

Systematic Monitoring of Control Cabinets

Diagnostic Gateway with
I/O Module Function

At a Glance

- Simple and reliable monitoring of the control cabinet
- Significant increase in availability and reliability
- Native connection via FOUNDATION fieldbus H1



The control cabinet—complete with engineering, components, and installation—factory tested and delivered ready for installation. The Diagnostic Gateway is an integral part of equipment monitoring.

The Application

Where process control systems are equipped with fieldbus, the bus connections and fieldbus power supply are located in the control cabinet. However, signal inputs and outputs are not available. This means that the ambient conditions of the cabinet cannot be properly monitored and thus faults are not detected early. The FieldConnex® Diagnostic Gateway (DG) with I/O module function offers a solution, providing analog and binary inputs, as well as two outputs with power relays.

The Goal

The DGs enable systematic monitoring of the control cabinet, filling a major gap in functionality. Function blocks enable closed-loop control of heating systems, ventilation systems, and air conditioning units to protect the control cabinet from excessive cold or heat. It is possible to monitor access to the cabinet and indicate unauthorized access.

The Solution

Diagnostic Gateways provide the infrastructure that is missing in fieldbus control cabinets. A function block offers many configuration options: it monitors inputs connected to frequency, humidity, and temperature sensors or door contacts. Binary inputs can be used for pulse counting. This enables monitoring of ambient conditions in the control cabinet and the controlling of them based on temperature difference or humidity. Two integrated power relays provide direct control methods for devices such as air conditioning units, so that neither additional contactors nor wiring are required. In addition to integration via Ethernet and the fieldbus Diagnostic Server, the DG can be connected as a field device or node via FOUNDATION fieldbus H1.

The Benefits

Diagnostic Gateways respond automatically to any change in the ambient conditions in the control cabinet. Errors are detected early and faults can be prevented, significantly increasing the reliability and availability of process equipment.

Special Features

The inputs and outputs are configured freely using a function block that can be accessed via fieldbus or Ethernet and a Web client. For ease of use, preconfigured screens are available for a wide variety of tasks, such as climate control, fan monitoring, or access monitoring. DGs can even be retrofitted into existing systems using FieldConnex® Advanced Diagnostics.

