

Generator Condition Monitor (GCM-X)

Corrective action prompted by early warning of generator overheating can mean the difference between a brief shutdown for minor repairs and a major overhaul involving weeks or even months of costly downtime. E/One pioneered the development of the Generator Condition Monitor (GCM) and in more than 1,500 applications worldwide, operators have the opportunity of taking corrective action if and when a critical situation occurs.

Building on more than three decades of proven field experience, and incorporating international requirements for hazardous area locations, the Generator Condition Monitor—Explosion-Proof Design (GCM-X) assures a new level in performance, reliability, and safety.

How the GCM-X Works.

High concentrations of submicron particles (pyrolytic products) are produced whenever any materials within the generator are heated sufficiently to produce thermal decomposition. These "hotspots" can lead to catastrophic failure if not detected in a timely manner.

When they are present in hydrogen, pyrolytic products are quickly detected by the sensitive ion chamber of the GCM-X. In fact, the GCM-X warns of impending failure faster and more reliably than temperature sensors such as RTDs or thermocouples.

If an emergency situation occurs, upon detection of hotspots the GCM-X microprocessor initiates and monitors an alarm verification sequence. If the alarm is confirmed, a verified alarm indication is given; alarm contacts are switched; and a fixed amount of the hydrogen flow automatically passes through the sampling system. Particles are then collected for laboratory analysis to determine their source.

Alarm confirmation is quickly made by the automatic alarm verification system, which activates the solenoid valve in the filter/solenoid valve assembly. All the hydrogen then passes through the filter,

Features and Benefits

- Microprocessor-based with self-diagnostics
- Flameproof, intrinsically safe design
- Differential pressure transmitter for stable flow control
- Dual bar graphs for flow and output
- Separate warning and trouble indicators
- Automatic alarm verification
- Optional remote control/display and communication
- Easy installation
- Maintenance-free operation

Specifications GCM-X

MEASUREMENT CHARACTERISTICS

Technology Principle	Ionization Chamber
Flow Rate	Adjusted by internal valve
Differential Pressure	4" to 5" (102 mm to 127 mm) minimum
Bar Graph Readout Normal Operation	80% of scale, typical
Alarm Condition	50% of scale, typical
Flow	1.5

ELECTRICAL CHARACTERISTICS

Power - Input Voltage	115/230 VAC
Input Frequency	50/60 Hz
Input Power	100 Watts
Inrush Current	2A
Output Signal	4-20 mA current output, self powered (0 to 100%)
Flow output signal	4-20 mA current output, self power (0 to 3")
Output, Relays	5A @ 250 VAC
Alarm, NO and NC	5A @ 30 VDC resistive
Warning, NO and NC	100 mA @ 125 VDC resistive
Trouble, NO and NC	

MECHANICAL CHARACTERISTICS

Overall Dimensions	21.8"W x 23.6"D x 32.5"H
Weight	240 lbs.(110 Kg)
Temperature	32-125 F (0-52 C)
Relative Humidity	0-95%
Area Classification	Zone 2, Ex II H2
Gas Pressure	100 psi maximum
Gas Connections	150 lbs., 1/2" pipe flanges, standard



GCM-X stand-alone unit. The GCM-X provides early warning of generator overheating, potentially saving hundreds of thousands or even millions of dollars in costly downtime.

Environment One Utility Systems is an ISO 9001 registered firm.

(+1) 518.346.6161 ext 3028
Fax (+1) 518.346.4382
www.eone.com/solutions

e one
UTILITY SYSTEMS
Always on line.