

PRODUCT BULLETIN 4

ONGUARD<sup>®</sup> 3000

PURAFIL



FOR INDUSTRIAL APPLICATIONS

THE PURAFIL ONGUARD 3000 (OG3) measures in real-time the overall reactivity level of Airborne Molecular Contaminants (AMC) present in the local environment as well as temperature and relative humidity. This data can either be logged by an internal data logger or can be transmitted directly to the building management system via a 4-20 mA output signal. Reactivity monitoring is an accurate and reliable method of evaluating the quality of ventilation and recirculation air, characterizing the room environment, and evaluating the effectiveness of chemical filters.



ONGUARD OG3

FEATURES & BENEFITS

- Internal temperature and relative humidity sensors
- Incremental and cumulative corrosion data
- Service life of 4000 Angstroms
- Battery-operated for data logger application or hard-wired for transmitter application
- Patented technology specific to airborne corrosion
- Accurate within ± 0.5-1% of full span
- Corresponds to ISA Standard S71.04-1985 for Classification of Environments
- LCD display (display and backlight activated by any button press)
- PC based software program to interface with the unit
- Serial or USB interface to PC
- Data logging possibilities

PRODUCT DESCRIPTION

The OnGuard OG3 utilizes highly sensitive quartz crystal microbalance sensors to provide accurate and reliable corrosion monitoring within ± 0.5-1% of full span. Ideal for control rooms, motor control centers, rack rooms, or other areas where corrosion is of concern, the OnGuard OG3 allows for action to be taken before problems develop - increasing the reliability of electronic and electrical instrumentation, and reducing the cost of maintenance repairs.

PRINCIPLE OF OPERATION

The OnGuard OG3 is the first reactivity monitor to provide real-time data on the level of AMC present in the local environment. A quartz crystal microbalance (QCM) is plated with copper or silver and used to measure the mass accumulation of the corrosive film that results from the reaction of contaminants with the metals. The mass increase is described in terms of the corrosion film thickness measured in

Angstroms (Å). This highly sensitive method of measurement will indicate the reactivity level of an environment with contaminant levels at or less than one part per billion (1 ppb). This measurement can then be related to ISA-Standard S71.04-1985 (see table).

SYSTEM ADVANTAGES

**MAINTENANCE:** The only maintenance necessary of the OnGuard OG3 is the replacement of the sensor(s), which is required at 4000 angstroms of cumulative corrosion growth, or if the sensor(s) has been damaged, causing the Red LED to blink.

**INSTALLATION:** Location: Select a clean, dry location free of excess vibration where the temperature will be between -10 and 75° C (14° and 167° F) and the relative humidity will be between 10% and 95% non-condensing.

**PLACEMENT:** When installing the OnGuard OG3 special care should be given to its placement. It should be mechanically affixed to a structure at eye level within the protected space.

PC BASED SOFTWARE PROGRAM:

The OnGuard OG3 can be connected to any PC to view retrieved data via a software program included with the monitor. This software package can be downloaded to your PC and is used for communication and graphing of data stored within the monitor.

TABLE 1

ISA STANDARD S71.04-1985	ONGUARD OG3 CORRELATION	EFFECTS
Class G1: <300 Å/30 days	Class G1: <10Å/24 hours	Mild: Corrosion is not a factor
Class G2: <1000 Å/30 days	Class G2: <33 Å/24 hours	Moderate: Corrosion is measureable
Class G3: <2000 Å/30 days	Class G3: <66 Å/24 hours	Harsh: High probability that corrosive attacks will occur
Class GX: >2000 Å/30 days	Class GX: <67 Å/24 hours	Severe: Electronic/electrical equipment not expected to survive

