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Daikin Awarded “Plant of the Year 2023” for DX in the Process Industry

Daikin Industries, Ltd. was recently awarded “Plant of the Year 2023” by the FieldComm Group (Headquarters: Austin, Texas, United States). Established in 2002, this globally recognized award is bestowed to a company that has advanced digital transformation (DX) through measurement instruments, introduced innovative processes, and achieved significant improvements in the process industry. Daikin is only the second Japanese plant to receive this honor and will be formally presented with the award at a ceremony scheduled in Tokyo on February 27, 2024.

The FieldComm Group, which selected Daikin for this award, is an international nonprofit with approximately 380 member companies and organizations related to the process industry, including manufacturers, universities, and research institutions. The organization performs activities for the development, incorporation, and implementation of communication technologies for the process industry. Each year the organization selects one company for recognition as its “Plant of the Year.”

The Daikin Kashima Plant (Kamisu City, Ibaraki Prefecture), which manufactures chemical products, was selected for 2023. The plant became the world’s first production facility capable of detecting equipment anomalies in real time by using AI to monitor internal data (HART signals) from instrumentation devices, which had never before been utilized, and process data. Daikin drew high praise for successfully improving the accuracy of its anomaly detection system by combining and analyzing correlated internal data (HART signals) from instrumentation devices and process data, even in locations where there are no sensors. The company has jointly filed a patent application with Azbil Corporation, which develops measurement equipment.

While several online AI anomaly detection systems exist, there may be cases in which highly accurate monitoring is not feasible due to the difficulty of installing sensors or insufficient sensor information. This newly developed system combines internal data (HART signals) from instrumentation devices, which had not previously been utilized, with correlated process data to provide important functions for plant control without adding new sensors, enabling early detection of anomalies in instrumentation devices such as control valves.

Since test operations began in 2021, this system has detected six anomalies thus far and prevented production stoppages by implementing maintenance before stoppages could occur. Daikin intends to gradually introduce this system throughout the Kashima Plant as equipment is updated and will expand it to global bases with the aim of detecting quality anomalies at an early stage.