

COMBINED HUMIDITY & CORROSION SENSOR FOR EXISTING STRUCTURES

SensCore 16.1012



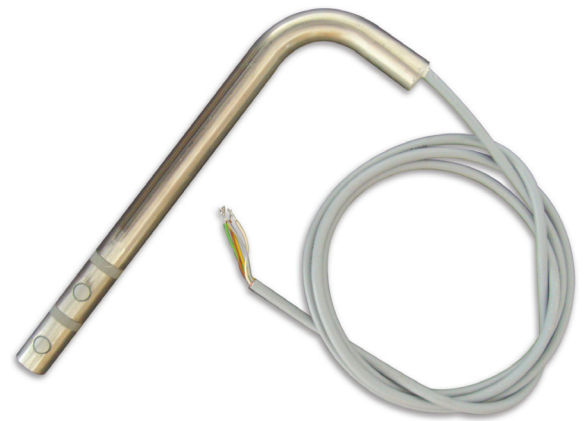
GENERAL DESCRIPTION

The SensCore Humidity Sensor measures all critical parameters for the evaluation of the corrosion state of an existing reinforced concrete structure: corrosion initiation and rate, humidity content and temperature. Those measurements are performed at different depths, typically placed between the concrete surface and the reinforcement bars depth. This allows the evaluation of water content and transport phenomena across the concrete depth as well as the progression of the corrosion front towards the rebars. The owner can therefore determine how water is entering, respectively exiting the structure and how close to the rebars the corrosion is no longer inhibited. This is particularly useful to evaluate existing structures before and after a repair or maintenance intervention, such as painting, hydrophobic treatment, application of a sealing membrane and others.

TECHNICAL DESCRIPTION

The SensCore Corrosion sensor is composed by a cylindrical element containing mild steel elements and stainless steel elements. The stainless steel rings are used to measure the concrete resistivity, which is inversely linked to the moisture content of concrete. The mild steel elements measure the corrosion current at different depths. Two temperature sensors complement this information.

This sensor is designed for installation in existing structures. It is installed in a 20 mm hole drilled into the concrete and sealed in place with a special mortar. After a stabilization period, the sensor and mortar assume the same humidity and pore-water chemical content of the surrounding concrete and reliable measurements can start.



MAIN FEATURES

- Corrosion Initiation Measurement
- Corrosion Propagation Measurement
- Electrical Resistivity Measurement
- Concrete Temperature Measurement
- Applicable for monitoring the water content and humidity exchange in concrete
- Measures at 2 depths in the concrete cover
- Installation in existing concrete structures
- Optimized for SensCore Datalogger 16.2010

PERFORMANCE

Sensor diameter	18 mm
Corrosion sensor material	Ordinary uncoated dummy rebar (mild steel)
Corrosion sensor diameter	8 mm
Corrosion sensor position	2 positions up to 80 mm depth 1 st sensor at adjustable depth
Humidity sensor material	Stainless Steel 1.4301/304
Humidity sensor length	30 mm
Humidity sensor diameter	18 mm
Sensing bar length	60 mm
Sensing bar diameter	4 mm
Sensing bar position	3 positions up to 80 mm depth 1 st sensor at adjustable depth
Temperature sensors	2 sensors at 0 and 80 mm depth
Temperature sensor range	-50 to 100°C
Temperature sensor resolution	0.1°C
Connecting cable length	5 m (can be shortened during installation)

ORDERING INFORMATION

- SensCore 10.1012