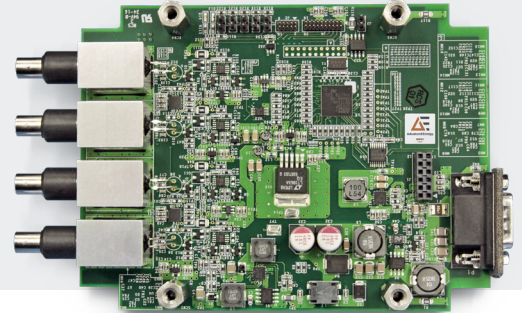


LUXTRON M924 UTILITY MODULE

Fiber optic temperature sensing for utility applications such as real-time transforming winding hot spot monitoring with a temperature range of -30 to 200°C



AT A GLANCE

Temperature Range

-30 to 200°C

Probe Type

Luxtron DipTip and Quality Probes

Accuracy

$\pm 2^{\circ}\text{C}$ (DipTip and Quality Probes)

Noise

$< 0.1^{\circ}\text{C}$, (1-sigma STD @ 1 Hz)

Serial Communication

RS232 and RS485

The Luxtron® m924 Utility FOT Module is a cost effective choice for accurate, real-time transformer winding hot spot monitoring. This module is specifically designed for transformer monitoring system providers or transformer manufacturers desiring to add fiber optic temperature measurement capability to their equipment

PRODUCT HIGHLIGHTS

- 4 channels, expandable up to 64 with RS485 Modbus
- Builds on proven design with thousands of systems installed worldwide
- Backward compatible with Luxtron DipTip and Quality probes for utility applications
- Single PCB design for OEM utility applications
- Probes are immune to electromagnetic interference such as high voltage, RF, plasma, and microwave

TYPICAL APPLICATIONS

- OEM transformer control schemes
- OEM monitoring systems
- Load tap changers
- High voltage transmission lines
- Research and development applications
- Any low or high voltage equipment application

Luxtron m924 Utility Module

OVERVIEW

The utility module is a single printed circuit board (PCB). The m924 Utility Module provides better performance with improved manufacturing, and is designed to replace the Luxtron m600 Utility Module.

The complete m924 Utility solution consists of the electronics module assembly and Luxtron DipTip or Quality Probes, Extension Cables, and Tank Wall Plate. The m924 module offers RS232 with ASCII and RS485 with Modbus digital outputs for integration with standard PC or SCADA systems.

Direct, Accurate, and Real-Time

Conventional winding temperature indicators (WTIs) “infer” the hot spot temperature by measuring the transformer load on a single phase and the surrounding oil temperature, and then apply a model. There can be up to a five-hour thermal lag between actual changes in hot spot temperatures and when they are sensed by a WTI. In addition, testing has shown a 5 to 20°C

difference between the simulated value provided by WTI and what is measured directly with fiber optics. This temperature difference can result in insulation damage and a reduction in transformer useful life.

In contrast, the m924 Utility Module measures the winding hot spot directly and accurately in real-time without models or electromagnetic interference. With instant results, controllers and pumps can take action immediately, preventing transformer asset damage.

Field Proven Fluoroptic Technology

Luxtron pioneered the field of fiber optics in 1978 with our trusted Fluoroptic technology. Thousands of our OEM modules have been installed in various, challenging applications with reliable, repeatable performance.

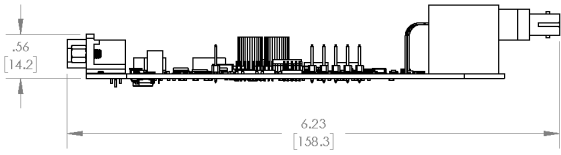
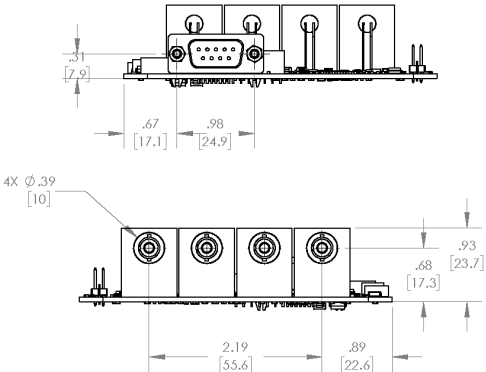
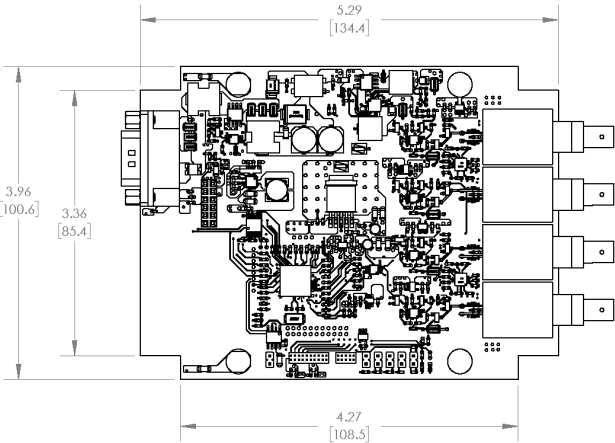
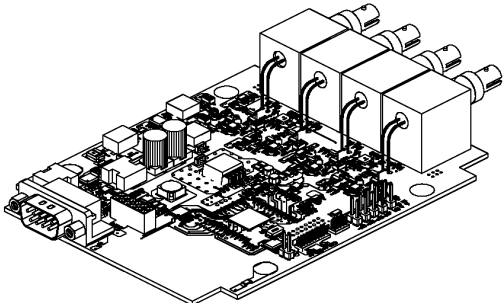
TECHNICAL DATA

Measurement Specifications	
Temperature Range	-30 to 200°C
Sampling Rate	Up to 50 Hz per channel
Channels	4 or up to 64 with RS485 Modbus
Probe Type	Luxtron DipTip and Quality Probes
Accuracy (No Calibration)	± 2°C (DipTip and Quality probes only)
Noise	< 0.1°C, (1-sigma STD @ 1 Hz)
Measurement Resolution (Digital Output)	0.01°C
Average Power	4 W
Input Voltage	5 to 24 VDC + 5%

Environmental Specifications	
Operating Temperature Range	-40 to 85°C
Storage Temperature Range	-30 to 75°C
Relative Humidity	80% RH (max) non-condensing

Communication	
Serial Communication	RS232 and RS485
Protocol	ASCII (RS232) and Modbus (RS485)

DIMENSIONS



Dimensions in inches [mm]



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ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

AE's power solutions enable customer innovation in complex semiconductor and industrial thin film plasma manufacturing processes, demanding high and low voltage applications, and temperature-critical thermal processes.

With deep applications know-how and responsive service and support across the globe, AE builds collaborative partnerships to meet rapid technological developments, propel growth for its customers and power the future of technology.

PRECISION | POWER | PERFORMANCE

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