Mogensen GmbH & Co. KG, based in Wedel, near Hamburg, delivered a glass sorting plant to a Scottish recycling company. The automation was assigned to miprotek GmbH from Buxtehude. To connect the motor feeder to the automation system, miprotek decided – for the first time – to use the IO-Link communication interface because of its simple wiring technology.

Well over 100 electric motors transport the glass in the plant, which measures 50 m x 20 m; most of them are direct starters. As a result, there are about 100 feeders with the same set-up in the control cabinets: Sirius 3RT2 contactors and 3RV2 motor starter protectors. Among other things, the plant supplier miprotek was impressed by the simple plug connections for motor starter protectors and contactors.

Increased modularity

The control cabinet segments needed to be easily separated for transport. This was not a problem at all with IO-Link. The feeder connections on the IO-Link master can be unplugged, thus separating the fields from the control circuit. Up to four feeders can be connected to one channel of the IO-Link master. Only three wires on the first feeder are needed to do this. The master has four channels and is located in the Simatic ET 200S distributed I/O system. This allows up to 16 direct drives to be controlled by one master. There are 10 such masters in 12 distributed I/O stations in the glass sorting plant. These are connected via Profinet with the Simatic S7-317 PN/DP plant control system, creating a continuous chain of signals from the control system to the field level, thus significantly simplifying operation and plant diagnostics.

Easy visualization

Another example of IO-Link’s user-friendliness is its integration into the Simatic WinCC flexible plant visualization system. For this purpose, miprotek wrote a function block in the SCL programming so that the plant operator can see the status of each individual drive on the screen and diagnose warnings and failures with a click of the mouse. In addition, the integration into Totally Integrated Automation simplifies remote servicing, which is important for miprotek, as it has end customers around the globe. Together with Profinet, IO-Link allows for diagnostics all the way down to the feeder level. Already the first use showed that this control technology significantly simplifies the entire process, from engineering to installation, commissioning, and service. This is why using IO-Link was an easy decision from the beginning.

Crystal-clear advantages

For the first time, a glass sorting plant’s electrotechnical supplier used IO-Link for the communication between the field level and the control level. The result: time and space savings, reduced wiring requirements and errors, and easy diagnostic options all the way to the drive.

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