

# Frankfurt Port Management Association

## Complete MSR/DDC control on the basis of KNX/EIB



**Konnex Association**

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The administration building with glass facade

EIBMARKT GmbH technically equipped both buildings of the Frankfurt Port Management Association with

KNX/EIB. This project was granted a prize during this year's KNX Award. The major asset of the project lies in the realisation of a complete MSR/DDC control on the basis of KNX/EIB and the integration of KNX/EIB into the Facility Management.

The Frankfurt Port Management Association operates the port railway with a network of 78 kilometres and a total surface of 1.46 million square meters. It dispatches approximately 2500 ships and has a total transfer of goods of 13.4 millions of tons per year. The high quality requirements of the company are reflected in the facility management. The infrastructural, commercial and technical management are of paramount importance for the internal logistics, coordination of working procedures and the management of tenants.

The main administration building, which was built in 2002, consists of five floors and its exterior is made entirely out of glass. It was therefore vital to achieve an optimum integration of all application domains to make efficient use of energy. This building communicates with the branch office constructed in 2004 via an optical fibre connection (KNX/EIB and computer network).

Projektnummer: Z4/04/E

Country: Germany

Year of Construction: 2002 - 2004

### Area of Application

- Residential buildings
- Family home
- Apartment block
- Residential care home for senior citizens
- Residential care home for the disabled
- Functional buildings**
- Office block / public office**
- Commercial enterprise
- Retail office
- Restaurant and Hotel
- Cultural building (cinema, theatre, museum, etc.)
- Clinic / hospital
- Educational building (school, college, etc.)
- Leisure facility (sports center, spa, etc.)
- Industrial building
- Other

### Facilities

- Lighting**
- Shading/Light control**
- Heating, ventilation, air conditioning**
- Alarms**
- Technical monitoring**
- Energy management**
- KNX visualisation**
- Interfaces to other systems**
- Remote monitoring/-operation**
- Other application**

### Scope

- Number of areas/lines: 3/19
- Number of KNX devices: 869

### Advantage of KNX in this project

- KNX has been used for all applications including the control of primary circuitries like the ventilation system
- Connection between the KNX building and room control and the facility management system to report the technical and administrative status.
- Control of complex systems to achieve a higher comfort level with an optimised energy efficiency
- Uniform user-interface for all installations.

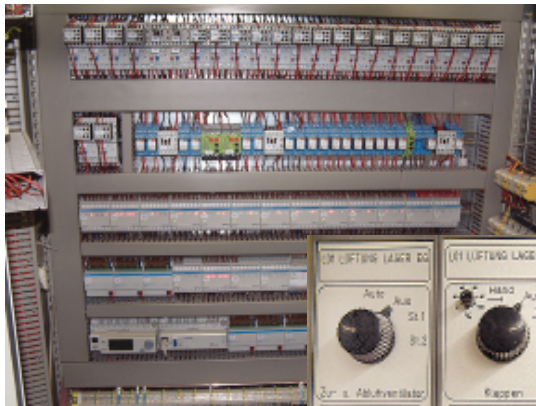


Auszeichnung für:

**Vielfalt der Gewerke und  
HLK-Automation,  
KNX Award 2004**

# The variety of KNX/EIB in this project

Projektnummer: Z4/04/E



**KNX/EIB-regulator for Heating, Ventilation and airconditioning**



▼ EIBMARKT realised the

following control functions with KNX/EIB as well as interfaces to other systems in the Frankfurt Port Management Association:

1. Automation and management level
2. Smoke and heat extraction system
3. fire alarm system
4. access control of doors and gates
5. Ventilation monitoring
6. modular individual HVAC room control
7. monitoring of fire protection valves
8. fault, operation and alarm signalling with priority management
9. central metering management (function module)
10. energy and service management
11. history management
12. interior and exterior lighting control
13. shutter control with astronomical program and day light control
14. cyclical monitoring of important systems and system parts
15. Security monitoring of KNX process controls
16. emergency applications in case of KNX/EIB faults
17. Fault monitoring of the KNX/EIB server
18. process and energy optimisation
19. network visualisation
20. logging of operational data
21. weather station
22. remote control, activation of remote server

**Each room can be accessed via an individual page in the visualisation program**

## Facility Management with KNX/EIB and visualisation

A particular project task consisted of linking the technical and commercial management to KNX/EIB. Various meter values (KNX/EIB or M-Bus) for hot/cold water, water volume, central gas meters, central water meters and all electrical meters are centrally logged and are technically and for invoicing purposes managed, including history, energy and metering management, invoice documentation, billing as well as service management.

The central automation and management station is located in the server room of the administration building. From this building, all steering and control actions are monitored and parameterised in the other buildings via a visualisation software. For the individual room automation, a separate operating page is available, on which the various possibilities are shown. ▲▲

## Involved companies

### Building owner:

Frankfurt Port Management Association

### KNX system integrator:

EIBMARKT GmbH, Friedensstrasse 54, D-08523 Plauen, Tel. +49-3741-709560, www.eibmarkt.de

## Technical details

The data points can efficiently be transmitted via the KNX network by using structured data point types and the high speed KNX/IP tunnelling protocol. Example of such a KNX structured data point type:

Operational mode (telegram type EIS6, 1Byte)

- Bit 0...2 - 0=off/1=level1/2=level2/...
- Bit 3 - 0=Auto/1=manual
- Bit 4 - 0=o.k./1=repair switch
- Bit 5 - 0=o.k./1=emergency control
- Bit 6 - 0=o.k./1=disturbance device
- Bit 7 - 0=o.k./1=disturbance control