



Better Air is Our Business®

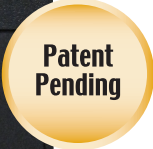
AmericanAirFilter®



## Reading Unit Real-time Reactivity Monitor

- Determine causes of corrosion events by trending data overtime
- Detailed reports available through Internet based software\*
- Reporting includes cumulative corrosion thickness, incremental corrosion rates, temperature and relative humidity rates
- Patent pending hardware and method of corrosion measurement
- Read up to 500 SAAFShield Detecting Units with one SAAFShield Reading Unit

SAAFShield Real-Time Reactivity Monitor technology is a powerful system that allows users to monitor corrosion in real time or on a periodic basis to determine equipment or material vulnerability to corrosion. The cost of downtime is the most significant consequence of electronic equipment corrosion. In manufacturing, corrosion of electronic control equipment can lead to shutdown of the process – lost production time. In other industries, corrosion of servers means data center downtime- transactions must stop, software applications for logistics can't run, data can't be stored.



The SAAFShield Reading Unit works together with the SAAFShield Detecting Unit to display and trend corrosion data over time. The data can be used to evaluate operational procedures, environmental factors, or other items that occur at specific times for their impact on producing a corrosive environment. The SAAFShield real-time reactivity monitor lets you take immediate action to protect your expensive electronics.

### Specifications

#### Sensor Operational Parameters

**Copper and Silver corrosion:**  
0 - 4,000 Å corrosion thickness,  
+/- 20 Å accuracy over sensor  
service life.

**Temperature sensor:**  
-50 to 150°C, +/- 0.6°C accuracy

**Relative Humidity sensor:**  
0-100% RH, non-condensing,  
+/- 2% accuracy

#### Interface

128x64 pixel dot matrix on unit  
display with backlight.

Alphanumeric keypad.

Universal serial bus (USB) adaptor  
for PC communication and storage.

Data storage via USB drive,  
compatible up to 16 GB.

#### Output Values

Copper and Silver cumulative  
corrosion thickness, in Angstroms.  
Copper and Silver incremental  
corrosion rates, in Angstroms/  
30 days. Corrosion classification as  
per reporting standard. Raw data files  
available for off-line analysis, in CSV  
format. On-screen graphing capability  
of cumulative corrosion thickness and  
incremental corrosion rates under  
stand-alone mode.

#### Communications Capabilities

Industrial grade, 26-pin ribbon  
connector cable with redundant  
gold-coated pins for communication  
between reading and detecting units.

#### Reporting Standards

Default reporting of corrosion  
class based on ISA-71.04-1985  
standard.

#### Operational Modes

**Distributed mode:** A single  
SAAFShield Reading unit  
links with multiple SAAFShield  
Detecting units within a user-  
defined location.

**Stand-alone mode:** A single  
SAAFShield Reading unit and  
Detecting unit are coupled together  
to continuously log readings at  
user-defined time-intervals.

#### Power

Supplied 12V power adapter with  
universal mounting pins.

Backup on-board power via high  
energy density 9V battery and  
coin-cell battery.

Option for powering the system  
via USB port connected to a  
power source.

**Input AC:** 100~240V, 50/60Hz

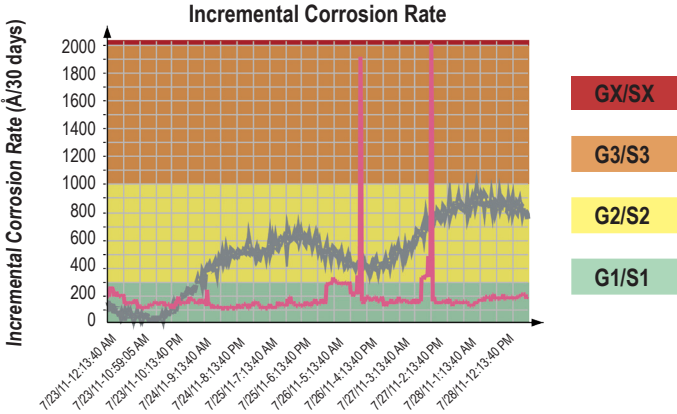
#### Dimensions and Materials

**L x W x H (inches):**  
9.23 x 5.12 x 1.21

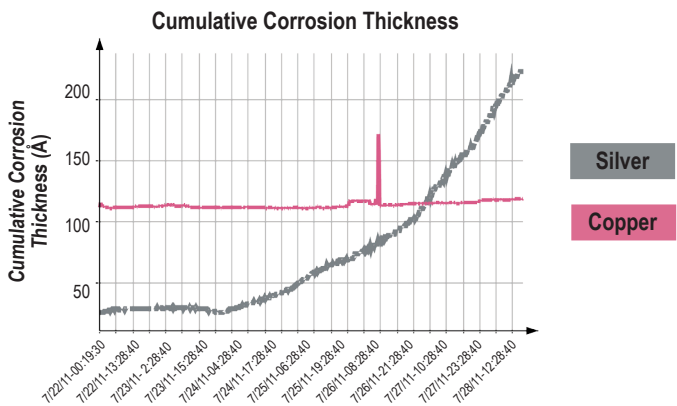
**Material:**  
Black thermoplastic enclosure.

\*SAAFShield Reporting site is available at SAAFShield.AAFIntl.com

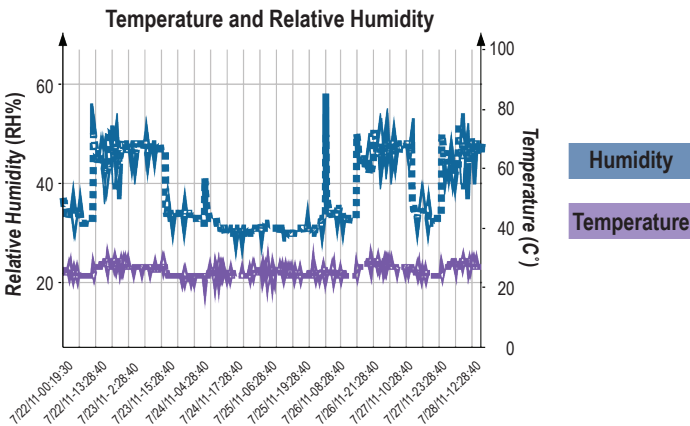
**Reporting Data Example**



Incremental Corrosion Rate is the amount of corrosion that has occurred in 24 hours normalized to angstroms per 30 days as correlated to ISA standard 71.04-1985.



Cumulative Corrosion Thickness is the amount of corrosion accumulated on the copper or silver sensors over the life of the sensor. Sensor lifetime thickness is 4000 angstroms.



Temperature and Relative Humidity readings are measured Celsius and percentage.

**Applicable Standards**

**Traditional Corrosion Control (ISA 71.04-1985)**

Applications: Paper Mills, Refineries, Industrial Plants, Wastewater Plants, Telecommunication Sites

Protected Equipment: Non-RoHS compliant circuitry in control rooms, motor control centers, or other such areas.

Class	Copper Å/ 30 days	Reliability Statement
G1 (Mild)	< 300	Sufficiently controlled such that corrosion is not a factor
G2 (Moderate)	< 1000	The effects of corrosion are measurable
G3 (Harsh)	< 2000	There is a high probability that corrosive attack will occur
GX (Severe)	> 2000	Only specially designed and packaged equipment would be expected to survive

**RoHS Compliant Corrosion Control (ASHRAE TC 9.9 Guideline)**

Applications: Data Centers, Tire Manufacture Facilities, Rubber Manufacture Facilities, Paper Mills, Refineries

Protected Equipment: RoHS compliant circuitry in control rooms, motor control centers, or other such areas.

Class	Copper Å/ 30 days	Silver Å/ 30 days	Reliability Statement
G1 (Mild)	< 300	< 200	Acceptable
G2 (Moderate)	< 1000	< 1000	Not acceptable - corrosive attack may occur
G3 (Harsh)	< 2000	< 2000	
GX (Severe)	> 2000	> 2000	

**Archive or Museum Environments**

Applications: Archives, Metal Collections, Libraries, Museums, Museum Storage, Historic Houses

Protected Material: Archival material, rare books, or other material stored in application areas

Class	Copper Å/ 30 days	Silver Å/ 30 days	Applicable Areas and Acceptability
Extremely Pure	< 90	< 40	Archives, Metal Collections, Rare Books
Pure	< 150	< 100	Libraries, Museums, Museum Storage
Clean	< 250	< 200	Historic Houses
Slightly Contaminated	< 350	< 300	Short Term Acceptable
Polluted	> 350	> 300	Not Acceptable