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T E C H N I C A L D A T A S H E E T

AchillesEDS: The Early Detection Corrosion Management System

The issue of corrosion of structures is a growing one. The problem is also global with an increasing amount of ageing stock the need to know what is happening is paramount. At a cost of 4-5% of a nation's GDP the problem is not an inexpensive one. Getting to know the nature of the problems need not however be expensive. They do however need specific management, which cannot always be performed manually, even by the seasoned specialist.

The answer can be found in the **Achilles EDS** (Early Detection System). This system allows on-site and off-site access to chloride depth, resistivity, corrosion potential and corrosion rate interpretation of performance.

This is one of many software management systems offered by C-Probe for the management of corrosion and protection of reinforced concrete structures, whether galvanic protection, ICCP, inhibitor evaluation, structural integrity or concrete quality is the issue. Specifically engineered to the needs of the structure manager these systems have almost limitless flexibility.

The novel hardware architecture takes care of both simple and complex configurations which means that there is virtually no limitation to the expansion of the system; simply decide the quantity and distribution of measurement locations within the monitoring system design and **AchillesEDS** will meet the requirements.

The system incorporates new generation hardware architecture evolving from programmable logic controllers to the more flexible and dynamic free topology (or peer-to-peer) architecture based on LonWorks® platform.

As a result, these systems are available in a non-networked stand-alone unit but can be built-upon to network thousands of nodes from a single Network Access Unit (NAU).

The flexibility continues with the networking system allowing the choice of power and data transmission by simple mains, twisted pair or fibre optic cabling networks.

Proprietary control software with Internet-ready graphical (mimic) user interfacing allows dynamic data exchange (DDE) links from instrumentation to Microsoft Access® databasing, data-trending and reporting on-site or from the comfort of your desktop PC in the office by remote communication.

Automatic trending of steel and concrete responses to durability performance and maintenance levels, acquisition of corrosion potentials, corrosion rates (using LPRM) and potential/ current perturbation analysis in graphical outputs are some of the standard features.

Principal Components and Features:

Measurement Unit (MU) and Rate Measurement Unit (RMU):

No. of Channels (RMU):	increments of 2 rate/ 2 potential monitoring
No. of Channels (MU):	increments of up to 16 channels of potential monitoring
Resolution:	18 bit; 16cps
Communication Speed:	up to 1.25Mbps
Architecture:	peer-to-peer; dynamic free topology
Networking:	neural with choice of mains, twisted pair or fibre optic

Network Access Unit (NAU):

IP65 enclosed LonWorks® communications and network power, memory and real-time modules. On-site or modem control of all embedded probes. Communications can be performed using landline, cellular, radio or "line-of-sight" technology.

Associated Probes and Sensors:

The AchillesEDS acquires and analyses data obtained from embedded chloride depth, resistivity, corrosion rate and corrosion potential probes and sensors. Compatible products are the C-Probe CP10P/ CP20/ CP40 (corrosion potentials), CP100/101/200/300 (corrosion potential and corrosion rate), CP70 (resistivity) and CP80 (chloride depth).

The products are compatible with new construction projects, existing structures, stray current detection and performance management of protection systems.

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