

90 EIB RANGE

Home and building automation



THE KNX/EIB BUS SYSTEM AND ITS ARCHITECTURE

BUS systems constitute a modern technology for the realization of systems in residential and commercial buildings and industrial complexes. This technology is offered as a valid alternative to traditional installation techniques. The range of GEWISS EIB BUS products is able to manage broad solutions for home and building automation.

DOMESTIC RANGES



CONTROL

TEMPERATURE
ADJUSTMENT

MOVEMENT
DETECTORS

TECHNICAL
ALARMS

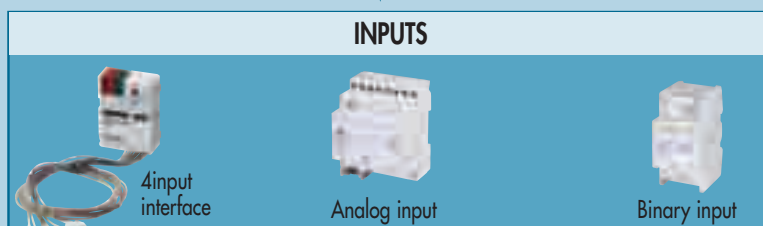
EN 50022 MODULES



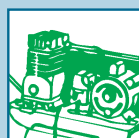
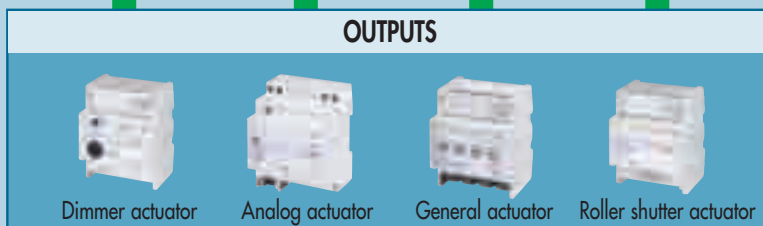
CONTROL AND
INDICATORS

MANAGEMENT

CONTROL



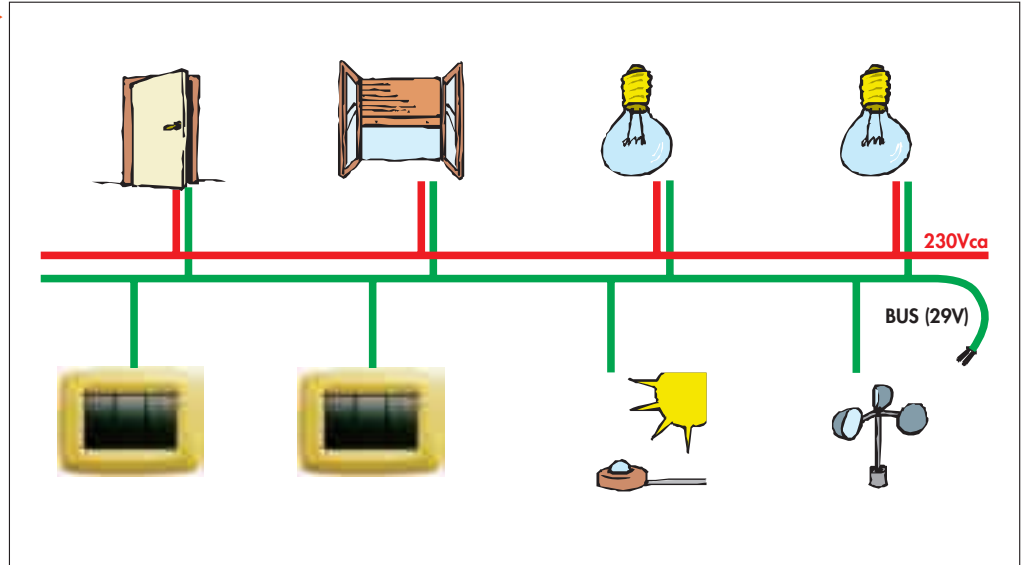
INTERFACE
RS 232



CHARACTERISTICS AND ADVANTAGES

LESS TIME REQUIRED FOR INSTALLATION

- The control lines are fully replaced by only one BUS line (duplex cable). Therefore, there are no shunts, dual shunts, etc.
- Connections of the devices has been extremely simplified, even from the wiring diagram point of view:
 - duplex cable to the control and adjustment devices
 - power and duplex cable to the actuators serving the users.



STANDARD COMMUNICATION PROTOCOL

- KNX/EIB is a European standard for transmitting and managing data in building automation. The KNX/EIB Bus is an open solution, and as such offers a significant guarantee of interworkability (compatibility between EIB products made by different manufacturers).
- The KNX/EIB standard is in compliance with European standard EN50090, the reference standard for Home and Building automation solutions. All current EIB devices can be used with future Konnex products (by connecting them on the same cable), without the need for any modifications.

MODIFICATION ADAPTABILITY AND FLEXIBILITY

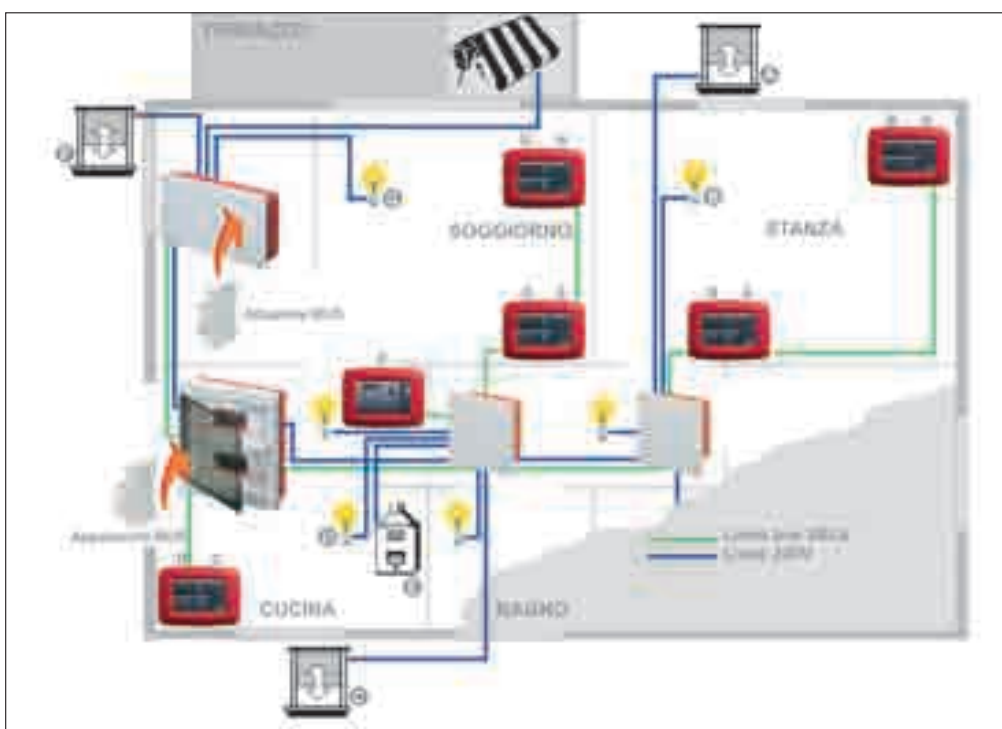
- At any time it is possible to assign different functions to the various devices installed (with software modification) without having to modify or interfere with the products' wiring.



CUTTING COSTS AND OPTIMIZING SERVICES

- The change to combine different services with each other allows consumption to be rationalized, in this way cutting management costs and at the same time increasing the level and quality of automation.
- Reduction of the number/length of control lines, thus, permitting lower material costs.

APPLICATION EXAMPLE OF AN EIB BUS SYSTEM



- ▶ A few simple stratagems are recommended for making installation of a BUS system easier:
 - have an "oversize" control unit, for positioning both the protections of the electric system and the BUS system devices.
 - use more junction boxes(*) than the number already envisaged for the electric system for positioning the BUS actuators.

(*)The GW 48 672 junction box is prepared in advance for being fixed with EN 50022 rail screws in order to house the BUS devices.

DEVICES FOR HOME AND BUILDING AUTOMATION

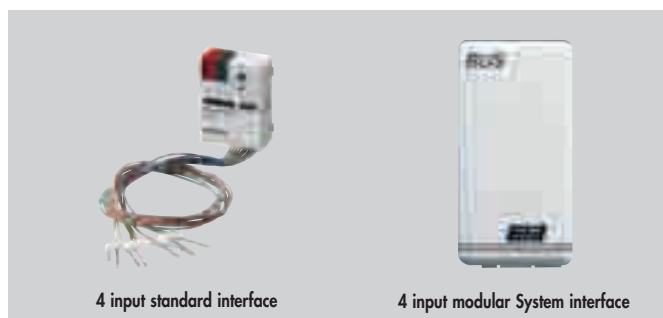
SYSTEM DEVICES

The system devices, particularly the power supply unit and RS232 interface or USB interface, are used in all EIB BUS systems, regardless of the functional characteristics. The couplers are used depending on the extension or architecture chosen for the system.



Power supply

RS232 interface



4 input standard interface

4 input modular System interface



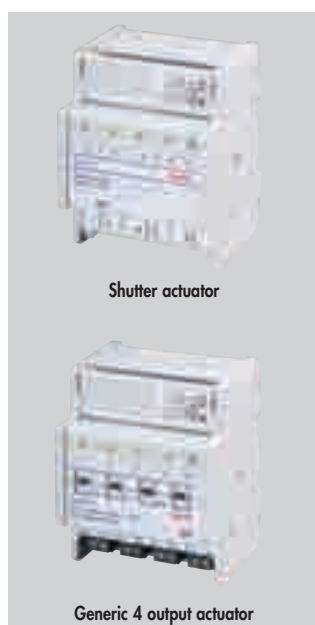
Binary input module

INPUT MODULES

These products, available in the EN 50022 modular size and in the compact size for the domestic range, allow conventional control devices (push-buttons, one-way switches, etc.) to be connected to the EIB BUS in order to achieve ON/OFF or adjustment functions.

EIB BUS EMERGENCY DEVICES

- Designed for centralized management of emergency lighting.
- Available in two versions for the wall and ceiling installation and with a rapid wiring plate to facilitate the installation.
- Manageable in all functions through the EIB BUS: tests execution (in compliance with laws); monitoring of functioning status and alarm signals (tube or battery).

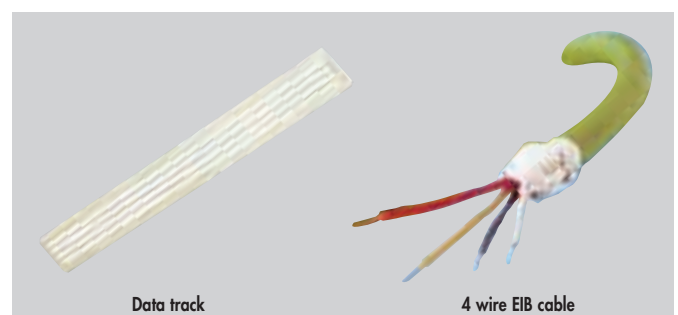


Shutter actuator

Generic 4 output actuator

ACTUATORS

Depending on the messages they receive from the BUS, the actuators allow you to directly control electric services through the relay type outlets (or electronic type in the case of dimmer actuators) they are provided with.



Data track

4 wire EIB cable

COMPLEMENTARY ITEMS

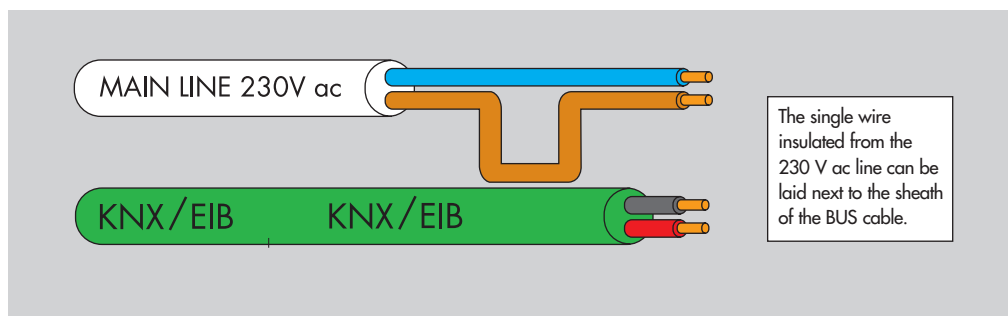
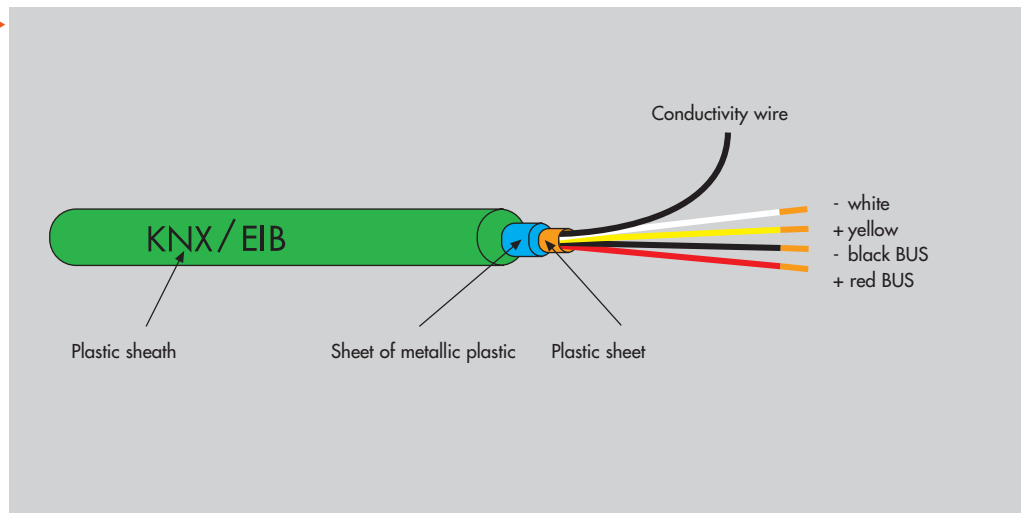
The complementary items are important accessories for installing the system: terminals, BUS to data rail connectors and a system cable (compliant with EIB specifications) are all part of this range.

INSTALLATION

THE KNX/EIB CABLE

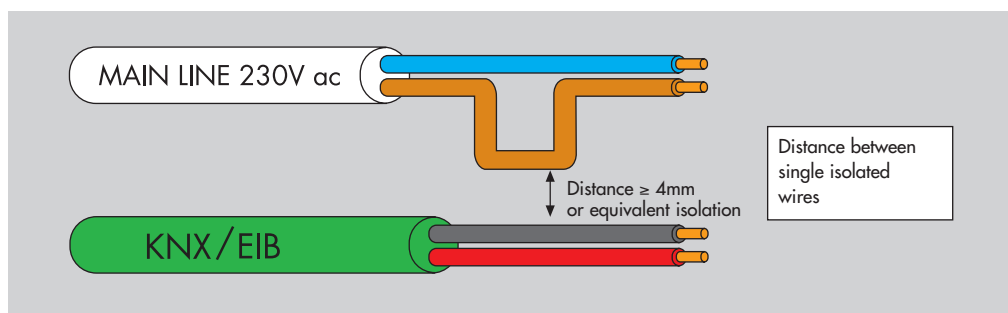
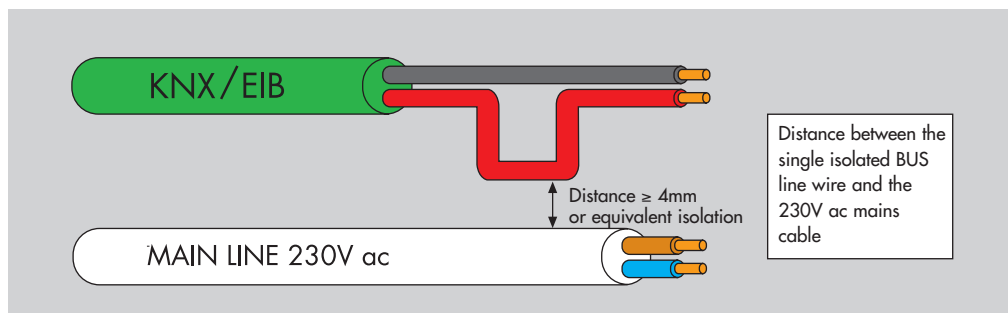
For EIB systems, it is very important to use a cable which is in compliance with the prescriptions established by the standard. In this way, the user is assured of the satisfaction of the technical and performance characteristics of the system: the user is advised to always use certified EIB cables.

For the BUS connection, the red (+) and black (-) wires are used; the yellow and white wires, generally not used, can be used to include in the system a supplementary SELV power supply unit.



LAYING THE LINES

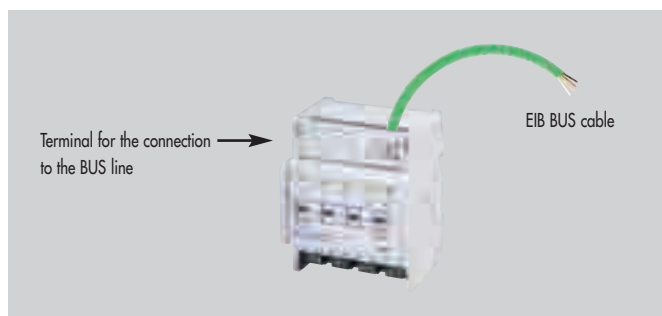
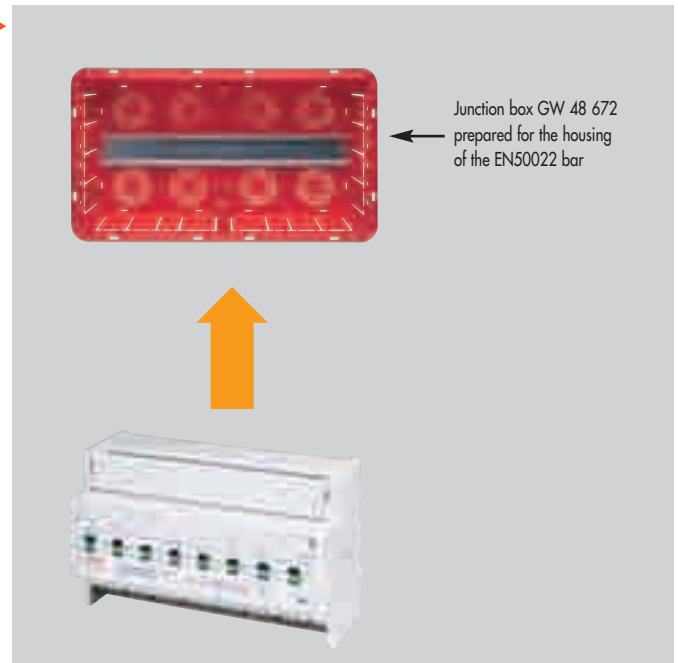
To lay the BUS lines, certain installation distances must be observed from the power lines, according to the single cases.



INSTALLATION

INSTALLATION EXAMPLES

Besides in the conventional control units, boards and boxes, the modular devices of the 90 EIB range can also be installed in the PTC junction box GW 48 762, already prepared for housing the EN50022 bar. In this last case, it is recommended not to put several dimmer modules in the same box.



- If the devices have contacts for the BUS in the back, it is necessary to fix a data rack to the EN 50022 bar.
- If the devices are equipped with terminal for the BUS on the front, it is not necessary to attach the data rack to the EN 50022 bar, because the BUS connection is made by connecting the cable directly to the terminal of the device.



The input modules GW 90 722, GW 90 723 can be installed inside the electrical box for flush-mounting. In the pre-assembled versions with the SYSTEM WHITE (GW 20 663 - GW 20 664), SYSTEM BLACK (GW 21 663 - GW 21 664) or Playbus (GW 30 663 - GW 30 664) casing, the input module can be mounted in the relative support and thereby integrated with the whole GEWISS domestic ranges.

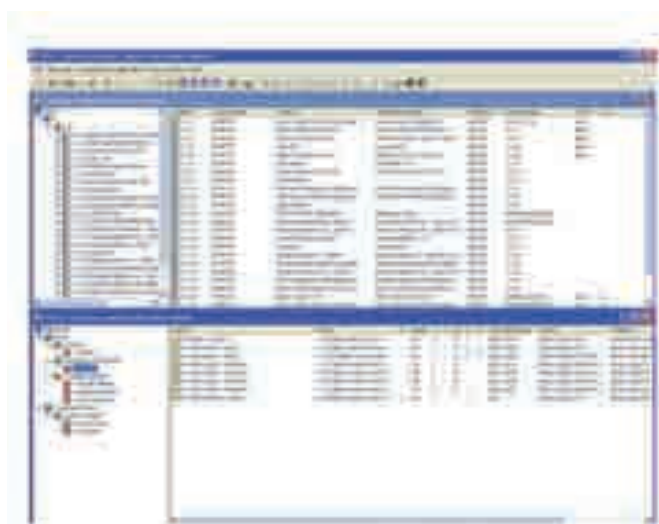
ETS SOFTWARE

SYSTEM PROGRAMMING

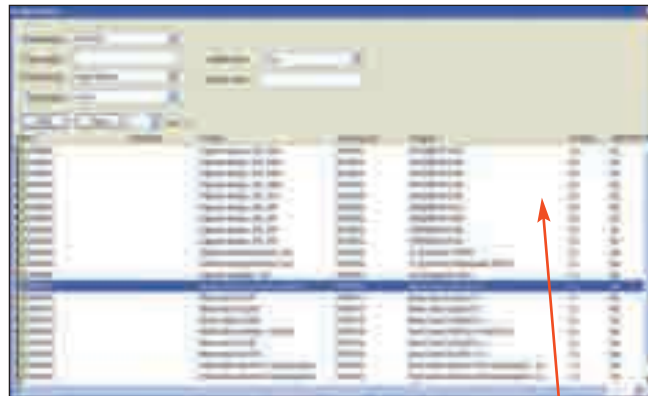
Programming of the EIB BUS devices is done using the ETS* software (EIB Tool Software), through which the logic connections necessary are created for the realization of the desired functions. ETS has a smart graphic interface which simplifies the programming, even of complex systems.



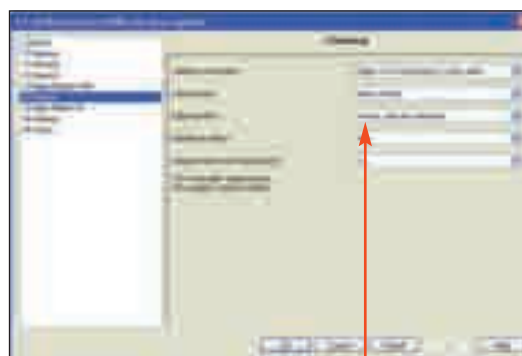
*The ETS software, common for all EIB products, is marketed directly by the EIBA association. ETS is also available in the Italian version.



In addition to the ETS software, in order to manage an EIB BUS system it is essential to have the **Product Database**, which can be downloaded from the web site www.gewiss.com. The database gathers all information concerning the products so as to be able to select the application program and desired parameters.



Selection of the program according to needs



Function parameters settings

SYSTEM

SYSTEM ARCHITECTURE

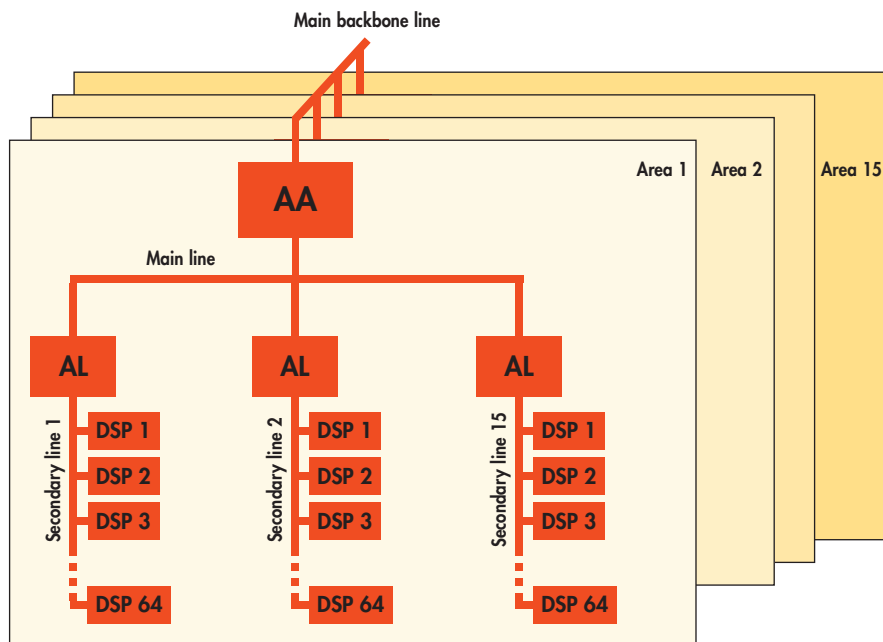
Each line is made up of four segments at the most, each with at most 64 devices (total of 256 devices per line). When having to use more than one line, it is possible to connect up to 15 shunted lines through just as many couplers. This structure is called the Area.

Also the main line can host up to 64 devices.

The EIB can be enlarged by means of a backbone line to which up to 15 areas can be connected.

More than 15 devices can work together on a 64.000area maximum.

NOTE: the actual number of devices that can be installed depends on the power supply chosen with reference to their total draw.



Key

AA = Area or field coupler

AL = Line coupler

DSP = KNX/EIB device

SYSTEM STRUCTURE

- Max. no. of areas: 15
- Max. no. of secondary lines per area: 15
- Max. no. of devices per secondary line: 64 (up to 256 using repeaters)

CONNECTING THE DEVICES

The devices can be connected at any point along the BUS line without having to abide by a precise hierarchy. Each line can have any topology (linear, star, tree, ring or any combination of them) as long as the maximum size limitations are observed.

The following are the limitations that must be observed for each line (Backbone, Main and Secondary lines):

- total length: max. 1000m, summing up all the cable segments comprising the line (the total length can be exceeded using repeaters).
- distance (measured along the cable) between the power supply unit and each single device: max. 350 m
- distance (measured along the cable) between any two devices: max. 700 m
- number of power supply units per line: max. 2
- distance (measured along the cable) between two power supply sources for the same line: min. 200 meters

DEFINITIONS

Logic connection: logic relation between two communication objects (e.g. between an actuator outlet and a channel of an input module).

Group address: identifying number of a logic grouping.

Each EIB BUS item (excluding the system devices) has maximum limitation to the number of "Connections" and "Group addresses", that must be observed in order for the system to operate correctly. This information is shown in the Characteristics of each single product.