SECURE NETWORKS OF DISTRIBUTED FACILITIES

Task

For efficient building management, it is advisable to combine the technical monitoring of geographically dispersed facilities of residential buildings, factories, commercial or public buildings. Transmission paths outside self-contained buildings and properties can however be exposed to unauthorised access. Safety functions and confidential data are therefore threatened and demand additional protection against hackers. GePro mBH rose to this challenge with a model KNX installation.

Solution

The KNX systems of the individual, dispersed buildings generally communicate via an internet protocol based for example on Ethernet using an unsecure point-to-point connection. Now that KNX IP Secure devices are available, the KNX IP communication can be protected cost-effectively using additional encryption and authentication of telegrams along the entire IP transmission path.

Implementation

To simulate the situation of distributed facilities, KNX IP backbone and control centre, the sample installations are equipped with KNX IP Secure routers from ABB and Enertex. In the buildings, KNX sensors simulate the building functions for temperature, humidity, CO_2 sensors, leakage sensor, dew formation sensor, valve drive and switch actuators. Various KNX control panels adopt central operating and control tasks buttons and LED displays as well as a KNX alarm and signal panel.

Functions

Room functions, vents, access control and alarm systems can be controlled and operated from a central location. Status signals, faults and alarms are displayed and evaluated centrally via the building control system. Signals can be acknowledged and switching commands can be triggered via central panels.

Benefits

The IP communication between distributed KNX installations can be better secured against malicious tampering with KNX IP Secure. All the IP telegrams which are transferred here on the basis of LAN/Ethernet are authenticated and encrypted.

KNX Secure components

- KNX IP Secure Router, Enertex
- KNX IP Secure Router, ABB

Further KNX components

- KNX signal and alarm panel, GePro
- KNX panel, GePro
- KNX sensor, Arcus Control
- KNX leakage sensor, Elsner
- Dew formation sensor, Insta
- KNX motor valve drive, Jung
- KNX switch actuator, Siemens

GePro Gesellschaft für Prozesstechnik mbH

GePro – Gesellschaft für Prozeßtechnik mbH
Dipl.-Ing. Dirk Müller
Heinrich-Heine-Ring 78
18435 Stralsund
Germany
+49 (0) 3831 39 00 55
info@gepro-mv.de
www.knx-taster.de

The routes between facilities can be far-reaching and dangerous, at least for confidential data. The Ethernet connection with KNX IP Secure protects simply and cost-effectively against unauthorised access.