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## **Honda prefers Mitsubishi Electric's "CC-Link IE Field Network" for vehicle body assembly line**

### **HONDA OPTS FOR 'MITSUBISHI ELECTRIC'!**

Honda Motor adopted "CC-Link IE Field Network" solution developed by Mitsubishi Electric for factory automation control devices and vehicle body assembly line in Yorii, its main plant opened in Saitama, Japan in 2013. Honda has increased efficiency and effectiveness of production and operation management at its Yorii Plant thanks to the Ethernet-based "CC-Link IE Field Network" which allows communication within a unified network from factory automation (FA) devices including production management information and safety signals.

Distinguished for groundbreaking innovations allowing creation of superior production technology and high efficiency systems, Honda Motor's Yorii Plant has been established as the "mother factory". As Yorii shares production technology and know-how gradually with domestic and international production hubs in line with its role as the "mother factory", it shall also be able to increase its overall global competitive ability. Yorii Plant makes use of **Mitsubishi Electric's "CC-Link IE Field Network"** FA solution in order to ensure higher production line efficiency. The solution has been selected with the aim to build a simple and robust network worthy of the mother factory in addition to ensuring enhanced visualization of FA control devices.

#### **Flexible solutions to safety functions**

During the construction of a control network for the vehicle body assembly line at Honda's Yorii Plant, the first idea that came to mind was to establish a flat construction linking the whole plant as the overall network architecture. But given the possibility that a single failure could stop the entire plant's network, they decided to use multiple networks which required a sturdy but simple construction for transfer of know-how to other factories. While considering the system architecture, Honda team also identified two functions essential for the network one of which was the centralized visualization of FA control devices while the other was to ensure communication of safety signals. Targeting

a system in which FA control device setup, monitoring, failure detection and other activities could be centralized through the network, Honda was able to avoid serious time loss as it decided to incorporate safety signals into the network in order to achieve a structure that would allow flexible line changes.

At that point, Honda focused on **Mitsubishi Electric's "CC-Link IE Field Network"** solution with a view realizing this system at Yorii Plant. With **"CC-Link IE Field Network"**, a single Ethernet cable not only allows communication of control information for PLCs and controllers, but also maintenance and safety information from the connected FA devices.

#### **"We constructed an optimal system"**

Explaining the reasons for selecting Mitsubishi Electric at Yorii Plant, **Honda Motor Co. Ltd. Saitama Works, Yorii Plant, Yorii Management Block, Maintenance Supervisor Taku Yokomukai** said "In order to fulfill the projected production numbers, the vehicle body assembly line was going to have to be maintained at a near constant 100% operating rate, requiring reliability and guaranteed performance from the FA control devices. So when we were selecting FA control devices for the Yorii Plant's vehicle body assembly line, our in-house proposal was for Mitsubishi Electric's products, which had proven themselves over many years at our Sayama plant (Japan), and which I myself have always held in high regard. Because the **"CC-Link IE Field Network"** is highly compatible with Mitsubishi Electric's control devices, we felt that we could construct an optimal system by combining the two".

#### **Increasing operation management efficiency**

Beginning operation in July 2013 and moving to full operation in September 2013, Honda Yorii Plant observed a significant increase in the effect of visualization that was the original aim, with the help of Mitsubishi Electric's **"CC-Link IE Field Network"** solution. The diagnostic functions of **"CC-Link IE Field Network"** make it possible to locate the problem faster even when there is any trouble with the equipment or FA control devices. Being extremely satisfied with Mitsubishi Electric's responsiveness regarding system construction and support, Honda uses as many as 50 Mitsubishi Electric PLCs in its vehicle body assembly line. "We're able to get a centralized overview of the line status or any trouble that may be happening when a necessary signal isn't being received" remarked **Taku Yokomukai**, "This makes operation management efficiency much, much higher. The recovery time has also been shortened".

“CC-Link IE Field Network” allows for line expansion and the interlock can be added in Mitsubishi Electric’s Safety PLC with a view to reducing the workload considerably. Honda has assessed these merits highly in-house, and introduced a similar system to its new Mexico plant, which began operation in January 2014.

#### **About “CC-Link IE Field Network”**

*“CC-Link IE Field Network” is an Ethernet based field network following the physical and data layers as defined by IEEE 802.3 (1000BASE-T). Through the work of its industry group, the CC-Link Partner Association, it has become widely adopted and considered a standard. As well as covering high-speed I/O and control of distributed controllers, it offers flexible network topology options such as star and ring types, allowing great freedom in the arrangement and configuration of connected devices. In addition, not only does it support management (setup and monitor) and maintenance (monitoring and failure detection) of controller devices, but it also features a safety communication function allowing sharing of safety information among multiple safety PLCs.*

#### **About Mitsubishi Electric Corporation**

*With over 90 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Embracing the spirit of its corporate statement, Changes for the Better, and its environmental statement, Eco Changes, Mitsubishi Electric endeavors to be a global, leading green company, enriching society with technology. The company recorded consolidated group sales of 4,323.0 billion yen (US\$ 36.0 billion\*) in the fiscal year ended March 31, 2015.*

For more information visit: <http://www.MitsubishiElectric.com>.

#### **About Mitsubishi Electric Factory Automation Business Group**

*Offering a vast range of automation and processing technologies, including controllers, drive products, power distribution and control products, electrical discharge machines, electron beam machines, laser processing machines, computerized numerical controllers, and industrial robots, Mitsubishi Electric helps bring higher productivity – and quality – to the factory floor. In addition, our extensive service networks around the globe provide direct communication and comprehensive support to customers.*

#### **About e-F@ctory**

*e-F@ctory is Mitsubishi Electric’s integrated concept to build reliable and flexible manufacturing systems that enable users to achieve many of their high speed, information driven manufacturing aspirations. Through its partner solution activity, the e-F@ctory Alliance, and its work with open network associations such as The CC-Link Partners Association (CLPA), users can build comprehensive solutions based on a wide ranging “best in class” principle. In summary, e-F@ctory and the e-F@ctory Alliance enable customers to achieve integrated manufacturing but still retain the ability to choose the most optimal suppliers and solutions.*