

Hacking Guard

A gas transfer station of the Villingen-Schwenningen municipal utility company uses Turck's IMX12-CCM to monitor control cabinets and thus offers reliable protection from manipulation

"As energy suppliers we are legally required to protect our plants and data," says Rudolf Spadinger, head of the control technology department at the Stadtwerke Villingen-Schwenningen GmbH (SVS) utility company, as he passes through a gas transfer

station. The gas of the major suppliers is transferred at the transfer station to local suppliers like the SVS municipal utility company, which it then passes on in its distribution networks to industrial and domestic end consumers.

The mounting on the DIN rail is considerably easier than the mounting of a door lock with cam or solenoid switches



»I simply fit the cabinet guard on the DIN rail and link it to an indicating contact on a tele-control installation – that's it.«

Rudolf Spadinger | SVS municipal utility company



Increased security requirements for utility companies

Gas or electricity suppliers with their plants are categorized as critical infrastructure installations (CRITIS). They are subject to special security requirements and must provide their plants with an increased level of security, particularly their IT installations. As an electricity supplier, SVS has implemented an information security management system (ISMS) that ensures the security and the protection of the information technology. The system implements statutory and legal requirements such as the CRITIS regulation from the Federal Office for Information Security.

As part of the ISMS, SVS implemented several measures to reliably protect their infrastructure, including the control cabinets. In his capacity as head of control technology, Rudolf Spadinger is responsible for the security and protection of the control technology in the individual plants of SVS. He therefore searched for a solution to monitor the door locks of the control cabinets in the distribution panels of the utility company.

Fast installation of the cabinet guard on the DIN rail

“We have considered the use of a mechanical cam switch or a solenoid switch on the door – but mounting would have required considerable effort,” Spadinger describes the reasons for his choice. Today SVS uses Turck's IMX12-CCM cabinet guard instead. “I simply fit the cabinet guard on the DIN rail and link it to an indicating contact on a telecontrol installation – that's it.” Every opening of the control cabinet is registered in the control center. Coworkers can verify whether

openings were authorized. This additional protection is very important as the transfer station is also used by other infrastructure companies.

Another benefit compared to the mechanical solutions is the fact that in this way the monitoring of the control cabinet cannot be hacked. A mechanical contact could be blocked when the door was opened and would therefore be defeated. Besides the optical sensor for monitoring the door closure, the IMX12-CCM also features two additional integrated sensors: a temperature sensor and an air humidity sensor.

Door closure, air humidity, and temperature monitoring in a single device

The IMX12-CCM also comes with an onboard data logger. Thanks to the integrated real-time clock it can store events and data with a time stamp. If required, the cabinet guard also signals its measured values and the exceeding of taught limit values via IO-Link to PLCs or control systems.

Interface technology records pressure, temperature and volume

SVS also uses conventional interface technology from Turck in a transfer station. The devices safely separate the signals from the Ex area and then transfer them to the telecontrol installation connected to the control center. Gas pressure, temperature and volume are measured during the transfer – also in order to calculate the final price for the customer. This is not calculated in cubic meters but in kilowatt hours. To do this, the calorific value of the gas must be specified, and these measured values and others are also collected.

The upgrade of its communication systems has enabled the Villingen-Schwenningen GmbH utility company to monitor and immediately determine who has access to the control cabinets. This is also ensured by devices such as cameras or structural measures. The monitoring of control cabinet doors in the safe hands of Turck's cabinet guard series requires little effort.

QUICK READ

As operators of critical infrastructure systems, gas, electricity and water suppliers are legally required to protect their IT systems with suitable measures from manipulation and unauthorized access. Turck's IMX12-CCM cabinet guard is predestined for this task. The monitoring of the door closure with the compact rail-mounted device is faster and easier than with conventional door locks with mechanical contacts.

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