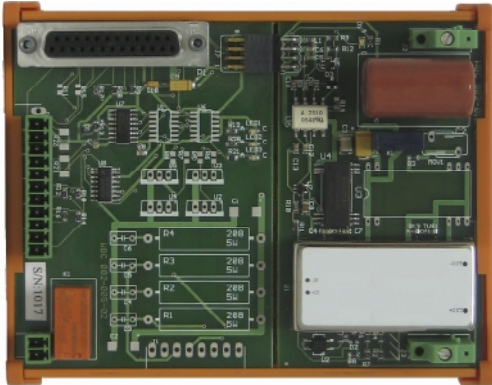


Fig. 1 IRMS Power Supply Circuit Board

System Application

The *Freedom Series*™ IRMS measures cable insulation resistance on a scheduled basis or manually when required by maintenance personnel.

- Automatically monitors for cable degradation and eliminates the risks associated with manually meggering the circuits on a monthly basis as recommended in AC 150/5340-30.
- Provides verification of contractor or maintenance staff connections on the series circuits at the end of each work day.
- An invaluable tool to assist in troubleshooting problems on the series circuit.

Standards Compliance

- FAA Advisory Circular 150/5340-26, Maintenance of Visual Aid Facilities
- FAA Advisory Circular 150/5340-30, Design and Installation Details for Airport Visual Aids.
- ICAO Annex 14, Volume 1, Aerodrome Design and Operations.
- ICAO Aerodrome Design Manual Doc 9157, Part 5.
- Transport Canada Aerodrome Standards and Recommended Practices, Volume 1, TP-312E.
- Canadian Department of National Defence Standards.

Electrical maintenance on the airfield is critical to the continuous operation of airfield lighting equipment. Data obtained from predictive maintenance tools such as the *Freedom Series*™ Insulation Resistance Monitoring System (IRMS) provides valuable information that will:

- Increase personnel safety.
- Reduce maintenance labor costs.
- Improve airfield operation.

Equipment failures airside can be attributed to insulation breakdown of the series circuit cable. Cable insulation is affected by aging, dirt, environmental conditions, and maintenance practices. Unexpected faults due to insulation failures not only affect operations, but also introduce potential risks including expensive equipment damage, shock hazards to personnel and longer repair times. The *Freedom Series*™ IRMS provides continuous monitoring of your airfield infrastructure and helps prevent all of these events from occurring.

Features and Capabilities

- Factory installed or field upgradable option for any Liberty CCR or *Freedom Series*™ Control System.
- Provides accurate readings over the full range from 0 ohms to 2G ohms using a 500VDC charge voltage. Does not require multiple voltages to maintain accuracy.
- Factory calibration eliminates the need for field or self calibrations when measurements are taken.
- Can be used on energized or de-energized 6.6A or 20A circuits.
- Can be used with regulators only, or on circuits with regulators and L-847 circuit selectors.
- Operates in fully automatic scheduled mode or in manual mode. Automatic mode resumes once manual meggering is completed.
- Readings and low megger reading warnings are displayed locally on the front of the regulator or DCMU display.
- User configurable settings on the local display include: Energize time, Frequency of readings, Warning and alarm thresholds, Clear values.

Ordering Information

Type:

FIRM - Freedom Series IRMS

Application:

- A - Upgrade to Freedom Series Ferroresonant CCR
- B - Upgrade to Freedom Series Thyristor CCR
- C - Upgrade to Spirit Series Ferroresonant CCR
- D - Upgrade to Spirit Series Thyristor CCR
- E - Upgrade to Freedom Series L-890 Control System DCMU
- F - Upgrade to 3rd Party CCR

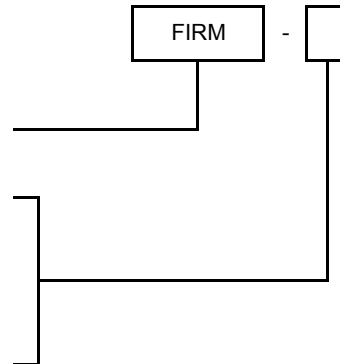


Fig. 2 IRMS Integrated into CCR or DCMU Display

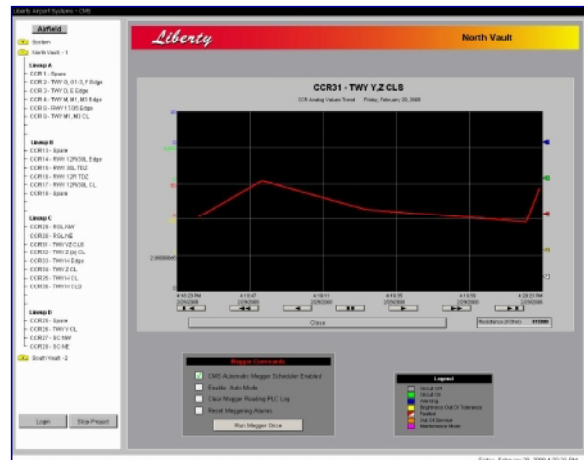


Fig. 3 IRMS Integrated into Freedom Series Control System

Integration Capabilities

The Freedom Series™ IRMS can be integrated with a Freedom Series™ L-890 control system providing the following additional features and capabilities:

- Graphical screens display the circuit names, actual insulation resistance values, completion dates and times of last IRMS readings, time remaining until the next reading, warnings or alarms, and IRMS system status.
- Readings are displayed in trend plot or tabular formats and can be saved for future analysis using Excel or other analysis tools.
- User configurable settings also include: Warm-up, Energize and de-energize times, Desired start time and frequency of readings, Individual warning and alarm thresholds for each circuit, Clear values, Enable or disable each circuit for meggering.



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