Yokogawa to Provide New ISA100 Wireless™ Module with Built-in Antenna
-First licensing contract concluded with New Cosmos Electric-

Yokogawa Electric Corporation announces that in December it will begin providing sensor manufacturers a new wireless communications module with a built-in antenna. This new module is intended for use in wireless sensors, and will be provided to companies that develop and manufacture these products. Yokogawa has already concluded a contract to license the use of this wireless technology to New Cosmos Electric Co., Ltd., a gas detector manufacturer.

It is expected that this module will drastically reduce the amount of time required to develop ISA100.11a*1 compliant wireless sensors.

Development Background
Yokogawa advocates the Wireless Anywhere concept for the plant-wide use of wireless communications technology and is working hard to promote the use of ISA100 Wireless™*2 communications technology solutions. As part of this strategy, we have developed this module.

In plants, various sensors are used to measure temperature, pressure, level, gas concentration, vibration, and so on. To develop wireless sensors for such applications, not only do
manufacturers need to acquire the necessary wireless technologies, they must also comply with the radio regulations and explosion protection standards in each country. Based on the various technologies and knowledge that it has acquired through the development of field wireless systems, Yokogawa has developed a wireless communications module with a built-in antenna that can help sensor manufacturers significantly shorten the time needed for developing wireless sensor products.

New Cosmos Electric, a company with a solid track record in providing gas detection solutions to the manufacturing industry, is planning to develop a wireless gas detector. In view of its high reliability, flexible applicability, and network expandability, the company has decided on an ISA100 Wireless solution for this field wireless product. Accordingly, Yokogawa will provide this module and the technology assistance needed to develop a wireless gas detector.

**Advantages of Using This Module**

1. Speeds up wireless sensor development
   This module is comprised of an antenna and associated wireless communications circuitry. By installing this module on a sensor that includes components such as an interface circuit and power supply, a sensor manufacturer can greatly speed up the process of developing an ISA100 Wireless sensor.

2. Complies with radio regulations and explosion protection standards
   Based on its wealth of technologies and expertise in the development of field wireless devices, Yokogawa has been able to design a module that complies with over 100 countries’ radio regulations as well as all the major explosion protection standards. Sensor manufacturers thus do not need to certify that their sensors meet such regulations and standards, drastically shortening development time.

3. Compact and lightweight
   Including the built-in antenna, this module is only 116 mm long and 23 mm in diameter, and weighs just 100 grams. This allows the development of compact and lightweight field wireless sensors.
Main Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
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<tbody>
<tr>
<td>Wireless configuration</td>
<td></td>
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<tr>
<td>Communications protocol</td>
<td>ISA100.11a (IEEE802.15.4 compliant)</td>
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<tr>
<td>Frequency range</td>
<td>2,400 MHz to 2483.5 MHz (max. 15 channels)</td>
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<tr>
<td>Output</td>
<td>Max. +12 dBm (+2 dBi omni-directional antenna)</td>
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<tr>
<td>Communications distance</td>
<td>Max. 1,600 m (line of sight)</td>
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<tr>
<td>Sensor interface</td>
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<tr>
<td>Connection speed</td>
<td>9,600 bps to 57,600 bps (RS485 compliant)</td>
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<tr>
<td>Cable length</td>
<td>Max. 20 m</td>
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<tr>
<td>Input voltage</td>
<td>3.3 V±10%</td>
</tr>
<tr>
<td>Operational configuration</td>
<td></td>
</tr>
<tr>
<td>Enclosure class</td>
<td>IP66/67, NEMA4x</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>Standard model: –40°C to +85°C</td>
</tr>
<tr>
<td></td>
<td>Intrinsic safety and explosion protection model: –40°C to +70°C</td>
</tr>
</tbody>
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Note: Specifications may differ depending on when the module is provided.

Major Target Markets

Sensor manufacturers who are developing field wireless devices for use by the oil, petrochemical, chemical, pulp and paper, pharmaceutical, food, iron and steel, and other industries.

Yokogawa’s Approach to Field Wireless Communications

Field wireless systems utilize wireless communications networks to link a plant’s field devices with its control systems. Yokogawa designs these networks to comply with the ISA100.11a standard. In addition to being highly reliable, suited for a wide range of applications, and expandable, they are compatible with wired communications standards such as FOUNDATION™ fieldbus, HART®, and PROFIBUS. The International Electrotechnical Commission (IEC) is currently considering the adoption of the IEC62734 standard, which is based on ISA100.11a.

Yokogawa released the world’s first ISA100.11a compliant field wireless system devices and wireless pressure and temperature transmitters in July 2010. In addition to enabling
sophisticated control techniques in continuous processes, this gave customers a wider range of devices to choose from. In July 2012, Yokogawa released a reliable, large-scale field wireless system for use in plants and is now expanding the range of suitable monitoring and control applications for wireless technologies and devices.

In line with the Wireless Anywhere concept, Yokogawa will continue to expand its lineup of ISA100 Wireless solutions and provide either free of charge or on a license basis various fundamental technologies in modular form.

About New Cosmos Electric Co., Ltd.
New Cosmos Electric produces products in a variety of related fields based on its unique gas sensor technologies. These products include industrial gas detection systems, portable gas detectors, residential gas alarms, odor sensors, and products that incorporate odor sensors.

*1 ISA100.11a
A communications standard from the International Society of Automation (ISA) that is used by field wireless systems

*2 ISA100 Wireless
A technology that is based on the ISA100.11a standard. It includes ISA100.11a-2011 communications, an application layer with process control industry standard objects, device descriptions and capabilities, a gateway interface, infrared provisioning, and a backbone router.

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About Yokogawa Corporation of America
Yokogawa Corporation of America (http://yokogawa.com/us) is a leading provider of Industrial Automation and Test and Measurement solutions. Combining superior technology with engineering, system integration, project management, and maintenance services, Yokogawa delivers field-proven operational efficiency, safety, and reliability. Yokogawa Corporation of America is headquartered in Sugar Land, TX, and is the North American Division of Yokogawa Electric Corporation’s global network of 25 manufacturing facilities and 4 regional project engineering centers.
About Yokogawa

Yokogawa's global network of 88 companies spans over a total of 55 countries. Founded in 1915, the US$4 billion company conducts cutting-edge research and innovation. Yokogawa is engaged in industrial automation and control (IA), test and measurement, and other business segments. The IA segment plays a vital role in a wide range of industries including oil, chemicals, natural gas, power, iron and steel, pulp and paper, pharmaceuticals, and food. For more information about Yokogawa, please visit the website www.yokogawa.com.