

Indoor Corrosion Monitoring & Control

Why Corrosion Control?

- Corrosion is caused by an unsafe environment generated from the infiltration of outside particulates and other gaseous pollutants
- When data centers / control rooms are located near landfill sites, drains, or any process industries, then the problems become even more detrimental
- Particulate contaminants whose size is up to 0.1 microns can be easily removed by making use of particulate filters but with gaseous contaminants, it is difficult as they are very small.

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Even a very low level of contaminants in data centers / control rooms can lead to

- Reduced productivity
- Interference of electronic equipment
- Enhanced downtime
- Non-compliance with specifications of the electronic warranty
- Electronic components letdown and circuit failure lead to loss of data along with data center downtime.

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Gases that cause corrosion in electronic equipment:

Severity Level	G1-Mild	G2-Moderate	G3-Harsh	GX-Extreme
Contaminant Gas	Concentration levels in parts per billion (ppb)			
H_2S	< 3	< 10	< 50	≥ 50
SO_2 , SO_3	< 10	< 50	< 300	≥ 300
CL_2	< 1	< 2	< 10	≥ 10
NO_X	< 50	< 125	< 1250	≥ 1250
HF	< 1	< 2	< 10	≥ 10
NH_3	< 500	< 10,000	< 25,000	≥ 25,000
O_3	< 2	< 25	< 100	≥ 100

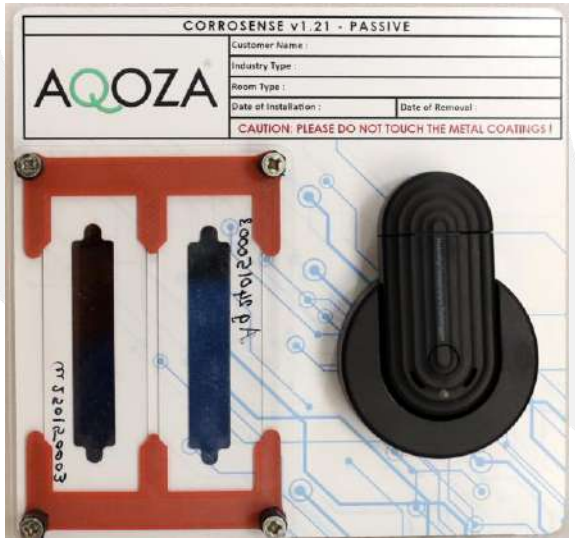
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Corrosion Monitoring Units

To monitor and store real-time corrosion in a room which is crucial for effective protection of electronic components. The device works in compliance with international standard; '*ANSI/ISA-S71.04 Environmental Conditions for Process Measurement and Control Systems: Airborne Contaminants',* for measuring corrosion levels of electronic & electrical equipment



Live Corrosion Monitoring Unit



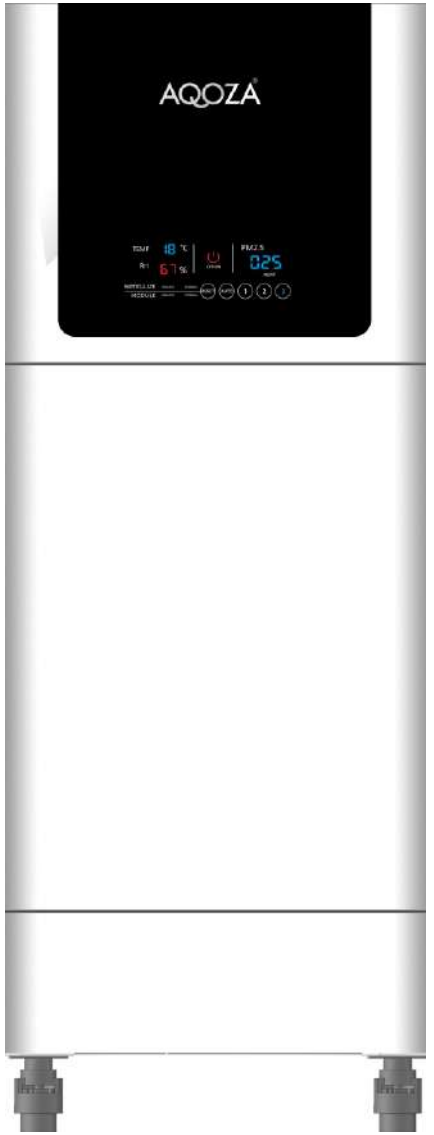
Passive Corrosion Monitoring Sensor

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Corrosion Control Units

To remove corrosive gases and protect the sensitive equipment like motor controls, electronics, data centre equipment, server room equipment, switch gears and other critical equipment from the following industry.

- Refineries
- Airports
- Healthcare
- Paper & Pulp
- Pharmaceutical
- Semiconductor manufacturing
- Steel manufacturing & Smelting plants
- Fertilizer manufacturing
- Wastewater treatment
- Chemical manufacturing



To meet Air quality limit of '*ANSI/ISA-S71.04 Environmental Conditions for Process Measurement and Control Systems:*

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PASSIVE CORROSION MONITORING UNIT



CORROSENSE v-1.21

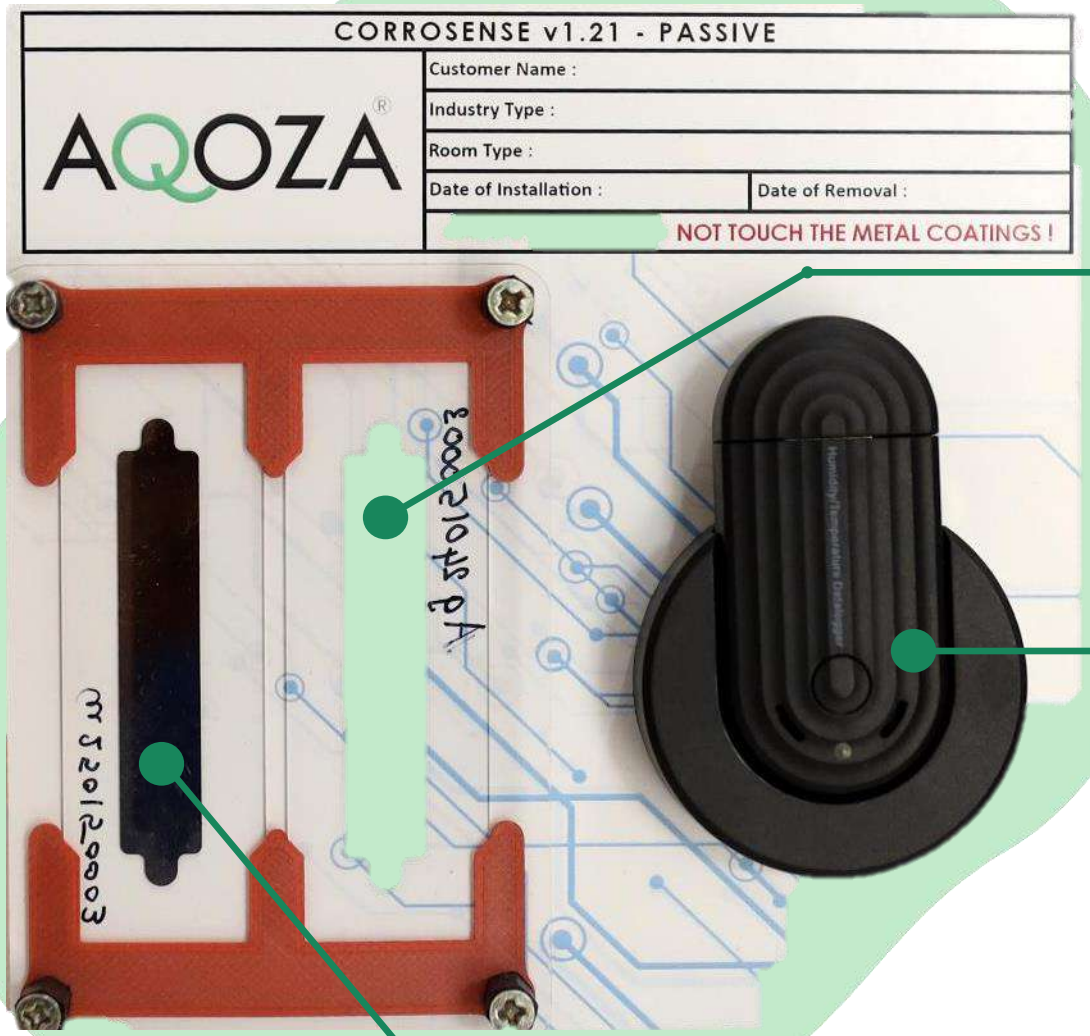
Based on ER technology

Designed to measure corrosion passively in a room

Requires field exposure of film for a period of 30 days

ANSI/ISA-S71.04 Environmental Conditions for Process Measurement and Control Systems: Airborne Contaminants

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Silver coupon

Temp/RH Datalogger

Copper coupon

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PRINCIPLE OF WORKING

- The rate of corrosion is directly proportional to the resistivity of the coupons.
- The resistivity changes since the metal are not pure anymore once it is corroded.

SALIENT FEATURES

- •Advanced ER based corrosion coupon
- •Quick and accurate results
- •Copper and Silver corrosion coupon films
- •Passive monitoring technique
- •Unobtrusive and quick installation

LIVE CORROSION MONITORING UNIT



AQOZA CORROSENSE A01

Monitors and stores real-time information on corrosivity on-air and room

Based on ER technology, which measures the electric resistance of metal tracks exposed to the atmosphere.

The device works in compliance with the international standard; ‘ANSI/ISA-S71.04 Environmental Conditions for Process Measurement and Control Systems: Airborne Contaminants’, for measuring corrosion levels of electronic & electrical equipment.

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Silver sensor

Copper sensor

LCD Touchsreen display

Power/Data transmission port

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PRINCIPLE OF WORKING

- works on ER technology, which directly measures electrical resistance of exposed and un-exposed metal tracks to calculate the corrosion rates

SALIENT FEATURES

- •Real-time corrosion monitoring.
- •Interactive user-friendly software to view results
- •LCD touchscreen display
- •Sensitive copper and silver sensor to monitor corrosion.
- •In-built temperature, pressure, and humidity sensors.
- •Power input via POE, USB, DC source

The corrosion severity levels for Copper and Silver corrosion sensors are as follows:

Severity Level	G1- Mild	G2 - Moderate	G3- Harsh	GX- Extreme
Copper reactivity (in Angstroms)*	<300	<1000	<2000	≥2000
Silver reactivity (in Angstroms)*	<200	<1000	<2000	≥2000

CORROSION CONTROL UNIT



Standalone filtration units

corrosion control units for control and server rooms

functions to remove corrosive gases & particles from the room

Unit capacities and filtration media are selected based on the corrosive gases and volume of the facility to be protected

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HEPA- H-13

Suction Fan

Touch Control/
Display Panel

Gas-Phase Filter
media

HEPA- G 4 (Coarse)

Outside the filter

Inside the filter

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HEPA -13

A HEPA grade of H13 can remove 99.95% of all particles in the air measuring 0.2 microns in diameter. They are considered medical grade. The 0.2 micron is the most difficult size of a particle to capture.

The **G4 HEPA** filter is a pre-filter that filters coarse particles like pests, dust, pollen etc

SUCTION FAN

Rated at 500 cfm / 1000 cfm

Acts as the driving force which suck gases through the vents below, on the sides of the unit, and exhaust it to the top the top

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AQOZA Green pellets



AQOZA has developed high-performance filtration media from coconut-activated carbon (a renewable resource) for corrosive gas removal applications.

Filtration media are custom selected for applications, sometimes a blend of different media is selected for the filtration.

Other adsorption media includes zeolite & alumina oxides pellets, which are chemically impregnated to suit the applications

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AQOZA Box Modules

AQOZA® Box modules are compact plastic modules filled with filtration media.

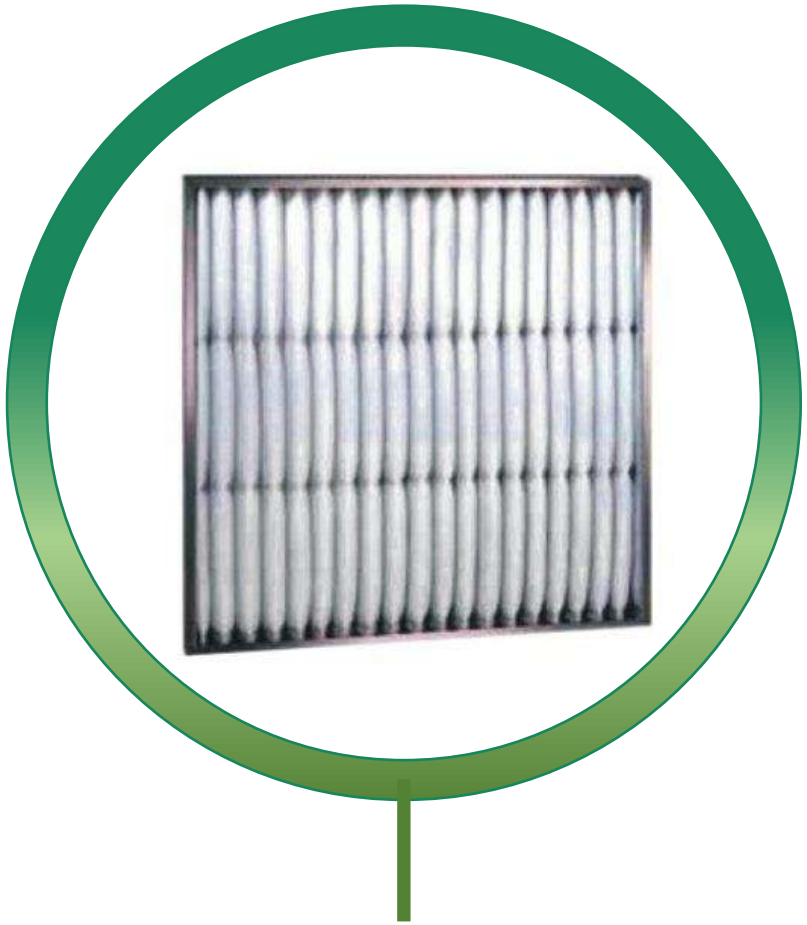
These are lightweight

Designed with larger airflow with minimum pressure drop.

Two sizes of the models are available, which are filled with custom selected filtration media for the applications.



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G-4 HEPA filter



H-13 HEPA filter

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ADVANTAGES OF CORROSION CONTROL

- keeps the environment safe for electronics & equipment
- Helps in increasing the longevity of electronics, hardware equipment, machines, metals, and more.
- Keeps employees safe
- Protects important data saved by users around the globe
- Prevents electronic malfunctions
- Decreases the chances of high downtime
- Reduces maintenance cost
- Increases productivity
- Enables a healthy and safer environment for employees

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Our Presentation is just too small for everything ☺

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