

Muconics Integrated Fiber Optic HV Monitoring

GENERATOR MONITORING

Monitoring generator condition online can prevent faults that are costly to repair and result in a loss of service or higher fuel consumptions. We help you implement solutions for online monitoring of generators. You can then use information to avoid sudden and costly failures - reduce fuel theft - while optimizing maintenance schedules and extending the life of your generators

TRANSFORMER MONITORING

Transformer monitors include features like output relays, output current loops, data logging, event recording and communication protocols that can be configured to use all active installed input modules

SWITCHGEAR MONITORING

The circuit breaker monitoring system allows, either locally or remotely, and in real time, providing accurate information to maintenance personnel about circuit breaker status, as well as minimizing failure risks and maintenance costs

TECHNICAL SUPPORT

The technical support team is composed of individuals that are familiar with the ins and outs of a device. With this knowledge, they are able to troubleshoot most problems that a user experiences. Information on how to reach technical support is usually provided with the packaged materials included with a device



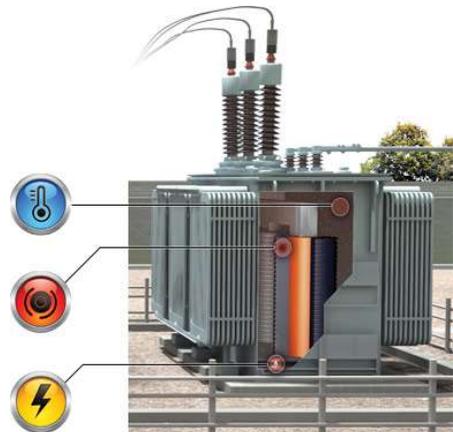
TRANSFORMER WINDING

MuconICs Integration fiber optic temperature sensors are completely immune to in high voltage environments making them ideal for transformer winding hot spot temperature monitoring. MuconICs Integration is developing system and partnering with leading transformer manufacturers that require accurate, real-time, smart grid temperature monitoring of power and distribution equipment.

Fiber optic temperature sensors have been installed in high-voltage oil filled transformers for over twenty years and are now considered the preferred method of transformer monitoring. The benefit that fiber optic sensors offer transmission and distribution (T&D) companies is financially significant. By monitoring temperatures at each transformer winding hot spot, utilities are able to operate the transformer at peak capacity, without extending into overload conditions that can dramatically reduce the life of the transformer. This efficiency both in transmission throughput and service life can translate into savings of tens of thousands of dollars annually, and make direct winding

SERVICE FEATURES AND BENEFITS

The transformer monitoring system is low-cost fiber optic temperature sensing technology makes smart grid transformer temperature monitoring even more compelling. Optical temperature probes are designed from high-dielectric strength materials such as Teflon and polyimide coated silica fiber so that they can withstand long-term immersion in transformer oil and kerosene desorption during manufacturing. A special tank wall feed-through is used to transmit the fiber sensor signal from the optical temperature transmitter to the probe installed directly at the transformer winding hot spot locations. The MuconICs Integration fiber optic has one, two or three channel fiber optic temperature sensor signal conditioners are mounted in an external control cabinet with the temperature outputs fed into real-time monitoring and control software. With MuconICs Integration optical temperature sensors installed, operators can monitor load conditions in real-time, reducing waste energy production and reducing the environmental burden



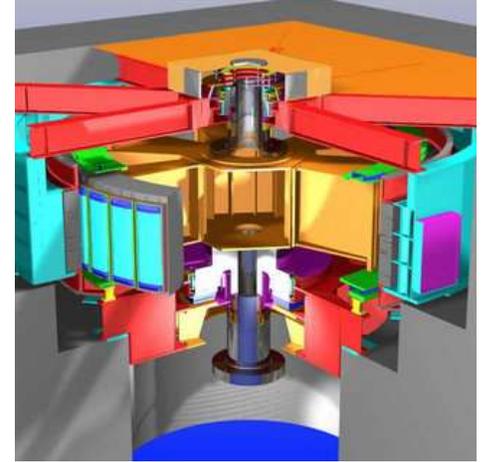
TURNKEY SOLUTIONS

Turnkey project delivery approach offers the Agency a single source, fully integrated and effective way to manage the development, design and construction process. The turnkey delivery team is responsible for overseeing the facility's development at a fixed cost and schedule, eliminating Agency risks of schedule delays and cost overruns (see page 14 for a cost and performance analysis produced by Caltrans). This approach enables Agencies to do more with less staff and to tailor their level of involvement on a specific project to meet their broader organizational need

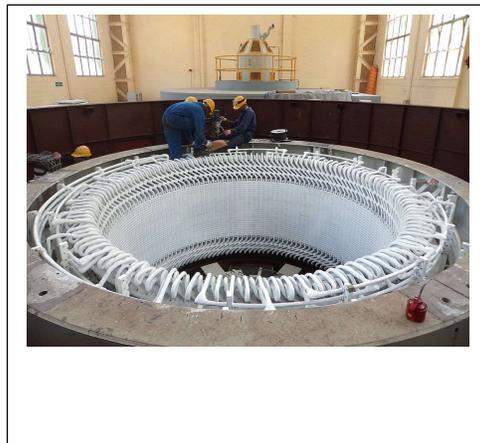
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www.kendalidayaprima.com

GENERATOR WINDING

On-line fiber optic temperature monitoring is now commonplace for medium and high voltage generator equipment. MuconICs Integration fiber optic monitoring offer a cost-effective solution for real-time temperature monitoring enabling equipment to operate at peak performance with extended service life. Fiber optic temperature sensors are now routinely installed into large motor and power generator equipment to provide real-time monitoring and thermal protection of critical stator windings and bearing hot spots. The safe operating temperature of rotating machine windings is limited by the heat which the insulating material can stand before eventual deterioration. This temperature and deterioration rate varies with different classes of insulating materials. Insulation deterioration at a given temperature is approximately proportional to the length of time that the temperature is above the critical threshold. Until recently RTD's (resistance temperature detectors) were typically embedded into windings to provide continuous monitoring. Now, with advancements in fiber optic technology, low-cost fiber sensors are being employed.



Comments



SERVICE FEATURES AND BENEFITS

MuconICs Integration Fiber Optic Monitoring cost-effective fiber optic temperature sensors can be installed where high voltage and alternating electromagnetic fields pose problems for traditional RTD winding sensors. This Integrations fiber sensors can be sandwiched between the windings of motors and generators and allow for continuous temperature measurement to protect insulation and extend maintenance schedules. With this integration system, optical temperature sensors installed, operators can monitor load conditions in real-time, maximizing energy and economical efficiencies. Better energy efficiency is good for business and good for the environment

MODEL	OSENSA-FTX-301-PWR+*)
Number of Channels 3	Deppend to Custommer **)
Output	Analog Output Isolated 4-20mA
Interface	Digital Interface USB & Isolated RS-485
Range	Measurement Range -40°C to +200°C
Resolutions	Resolution 0.1°C
Accuracy	System Accuracy ±1.0°C
Update rate 30 Hz	Update rate 30 Hz
Communications	Protocol Modbus RTU, Half Duplex , Compete with 485 modbus to TCP modbus converter module
Indicator	Status Indication 3 Color Flashing and Solid LEDs
Maximum RH	Operating Humidity 0 to 90% RH (Non-Condensing)
Temperature operation range	Operating Environment -40°C to +65°C
Power Supply	12-24 VDC (2.5W max)
Dimmensions	114mm Tall x 22.5mm Wide x 102mm Long
Mounting	35mm DIN Rail
Configuration	Software OSENSAView or OSENSAView Pro
PROBE MODEL #	OSENSA-PRB-GB3-02M-ST-L
Operating Voltage	Maximum voltage 3 phase 38 Kv
Sensing range	-40 to 200 degC
Accuracy	+/- 1.0 Deg C
Jacket FEP	FEP
Bend radius	8 mm
MODEL EXTENTION OPTIC CABLE	OSENSA-EXT-PF1
CORE/JACKET	1000 um, 23 mm
Probe Style	PRB-MR1, PRB-PF1, PRB-GB3
Max Leghth	20m
Temp ratting	-55 to 85 Dec
Jacket	Nilon
Bend radius	15 mm

Ordering information and specifications :

1. Generator Voltage range
2. Temperature Sensing range
3. Numbe of Channel
4. Fiber optic model
5. Extension cable length
6. Communication protocol
7. Enclosure Mounting system
8. Enclosure IP rating
9. System power rating
10. Accuracy
11. Software

*) Transmitter model can be specified by customer

**) Numbe of fiber optic channel depend to customer request