

AIRCORR loggers

Real-time monitoring of indoor and outdoor corrosivity and air quality

Information on the actual corrosivity is crucial for effective corrosion protection

AIRCORR measures and registers the change over time in the electrical resistance (ER) of a thin metal track applied on an insulating substrate. If the metal corrodes, the cross-sectional area of the track decreases and the ER increases. The changes in ER can be directly translated into corrosion depth and corrosion rate.

The AIRCORR monitoring system is comprised of an electronic logger for measuring and recording ER, a metal sensor that actually corrodes in the environment, a non-contact communication interface between the logger and computer, and a user-friendly software programme.

Main advantages

- Due to the great precision of the electronic device and the geometry of the metal track, both a **quick response time** and a **highly sensitive measurement** are achieved.
- A **wide range of sensors**, including **ultra-sensitive ones for low-corrosivity environments**, is available.
- The logger is **small** and a **watertight** version is available.
- The **metal sensors can be replaced** by end-users, which reduces the operational costs.
- **Non-contact data reading** allows the logger to remain in place while also allowing the data to be monitored.
- The unit is designed to be **autonomous for five years**.
- User-friendly software provides **rapid interpretation of results** and classifies the air quality and corrosivity with the help of existing and proposed **standards and recommendations**.

AIRCORR versions:

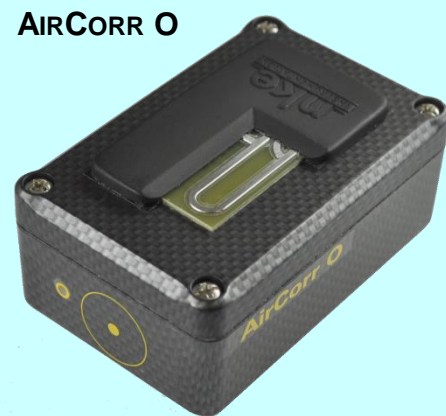
- **AIRCORR I**: Indoor logger with an exchangeable sensor.
- **AIRCORR I Plus**: Indoor logger with temperature and RH sensors, 2 exchangeable corrosion sensors and LCD showing current corrosivity.
- **AIRCORR O**: Watertight logger for outdoor use.



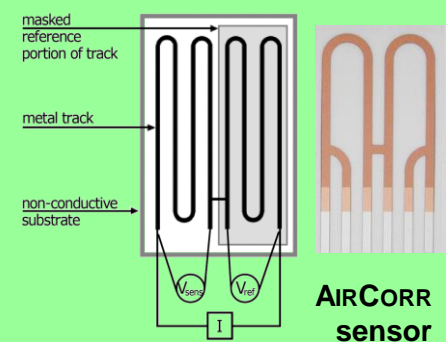
AIRCORR I



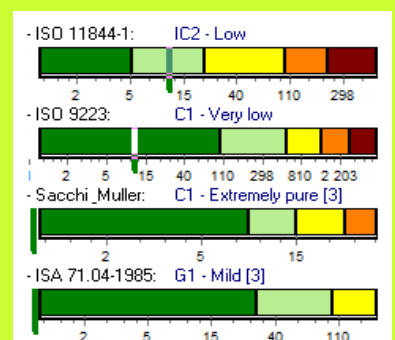
AIRCORR I Plus



AIRCORR O



AIRCORR sensor



Corrosivity classification

AIRCORR sensors

Both thin-film sensors with extreme sensitivity for indoor use and robust thick-film sensors for corrosive environments can be purchased.

Material	Indoor, high sensitivity	Indoor, long lifetime	Outdoor, high sensitivity	Outdoor, long lifetime
Copper	50 nm	500 nm	5 µm	12 µm
Silver	50 nm	500 nm		-
Lead	400 nm		25 µm	
Iron/steel	800 nm		25 µm	250 µm
Zinc	-		25 µm	50 µm
Aluminium	-		14 µm	
Tin	-		10 µm	
Bronze	400 nm		5 µm	
Brass	-		10 µm	

Main applications

- *Cultural heritage.* Control of the air quality is vital to the protection of the valuable, culturally-significant objects in museums, exhibitions, depositories, and archives.
- *Transportation and storage.* Design of better measures for corrosion protection of vehicles and transported goods.
- *Electronics.* Protection of electronic equipment in clean rooms, GSM stations, pulp & paper industry, cars, and ships.
- *Research and development.* Development of corrosion tests, understanding of corrosion mechanisms.

References

- *Automotive:* Renault, Nissan, Scania, JFE Steel.
- *Marine:* DCNS, DGA.
- *Cultural heritage:* Kunsthistorisches Museum, Vienna; English Heritage; Swiss National Museum; National Museum of Denmark; Danish Royal Library; Australian War Memorial; The Louvre Museum; The Mariners' Museum, USA; National Archive, Czech Republic.
- *Research:* C2RMF, Swerea KIMAB.



AIRCORR development was supported by the European Commission under the 7th Framework Programme, contract No. 226539



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