• Highly Secure and Reliable Self Organizing Wireless Mesh and Star Network Configurations
• High Resolution Metal Loss Measurement for all Process Environments
• Direct Input Through Modbus Interface to Virtually any Process Automation System
• Low Installed cost
• International Hazardous Area Certifications
• ISA 100 Wireless Protocol Seamlessly Integrates With Yokogawa, Honeywell, & GE Wireless Networks

Cosasco Wireless System has redefined corrosion monitoring as a true process parameter. The system is based on Microcor patented high resolution corrosion measurement technology. The 2.4 GHz self-organizing wireless network delivers exceptional data reliability and network stability through its high security communication.

The Wireless Transmitters are quickly and easily installed without the time and expense required for wiring. Once installed metal loss and computed corrosion rate are read from the Gateway directly into your DCS/SCADA system, an RCS ICMS3-Amulet Corrosion Management System, or Cosasco Intelligent Interface Unit for smaller scale systems. The Wireless Transmitters are easily configured using a direct connection to a PC or laptop in a safe area, or through Cosasco’s handheld instrument in hazardous locations.
Cosasco Wireless System Overview

The Cosasco Wireless System can operate as an independent system or can integrate into your existing DCS/SCADA (See diagram below). The Cosasco Wireless System just like its wired counterpart Microcor Corrosion Monitoring System is flexible, highly accurate, and economical.

The basic system architecture comprises the following:

1) Microcor ER Wireless Transmitters (measuring corrosion)
2) LPR Wireless Transmitter (measuring corrosion in water systems)
3) Cosasco Wireless Extender (to expand wireless network)
4) Gateway
5) Corrosion/Erosion Probes & Probe Adapters
6) Access Fittings & Hollow Plugs
7) Proof Cable (if Transmitter is mounted remotely from probe)
8) ICMS3™ or IIU Serv

<table>
<thead>
<tr>
<th>Specification</th>
<th>ISA100 Wireless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wireless Range (clear line of sight)</td>
<td>1500 ft (450 m)</td>
</tr>
<tr>
<td>Transmitter Battery Life</td>
<td>3 Years</td>
</tr>
<tr>
<td>Wireless Devices Supported</td>
<td>Up to 500</td>
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<tr>
<td>Network Type</td>
<td>Mesh or Star Topology</td>
</tr>
<tr>
<td>System Integration</td>
<td>Yokogawa, Honeywell, and GE Wireless Networks</td>
</tr>
<tr>
<td>Certifications</td>
<td>Hazardous Area Locations (Class I, Zone 1)</td>
</tr>
</tbody>
</table>
System Details

Microcor Wireless Transmitters
The M-320 uses high resolution metal loss measurement providing 18 bit resolution, and is rated for operation in hazardous locations (Class I, Zone 1). M-320s have an allowable operating range of -40°C to 70°C and can operate in virtually any environment.

LPR Wireless Transmitters (available 2nd quarter 2015)
The LPR-320 is designed for on-line corrosion monitoring of water systems in electrically hazardous areas, and is compatible with M-320s and Yokogawa or Honeywell Wireless devices. This makes it ideal for refineries, chemical plants and process plants where corrosion must be monitored in a mixture of aqueous and non-aqueous systems. The LPR-320 patented high frequency measurement on two electrodes for compensation of solution resistance provides the highest accuracy and widest range of operation. This compensation has been further enhanced on this instrument to make it the widest range of operation of all the Cosasco LPR instruments.

Cosasco Wireless Extender (available 2nd quarter 2015)
The WE-320 is used to expand the wireless network when wireless transmitters are located distances that are out of wireless range direct to the gateway.

Field Wireless Management Station
R-Y410 field wireless management station manages and connects Cosasco Wireless System devices and other ISA100 wireless devices to a host system through a high security spread spectrum communication network. The R-Y410 is easily configurable and integrates into a distributed control system through serial or ethernet connections. The R-Y410 is scalable supporting up to 500 wireless devices and is certified for Class I, Div2, and Zone 2. The R-Y410 can communicate directly with the host system using Modbus TCP/IP integration over Ethernet interface and supports communication with host applications using OPC.

Field Wireless Access Point
The F-Y510 field wireless access point has a function to connect Cosasco wireless devices and a field wireless management station. The field wireless access point connects with field wireless devices by wireless communications, and connects with a field wireless management station by Ethernet or Wireless LAN. The field wireless access point is set up by the field wireless access point configuration software included in the field wireless access point.

Wireless Field Tool
The Wireless Field Tool is a portable handheld instrument specifically designed to configure Cosasco ISA100 Wireless devices. The Wireless Field Tool allows you to easily configure Cosasco Wireless devices in locations where configuration with a PC is not possible. The Wireless Field Tool is included with the M-320 installation kit.

Corrosion and Erosion Probes
Microcor Corrosion Probes are specially designed to provide advanced thermal performance, and reliable operation in all environments including sour service. Two forms of probe element are available – flush and cylindrical. Several mounting configurations are available, the most common of which allow the probes to be inserted and removed under full process operating conditions without shutdown.

Erosion Probes are used to detect sand erosion in oil and gas wells where sand production is common. There are two versions of Erosion Probes available. The S4500 with a specially designed element support shield is suitable for severe flow or high temperature applications. The S4700 with an angled element is exposed to the flow at a 45° angle, simulating a change in direction in the pipe.

Galvanic Probes
LPR probes provide a direct measure of corrosion rate and a qualitative pitting tendency of metals in electrolytes by the technique of linear polarization resistance. These probes employ two replaceable, identical electrodes which are mounted at the end of the probe by threaded, insulated studs. Two electrode probes are suitable for the majority of problems where LPR techniques are applicable. See individual data sheets for complete details.

Probe Adapters
The probe connecting adapter allows the Wireless Transmitters to be close-coupled to the probe and provides a mounting for the transmitter. The probe adapter is the preferred and simplest method of mounting the Wireless Transmitters (see probe data sheet for mounting clearance).
Access Fitting Assembly & Hollow Plug
The probe is mounted onto the pipeline or vessel through a Cosasco Access Fitting Assembly that includes both the hollow plug and body. The mounting configuration allows for safe installation and removal of corrosion or erosion probes under full operating pressure with Cosasco Retriever and Service Valve. See individual data sheets for complete details.

Cable
If high vibration or excessive temperature are present or direct mounting of the transmitter to the probe is not feasible, an alternative short connection cable can be used.

ICMS3™ or IIU Server
The Intelligent Interface Unit (IIU) for small to medium-size systems, and the Integrated Corrosion Management System ICMS3 for medium to large systems, communicates through a direct wired and ethernet online connection to integrate into your existing DCS and SCADA systems. The Field Wireless Management Station feeds the data from both the Wireless Transmitters and ISA100 Wireless devices into the ICMS3 or IIU via a Modbus interface. Eliminating the need for expensive custom software, the IIU cost-effectively illustrates metal loss and corrosion/erosion rates through the installed Cosasco Microcor Tools software. This permits operation as either a blind interface to a SCADA or DCS system, or as a stand-alone corrosion data storage and analysis system.

The Integrated Corrosion Management System ICMS3 is the most comprehensive and powerful online corrosion monitoring system available. It is ideally suited for medium to large scale systems, or for small systems with the need for future growth. The ICMS3 corrosion management server is the hub of the corrosion or erosion monitoring system, integrating several forms of corrosion monitoring and process data into one complete online system, shared over a variety of communication links. Corrosion and erosion monitoring can be managed as process parameters with constant data streaming into your preferred system using Corrdata Live Software. See ICMS3 and IIU data sheet for complete details.

System Integration
The Cosasco Wireless System is flexible and can be customized to integrate with your preferred Process Automation System. The Wireless Transmitters currently use ISA 100 Wireless communication allowing seamless integration with Yokogawa, Honeywell, and GE devices. Regardless of the Process Automation System you use the can be directly connected to your DCS through Modbus/OPC interface.

Product Certifications
Please see individual data sheets for product certifications.
System Integration Example: Connection to Field Wireless Management Station through a Wireless LAN Access Point
System Integration Example: Connection with Field Wireless Management Station through Field Wireless Access Point. Shown with Mesh and Star network configurations of both Cosasco and Yokogawa Wireless devices.
### Ordering Information

**Microcor ER Wireless Transmitter**  
See Microcor ER Wireless Transmitter Data Sheet

**LPR Wireless Transmitter** (available 2nd quarter 2015)  
See LPR Wireless Transmitter Data Sheet

**Cosasco Wireless Extender** (available 2nd quarter 2015)  
See Cosasco Wireless Extender – MWT-3905-WE Data Sheet

**Field Wireless Management Station**  
See R-Y410 Field Wireless Management Station Data Sheet

**Field Wireless Access Point**  
See R-Y510 Data Sheet

**Probe Adapters**  
P/N 745092 for Model M2000 & M3000 series probes  
P/N 745093 for Model M4000 & S4000 series probes (For permanent connection at 2500 PSI max.)  
P/N 745114 for Model M4000 & S4000 series probes (For permanent connection at 10,000 PSI max., when used with pressure retaining cover P/N 740095)

**Corrosion Probes**  
M2000, M3000 & M4000 Series (See Microcor Probes Data Sheet)

**Erosion Probes**  
S4500 & S4700 (See Erosion Probe Data Sheet)

**Access Fittings & Hollow Plugs**  
Cosasco Model 50-58 Access Fittings (See Individual Data Sheets)  
Cosasco Hollow Plug - P/N 550100-1-1

**Intelligent Interface Unit**  
See IIU Data Sheet

**ICMS Server**  
See ICMS3 Data Sheet

**Cables (Transmitter to Probe Cable with Transmitter Mounting Bracket)**

<table>
<thead>
<tr>
<th>Part</th>
<th>Description</th>
<th>Code</th>
<th>Cable Type</th>
<th>Cable Length</th>
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<tbody>
<tr>
<td>748497</td>
<td>M-320 Remote Mounting Kit</td>
<td>1</td>
<td>Retractable (unarmored)</td>
<td>L</td>
<td>748497 1 5</td>
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<tr>
<td></td>
<td></td>
<td>2</td>
<td>Retractable (armored)</td>
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<td></td>
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<td></td>
<td></td>
<td>4</td>
<td>Retrieveable (unarmored)</td>
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