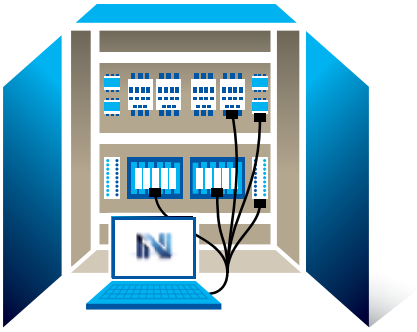
INTEGRATED FACTORY ACCEPTANCE TEST
FOR TRANSFORMER CONTROL CABINETS



NOMOS

CONTROL CABINETS AND ELECTRICAL
APPARATUS FOR HIGH VOLTAGE EQUIPMENT

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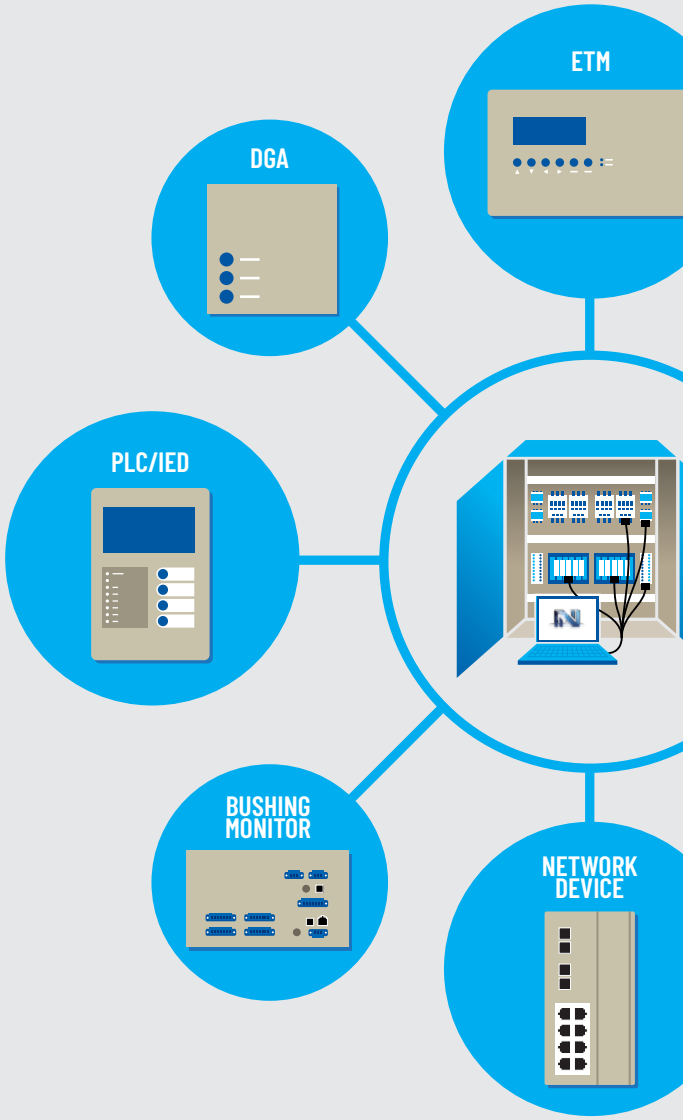
POWERED BY KNOW-HOW

Because knowledge is power, the monitoring of high voltage assets such as power transformers has always been of the utmost importance for the electric utility industry. On-time accurate data on the condition of a power transformer fleet supplies valuable information on the grid's health, allowing electric utilities to make informed decisions on a daily basis. Being the bridge between the utility operator and the power transformer data, the main control cabinet saw its volume getting bigger over the years to house an increasing number of electronic devices. Electronic temperature monitors, electronic annunciator panels, global monitoring devices, tap changer controller and monitoring units, paralleling controller, dissolved multi-gas analyzers and bushing monitors have all made their way on power transformers and into the main control cabinet.

Nowadays, as the power industry faces the big data era, power transformer manufacturers are required to select, integrate, install and configure these devices, gather all their data efficiently, and most importantly make sure the data will securely transfer to the final customer SCADA system using their specific communication protocol once the transformer is energized. Considering the number of possible devices, the various brands and models for each device type and the electric utility-specific SCADA requirements and communication protocol, the task can be daunting. As a specialized power transformer control cabinet designer and manufacturer, Nomos' recognized expertise can be requested. We can conduct for our business partners an Integrated Factory Acceptance Test (IFAT) at the power transformer factory on any of our control cabinets.



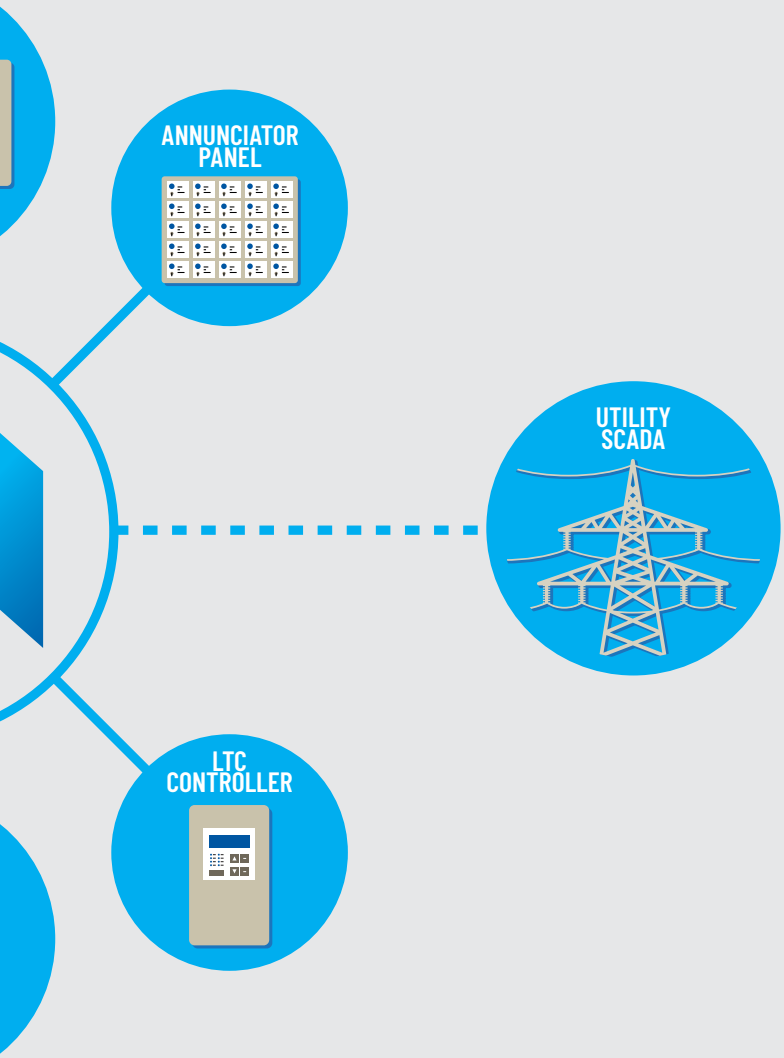
NOMOS IFAT SOLUTION

The Nomos Integrated Factory Acceptance Test performed on our main control cabinet includes validation and testing of the communication network from the field devices installed on the transformer to the communication protocol requested by the electric utility. Our IFAT service confirms through a detailed testing report that our main control cabinet delivers all field data efficiently and in the optimal format for

IFAT BENEFITS

The assessment by our specialized engineering team of the communication network of a power transformer yields valuable benefits for both OEMs and electric utilities.

- Avoid troubleshooting and potential redesign during costly outage operations
- Unveil and isolate any potential communication issue prior to on-site installation



the electric utility to connect their SCADA system. Upon completion of the IFAT, final customer and OEM vendor gain confidence that the integrated communication solution can be connected to the customer system on-site without negative effects, and that it will operate to customer's satisfaction. This testing activity is performed at the OEM factory by one of our control experts.

- Enable troubleshooting and redesign to be executed in the more suitable environment of a power transformer factory
- Allow transformer OEM and final customer to obtain knowledge and familiarize with the integrated communication solution ahead of time
- Reduce transformer OEM workload during the critical transformer test phase
- Time and cost savings especially important considering potential issues during scheduled outage

TRANSFORMER ALARMS AND MONITORING MULTIPROTOCOL NODE

With the increasing number of electronic devices for monitoring required on a power transformer came a new issue that us, as main control cabinet design specialists, and furthermore electric utilities, have to deal with—multiprotocol integration. Each device supplies a variable quantity of output to send all the information gathered. While some use known communication protocols such as DNP3, Modbus or IEC 61850 through fiber optic, or copper-based interfaces, other devices will supply an output for each alarm/information to be hardwired to the final customer SCADA system, rapidly increasing the amount of wire the electric utility must connect.

To tackle this issue, our engineering experts can customize a multiprotocol intelligent node that connects with all electronic devices on a power transformer and provides a single output connection to be configured according to the final customer specified communication protocol. Engineered as a read-only device, the intelligent node is added to the transformer main control cabinet during manufacturing and tested by our IFAT service crew. Outside of the mandatory hardwired connection regarding critical alarm signals, the result obtained is nothing short of a plug-and-play power transformer!

MULTIPROTOCOL NODE SOLUTION BENEFITS

- Plug-and-play solution simplifies on-site installation of the power transformer, reducing outage downtime
- Workload for electric utility staff reduced when connecting a power transformer alarm system to their SCADA system, reducing labor costs
- Power transformer alarm system uses much less space on the SCADA system, saving precious room for future equipment, and decreases cable management on customers end
- Integration of various device protocols within the cabinet into one single output protocol

About Nomos

Since 1989, Nomos has specialized in electrical design, detailed engineering and manufacturing of customized control cabinets and electrical apparatus for high voltage equipment. Our reputation with the world's most important manufacturers of high voltage equipment is based on thousands of control systems in hundreds of power substations throughout North America.

Our renowned experience, our robust processes and the overall quality of our solutions make Nomos a first-rate, proactive partner.

About your project

WE WANT TO KNOW MORE ABOUT YOU

Do you have a specific project or particular challenge? Contact us today. We will be happy to speak with you in order to better understand how Nomos can help you. We have a wide offering and have tremendous capabilities. Our approach is unique. Our commitment is unconditional. Working closely with you, we will develop the customized solution that perfectly suits your needs.

NOMOS

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