



# N 148/22 IP Interface N 146/02 IP Router GAMMA *instabus* – Several Times Faster

## GAMMA Building Management Systems



Communication using the KNXnet/IP standard opens up completely new applications for building management systems such as the operation of equipment in distributed locations through existing data networks.

- **Simple system design and access at any time from any place thanks to KNXnet/IP**

Fast communication between KNX lines, extension of a KNX system beyond a building through use of LAN and WAN connections, direct forwarding of KNX data to any network user and KNX remote configuration from any network access point are clear-cut advantages.

- **Flexible in use**

IP interface and IP router draw their operational voltage preferably from the network cable using "Power over Ethernet" in accordance with IEEE 802.3af. Up to four KNXnet/IP tunneling connections and one ObjectServer connection are available.

### Highlights

- Up to four KNXnet/IP tunneling connections and one ObjectServer connection
- Fast communication between KNX lines, areas and systems (KNXnet/IP routing)
- Direct access from any point in the IP network to the KNX installation (KNXnet/IP tunneling) for remote maintenance, remote configuration and remote diagnostics
- Easy integration of visualization systems and facility management systems

# Gateways, interface converters

## KNX/Ethernet

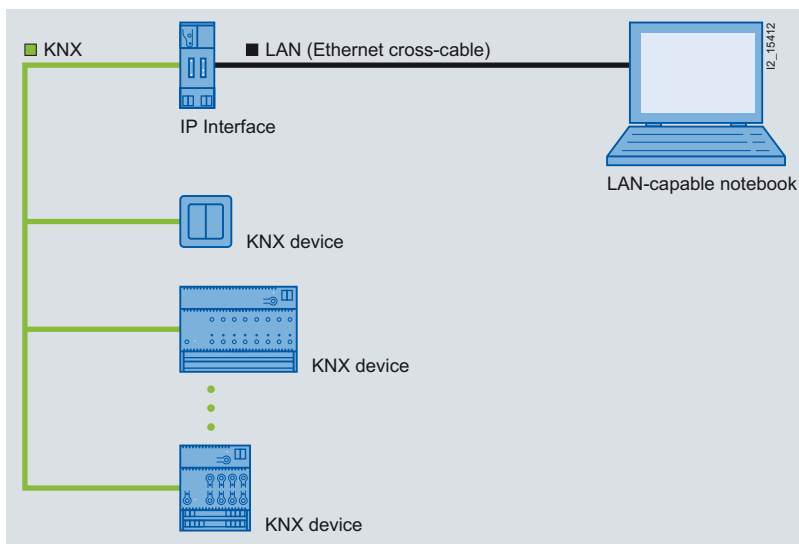
### Overview

#### IP interface and IP router

As an alternative to "Power over Ethernet" it is possible to draw the operational voltage through the second terminal block from a safe 24 V AC/DC low-voltage supply or from a bus voltage supply (unchoked voltage, 29 V DC). The N 148/22 IP interface as well as the N 146/02 IP router offer four KNXnet/IP tunneling connections and one ObjectServer connection for unlimited access to the KNX network from several applications.

Additional only the N146/02 IP router provides fast communication between KNX lines, areas and systems (KNXnet/IP routing) through multicast-capable data networks using the Internet Protocol (IP). The assignment of network parameters is performed either manually via ETS, or automatically by a DHCP service in the network, or by the device itself (AutoIP). These devices are compatible replacements for the N 148/21 IP interface and for the N 146 IP router.

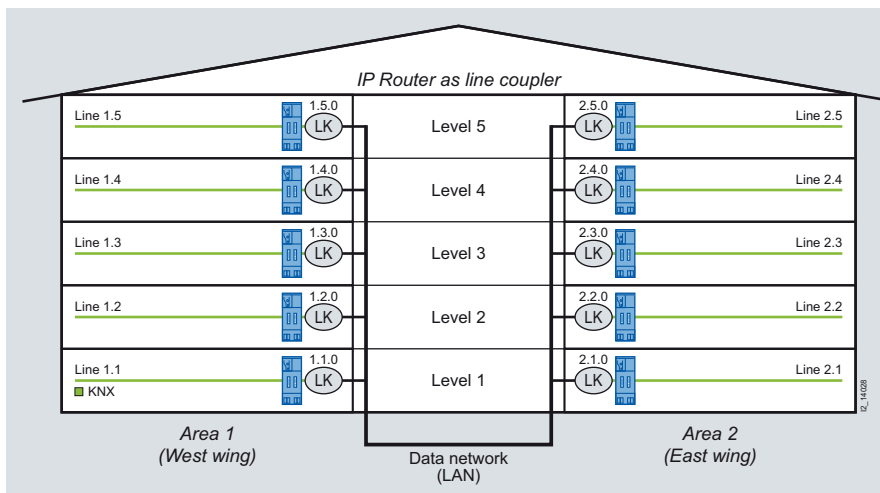
#### Faster downloads save time



With the new KNXnet/IP standard, KNX telegrams can be transmitted over Ethernet (LAN). This enables new applications and solutions.

Existing network infrastructures and technologies are used to transmit KNX data over greater distances.

#### Innovative topology




In this innovative topology all line couplers are replaced by IP routers.

Backbone couplers are no longer required. This configuration enables the linking of each individual building level over Ethernet (LAN) and the utilization of existing LAN networks.

Furthermore, the correct configuration of the IP router makes the commissioning of both large projects and smaller individual projects quicker and easier to manage.

## Technical specifications

|   | Type            | Description   |
|---|-----------------|---|
|  | <b>N 148/22</b> | <b>N 148/22 IP interfaces<sup>1)</sup></b> <ul style="list-style-type: none"> <li>For communication between KNX devices and PCs and in conjunction with a LAN modem or DSL router for remote access to a KNX installation</li> <li>For use as an interface for the ETS3 and to a visualization unit</li> <li>Uses the KNXnet/IP protocol</li> <li>Up to 4 KNXnet/IP tunneling connections for parallel bus access of ETS and additional PC software</li> <li>ObjectServer connection to the visualization unit through network connections with long signal runtimes</li> <li>Automatic assignment of additional physical addresses for KNXnet/IP tunneling and ObjectServer connections without an additional tool</li> <li>Assignment of the network parameters by the installer through ETS, automatically by a DHCP service in the network or, if there is no DHCP service, by the device itself (AutoIP)</li> <li>Indication of the type of network parameter assignment if requested on the device</li> <li>5 LEDs for indicating that the device is ready-to-run, KNX communication and IP communication</li> <li>Power supply to the electronics via "Power over Ethernet" in accordance with IEEE 802.3af or alternatively by an external safe voltage source for 24 V AC/DC</li> <li>Plug-in terminal block for connection of the external power supply unit</li> <li>Integrated bus coupling unit</li> <li>Bus connection via bus terminal</li> <li>Ethernet connection through RJ45 socket</li> <li>Modular installation device for mounting on TH35 EN 60715 mounting rail</li> </ul>  |
|   | <b>N 146/02</b> | <b>N 146/02 IP routers<sup>1)2)</sup></b> <ul style="list-style-type: none"> <li>For interconnection of bus lines or bus areas over a fast data network (Ethernet 10BaseT) with Internet Protocol (IP)</li> <li>Can be used as line, area or network gateway (worlds gateway)</li> <li>For communication between KNX devices and PCs and in conjunction with a LAN modem or DSL router for remote access to a KNX installation</li> <li>For use as an interface for the ETS3 and to a visualization unit</li> <li>Uses the KNXnet/IP protocol</li> <li>Up to 4 KNXnet/IP tunneling connections for parallel bus access of the ETS and additional PC software</li> <li>ObjectServer connection to the visualization unit through network connections with long signal runtimes</li> <li>Automatic assignment of additional physical addresses for KNXnet/IP tunneling and ObjectServer connections without an additional tool</li> <li>Assignment of the network parameters by the installer through ETS, automatically by a DHCP service in the network or, if there is no DHCP service, by the device itself (AutoIP)</li> <li>Indication of the type of network parameter assignment if requested on the device</li> <li>5 LEDs for indicating that the device is ready-to-run, KNX communication and IP communication</li> <li>Power supply to the electronics via "Power over Ethernet" in accordance with IEEE 802.3af or alternatively by an external safe voltage source for 24 V AC/DC</li> <li>Plug-in terminal block for connection of the external power supply unit</li> <li>Integrated bus coupling unit</li> <li>Bus connection via bus terminal</li> <li>Ethernet connection through RJ45 socket</li> <li>Modular installation device for mounting on TH35 EN 60715 mounting rail</li> </ul> |

<sup>1)</sup> During configuration of the IP interface, the installation engineer should carry out all the necessary settings; the network parameters can be assigned either manually by the installation engineer through ETS, automatically by a DHCP service in the network, or by the device itself (AutoIP).

<sup>2)</sup> The IP router will function smoothly as a line coupler (KNXnet/IP routing) only if it is equipped with network components that support IP multicasting. In particular, network/LAN routers must support or be configured so that they can relay IP multicast datagrams. The IP multicast address 224.0.23.12 is reserved internationally for KNXnet/IP routing.

## Selection and ordering data (Dated 09/2009)

|   | Type            | Version                       | DT | Order No.             | PU      | PS*<br>P. unit | PG  | Weight<br>per PU<br>approx. |
|---|-----------------|-------------------------------|----|-----------------------|---------|----------------|-----|-----------------------------|
|   |                 |                               |    |                       | Unit(s) | Unit(s)        |     | kg                          |
|  | <b>N 148/22</b> | <b>N 148/22 IP interfaces</b> | A  | <b>5WG1 148-1AB22</b> | 1       | 1              | 030 | 0.100                       |
|   |                 |                               |    |                       |         |                |     |                             |
| 5WG1 148-1AB22  |                 |                               |    |                       |         |                |     |                             |
|  | <b>N 146/02</b> | <b>N 146/02 IP routers</b>    | A  | <b>5WG1 146-1AB02</b> | 1       | 1              | 030 | 0.100                       |
|   |                 |                               |    |                       |         |                |     |                             |
| 5WG1 146-1AB02  |                 |                               |    |                       |         |                |     |                             |

\* You can order this quantity or a multiple thereof.

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