<Company Profile>

Location	5-7-20 Motomachi-dori, Chuo-ku, Kobe 650-0022, Japan
Phone	078-341-1837 (main number)
Fax	078-341-4970
Website	http://www.kyokko.co.jp/ (in Japanese)
No. of employees	201
Capital stock	85,000,000 yen
Established in	November 1952
Representative	Shin-ichi Hatada, President and Representative Director

<Business Overview>

Development, design, and manufacture of various types of sensors, remote controllers, and control devices

<Technology>

Our world-class unique technologies are rapidly establishing a presence among the world's cutting-edge technologies, ranging from automatic doors on *shinkansen* to substrates installed in an artificial satellite, recognized by JAXA.

Automatic door for trains

Photograph of the satellite “Tsubame”

(Courtesy of JAXA)

Kyokko Electric Co., Ltd. is the first company in Japan to develop a controller for automatic doors, and continues to develop ingenious new technologies, mainly such as sensing and control technologies. Among our products, devices grabbing a large slice of the domestic market are our sensors and controllers for gangway connections between train cars on *shinkansen*. We contribute to creating comfortable spaces in trains by applying state-of-the-art technologies to the core technologies we have accumulated over many years in the field of building doors. In addition to high sensing accuracy, which can sense motions when people approach a door, the sensors have enough durability to withstand tens of thousands of opening and closing motions, and enough vibration resistance to endure the vibrations of running trains. Utilizing technologies only we have developed, our company supports people's safe and comfortable daily lives.

Our outstanding capabilities in technological development are also employed in the space field. The artificial satellite

Tsubame, developed by the Japan Aerospace Exploration Agency (JAXA), was launched in 2017. Onto a high-precision camera for monitoring the Earth, JAXA adopted our compact high-resolution optical sensor, which achieved the strict standards employed in the space field. Our sensor helps the high-precision camera of the fast-moving satellite capture objects on the ground at high resolution without blurriness.

Kyokko Electric will continue creating the future through its development and manufacture of both products close to people's lives and that contribute greatly to society and systems using our world-class advanced technologies.

Controller for the side doors of railroad cars

Sensor for automatic doors

[History of development]

Kyokko Electric was requested by a university's department of agriculture to develop a sensor for breast health screening of milk cows. Since the company had tried branching out into a new business, we conducted research on the sensor for three years. As a result, we succeeded in developing a new sensor, but it was not commercialized. However, a high-precision spectroscopic analysis device that we had developed during the sensor's research received recognition and Kyokko Electric joined the research and development project of an artificial satellite being launched by a national university. JAXA focused on time delay integration (TDI), which worldwide only Kyokko Electric has succeeded in developing while engaged in the project. Consequently, we were selected as a research-and-development partner for a compact high-resolution optical sensor to be mounted on the super-low-altitude test satellite Tsubame.

[Originality]

Tsubame is the first Earth observation satellite to conduct operations in very low orbit, an unexplored region for existing satellites. A super low orbit (200 km to 300 km) is close to the Earth so a satellite can monitor the Earth at higher resolution than before. However, because the satellite is moving at high speed, causing objects on the ground to become easily blurred, the camera needs a sensor that helps it make exposures at high resolution. What Kyokko Electric developed was a time delay integration (TDI) device, an extra-small capturing device for satellites, that supports Tsubame's main mission. This is a peerless technology that captures clear images of moving objects on the ground at low light levels by making the image signal travel through the lines of the charge-coupled device (image sensor) to make multiple exposures.

[Future development]

Kyokko Electric aims at finding new market opportunities through development of new ways of using its world-class TDI technology by combining our competitive sensing technologies to TDI. In today's society where the spread of IoT is accelerating, the uses of image sensors are expected to expand further from existing uses for smartphones and digital cameras to industrial devices such as in automobiles and image testing equipment, medical and welfare facilities, and devices used for the space industry. We will further pursue advanced technologies that can work on an international level using our sensing technologies with accurate recognition capability and the TDI technology with high-precision image capturing capability.

<Topics>

Easier and more convenient—SmartFit realizes the easiest IoT in the world.

"Because our machines are old, we can't measure operating rates." "We want to monitor our equipment for 24 hours." "We want to digitize our production information." . . . To meet such demands from plants, Kyokko Electric has developed an all-in-one device for introducing IoT. We are promoting an IoT that can be used simply by installing, connecting, and powering on a device. Only by installing the dedicated device SmartFit, users can measure temperature, vibration, and illuminance as well as visualize equipment operations to monitor the status of machines remotely. In addition, SmartFit's built-in sensors enable deployment of IT solutions to older machines by connecting production lines and transportation robots automatically via networks. Moreover, we provide functions of "measuring, connecting, and visualizing" as a one-stop service by incorporating a sensor substrate to the device as a component to achieve IoT introduction immediately.

Developing an original artificial intelligence as a key next-generation technology!

Because artificial intelligence (AI) and next-generation robots are rapidly gaining increased attention, it is said that the AI bubble is now bursting. While many companies have failed to keep abreast of speedily changing booms, Kyokko Electric decided to start developing AI by utilizing its accumulated skills. Based on its 50 years of accumulated achievements in sensor development and corporate culture that respects originality, the development project has been steadily progressing. We will continue developing and improving sensing technologies to ensure they become key next-generation technologies in various industrial fields.

<Corporate History>

1947 Kyokko Radio Shokai is founded.
1952 Kyokko Radio Shokai is incorporated.
1959 The company name is changed to Kyokko Electric Co., Ltd.
1962 The Akashi Plant is newly established.
1969 Headquarters building is built.
1994 Nabco Ltd. (current Nabtesco Corporation) takes a stake.
2001 ISO 9001:2000 certification is obtained.
2008 The Okubo Plant is newly established.
2013 Shin-ichi Hatada takes the position of President.