

Hydran* M2200/C Online Acetylene Detector

fact sheet

Overview

When transformers show fault conditions that involve electrical arcing, acetylene—a key gas indicator—is produced. Once this hazardous gas begins to appear in the oil, it is certain that severe transformer problems have begun to develop and that catastrophic failure may ultimately occur.

Product Description

GE Energy's Hydran* M2200/C is an early warning device that will alert personnel to developing fault conditions, which could lead to equipment failures and unscheduled outages. It is a dynamic, intelligent, cost-effective online solution in monitoring key incipient fault gases developing in oil-filled critical or problematic transformers.

The Hydran M2200/C consists of a Hydran C10 remote controller and a self-contained sensor head installed on a single transformer valve.

Based on field-proven technology, the sensor head comprises two sensors to continuously measure the concentration of acetylene (C₂H₂) gas, and, in addition, a combined incipient fault gas reading of hydrogen (H₂), carbon monoxide (CO), acetylene (C₂H₂) and ethylene (C₂H₄). The sensor head is permanently mounted on a 1.5-inch NPT threaded valve and requires no additional piping or accessories. The sensor head is connected to the Hydran C10 controller by a supplied 10-m cable.

The use of the analog and digital inputs allows the Hydran M2200/C to also perform further transformer monitoring functions and measure parameters such as load current, top oil temperature and cooling status.

Key Benefits

When an unexpected failure of a critical transformer occurs, the operational and economical impacts on the utility are substantial. Today, many existing oil-insulated transformers used by electrical utilities and other industries are approaching the end of their design life.

Real-time monitoring and early detection of acetylene gas and other key gases can help reduce the risk of unexpected and sometimes catastrophic failures. The Hydran M2200/C system can provide utility operations managers and system operators vital information to be able to make critical decisions, thus avoiding expensive replacement, clean-up costs and unplanned downtime:

- Monitor condition of critical, or problematic, transformers
- Alert personnel of developing fault conditions
- Assist in the decision-making: keep equipment online or remove it from service
- Improve maintenance practices: allowing for timely field measurements



System Features

- Microprocessor-based: completely digital device
- Device can be used for monitoring both existing and newly commissioned transformers
- Continuous, online measurement of acetylene (C₂H₂) gas and other key fault gases
- Alphanumeric display with menu-driven local configuration interface
- Automatic data acquisition and logging, with each logged record date and time stamped. Acquisition includes the following:
 - 30 days of short-term data
 - 1 year of long-term data
 - 200 alarms events
 - 1000 system events
 - 2000 digital events
 - 100 DGA results
 - 12 years of service data
- Type NEMA* 4X stainless steel enclosure
- Two illuminated multi-functional push buttons mounted on the control unit cabinet door:
 - Alarm 1 and Menu accessibility
 - Alarm 2 and Acknowledge button
- Sensor head: single valve installation (minimum 1.5-inch NPT thread) with no additional piping required
- Sensor and system self-test and diagnostics
- Continuous real-time sensor measurements
- Adjustable alarms on gas and analog/digital inputs:
 - Flexible alarm configuration
 - Hourly and daily for levels and average trends on all inputs
 - Hourly and daily trend/average with alarm features
- Local and remote communications via:
 - RS-232, RS-485, and modem or ethernet
- Communication protocol DNP3.0 Level 2
- Hydran Host graphical interface software, (GUI):
 - User-friendly Microsoft® Windows®-based application
 - Provides continuous online survey of basic information and alarm status
 - Creates real-time log of information and graphical display of data
 - Downloading and uploading configuration data



Sensor Head
• Measured Gas Levels



Intelligent Processor
• Data Acquisition

For more information, visit us at ge.com/energy or e-mail us at energy.tdsolutions@ge.com

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