

90 EIB RANGE: GENERAL CHARACTERISTICS

KNX/EIB: THE STANDARD FOR DOMOTICS AND FOR BUILDING AUTOMATION

The 90 EIB Range products are based on the KNX/EIB standard and technology, which is in compliance with the European standard EN50090 and supported by 130 leading industries in the residential and services sectors which, together, have a total offer of more than 10.000 devices for a total of more than 20 million nodes installed throughout the world!

This, in brief, is why GEWISS selected this technology for its products related to Domotics and Building Automation: this technology is a standard technology which is open-ended and widespread and which guarantees the user reliability and strength and certain market presence for many years to come.

THE SYSTEM

The KNX/EIB automation system is a distributed intelligence system which assures maximum power, flexibility and simplicity to realise all the functions related to Home and Building Automation.

It is more simple than traditional electrical systems because of the way the devices are connected: each device is connected in parallel to the BUS cable, from which it gets the power needed for functioning and through which the exchange of information is carried out (commands and states) with the other devices in the system. All the devices which are not actuators are connected only to the BUS pair. This is the case of inputs devices, sensors and thermostats.

The KNX/EIB system is a SELV system and all the GEWISS devices of the "90 EIB Range" are designed to assure this property.

The Bus KNX/EIB cable is a braided and shielded pair, assuring a great immunity to system disturbances. The "90 EIB Range" includes two different types of BUS KNX/EIB cables with one or two pairs. When a cable has two pairs, the second pair is used as a supplementary pair, e.g. to distribute a supplementary power supply in case the one distributed by the primary pair (along with the data signal) is not enough.

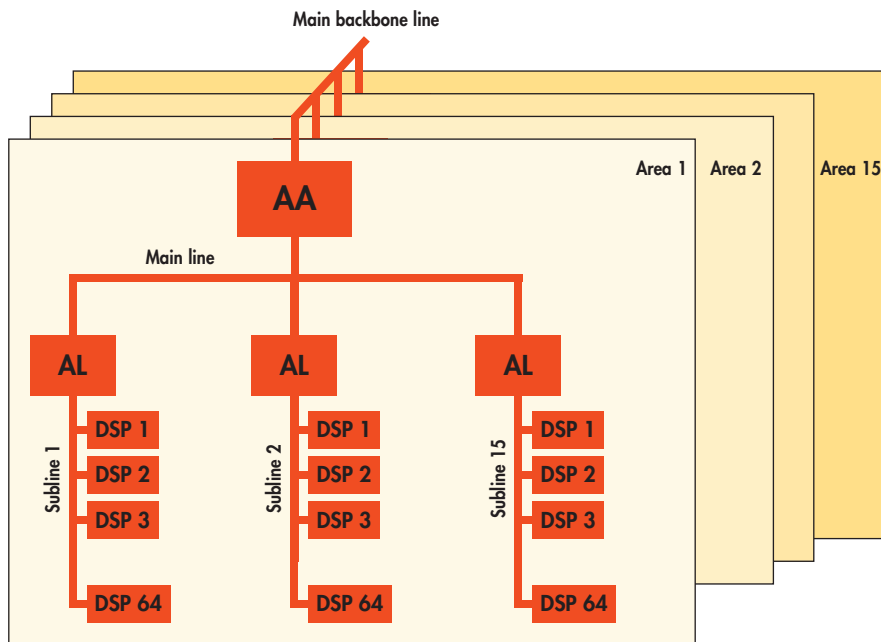
The KNX/EIB products of the "90 EIB Range" allow the realization of all the main automated functions. These include lamps and roller shutters control, scenarios management, heating systems control, power control, emergency lighting management, technical alarms management, etc.

Automation is achieved by decentralising the intelligence (elaboration capacity) to the single devices, instead of what is the case for centralised systems where there is a single central unit (e.g. a PLC) which all the functions refer to. The decentralisation of elaboration highly increases the system's reliability, because the eventual malfunction of a single device does not compromise the whole system and the other devices continue to function.

ARCHITECTURE

The Bus KNX/EIB system is comprised of areas connected to a main Backbone Line. In each area there is a Main Line from which several Sublines branch out and to which the devices (sensors, actuators, push-buttons, etc.) are connected.

TECHNICAL CHARACTERISTICS



Key

AA = Area or field coupler

AL = Line coupler

DSP = KNX/EIB device

SYSTEM STRUCTURE

- Max. no. of areas: 15
- Max. no. of sublines per area: 15
- Max. no. of devices per subline: 64 (up to 256 using repeaters)

The Main Area Lines are connected to the main Backbone Line through special devices called Area (or Field) Couplers, while the Sublines are connected to the Main Lines through Line Couplers.

The functions of Area (or Field) Coupler and of Line Coupler are carried out by a single device which is called a Line/Field Coupler. This device, when appropriately configured, can act as a simple Repeater.

Each line must include a BUS power supply unit to send power to the connected devices.

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

- Total length: max. 1000 m, 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 on the same line: max. 2
- Distance (measured along the cable) between two power supply sources for the same line: min. 200 m

The couplers electrically isolate the various parts of the system in order to prevent a single electrical malfunction from compromising the functions of the whole system.

The couplers also act as "filters" for the messages (data packages) transmitted by the single devices, in order to avoid the useless transmission of messages to the whole network, which would limit the communication capacity (or band), of the system. For example, if the push-button and the commanded lighting device are connected to the same Subline, the command messages transmitted by the push-button will be filtered by the coupler for that line and therefore will not be transmitted outside the line.

The function of the couplers is therefore of vital importance when the KNX/EIB network is very extensive. The couplers give the system a high level of electrical and functional reliability and allow simultaneous and independent communication on different lines or areas.

A BUS KNX/EIB system can even be comprised of a single line, which is typical for small systems (e.g. in an apartment or a house).

The hierarchical architecture of the system makes the KNX/EIB system a very flexible one, which can be expanded or changed step by step as demands and needs increase or change in the time: e.g. when there is the need of connecting more BUS devices, or because of an increase of the length of the cable in order to extend automation to other parts of a building.

90 EIB RANGE: GENERAL CHARACTERISTICS

TRANSMISSION TECHNIQUES AND BUS ACCESS

The data transmission between the BUS devices is through telegrams using techniques which make the use of resistances for line terminations unnecessary and which make possible any network conformation.

Data transmission on the BUS line is symmetric, the single bytes are transmitted by imposing a potential difference between the two BUS cables without reference to ground and, in this way, the system is immune to the external disturbances which commonly act on two wires.

Each device can transmit on the BUS independently from all other devices, so overlapping can occur and for this reason a special access procedure to the BUS assures that no data is lost and that the BUS is always in operation.

SELECTION OF THE DEVICES

The selection of the devices needed to realize a KNX/EIB system must obviously be made according to the system function specifications. There are system devices which don't carry out automation functions but which are needed to create the network infrastructure. These devices must be considered as listed below, in relation to the extension and size of the network:

- Power supply units: Each line must have at least one power supply unit and the size of the power supply unit must be selected according to the number of devices connected to the line.
- Line/Field couplers: There should be one coupler for each subline and for each area.
- RS232 or USB interfaces: These serve to connect a PC to the system, if so desired, for its supervision. If this is the case, one interface is needed for each PC to be connected.

CONFIGURATION OF THE DEVICES

The BUS KNX/EIB devices require configuration. The configuration is carried out with a PC (e.g. a laptop), using the ETS software (EIB Tool Software): the PC accesses the devices through the RS 232 (or USB) serial interface. The configuration consists of initialising the internal parameters of the devices so that they carry out the required functions. This configuration phase is also called the Start Up.

ETS software can be purchased from EIB (www.eiba.com) and any information needed can be obtained from Konnex Italia (www.konnex.it). This software is purchased only once and there is no limit to the number of systems which can be started up. The Gewiss Database, needed by ETS for the configuration of all the products of the "90 EIB Range", is available free of charge from the Gewiss Web site (www.gewiss.com), which is updated automatically with new products as soon as they come on the market.

INSTALLATION

The Lines (Backbone Line, Area Main Line and Sublines) of the BUS KNX/EIB system can be laid in any conformation (linear, star, tree, loop, mixed) exactly like an electrical network. For each line, the distances prescribed in the System Architecture section must be observed.

In a system which branches out extensively, it is important to check that no loops are formed between different lines. Loops are allowed within the same line but not when the loops involve different lines.

The KNX/EIB BUS devices can be installed in the distribution boards and mounted on DIN bars or flush- or surface-mounted or else directly incorporated into the final appliance (e.g. in a lamp).

DETAILED DESCRIPTION OF THE FUNCTIONS AND OF THE APPLICATION PROGRAMS OF THE DEVICES

A detailed description of the "90 EIB Range" devices is published on the GEWISS Web site (www.gewiss.com), where following documents are available:

- Technical Manual: describes all the functions and parameters and their performance
- Instruction sheets: describe installation procedures and list all the electrical and size characteristics.

TECHNICAL CHARACTERISTICS

SYSTEM DEVICES

POWER SUPPLIES			
	GW 90 703	GW 90 702	GW 90 701
Maximum current supplied	160mA	320mA	640mA
Max. no. of BUS devices which can be powered	32 (a line)	64 (a line)	64 (a line). A connection for a second line is possible, for which the coupling coil to the BUS should be planned and is to be purchased separately (GW90504)
Input power supply voltage	230V AC +6%/-10%, 50Hz	230V AC +6%/-10%, 50Hz	230V AC +6%/-10%, 50Hz
Output voltage	29V DC +/- 1V	29V DC +/- 1V	29V DC +/- 1V
Supplementary SELV 29V DC output			•
No. of EN50022 modules	5	5	7
Optional connection to back up battery		with lead battery 6-15Ah 12V DC	

TECHNICAL CHARACTERISTICS IN COMMON:

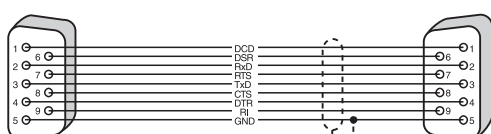
- Protection against short circuiting;
- Coil to suppress disturbances from the integrated power line (except for the subline of the GW90701 power supply unit);
- Sliding switch to reset the connected BUS devices;
- LED lights signalling the operating status and the exceeding of the maximum drawable current;
- Operating temperature: from -5°C to 45°C;
- Storage temperature: from -25°C to 55°C.

INTERFACES FOR PC		
	GW 90 705	GW 90 706
Power supply	Through the serial port of the PC	Through the USB port of the PC
PC connection elements	Female SUB-D 9/pole connector (see figures 1 and 2)	USB type B outlet (compatible with USB 1.1/2.0)
No. of EN50022 modules	2	2
Displaying elements	Green LED: ready for operations; Yellow LED: transmission to BUS; Red LED: programming phase.	None (the material address is assigned directly by the PC and no programming button or key is needed)
Compatibility	Supported by all versions of ETS	Supported from ETS 3 version 1.0. Operating systems Windows 98, 98SE, ME, 2000, XP
Transmission speed	9.600 baud	9.600 baud
Length of the connection cable to the PC	Max. 15 meters	Max. 5 meters

TECHNICAL CHARACTERISTICS IN COMMON:

- Connection to BUS through the BUS fast insertion screwless terminal;
- Operating temperature: from -5°C to 45°C;
- Storage temperature: from -25°C to 55°C.

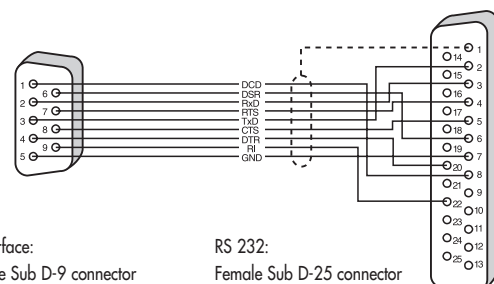
FIG. 1



Interface:
Male Sub D-9 connector

RS 232:
Female Sub D-9 connector

FIG. 2



Interface:
Male Sub D-9 connector

RS 232:
Female Sub D-25 connector

TECHNICAL CHARACTERISTICS

INPUT DEVICES

BINARY INPUTS								
	GW 90 722	GW 90 723	GW 90 714	GW 90 718	GW 90 720	GW 90 712	GW 90 711	GW 90 532
No. inputs	2	4	4	4	8	8	4	4
Current absorbed by the BUS	<10mA	<10mA	approx. 12mA	max. 10mA	<10mA	max. 10mA	max. 10mA	<7mA
Power supply	From BUS	From BUS	From BUS	From BUS	From BUS	From BUS	From BUS	From BUS
Type of inputs	potential-free contacts	potential-free contacts	230Vac	potential-free contacts	230Vac	potential-free contacts	potential-free contacts	from 8V AC/DC to 29V
Outputs for LED signals	2	4						AC/DC
Installation	Flush-mounting	Flush-mounting	EN50022 rail	EN50022 rail	EN50022 rail	EN50022 rail	Flush-mounting	EN50022 rail
Connection to the BUS	BUS terminal	BUS terminal	BUS terminal	BUS terminal	BUS terminal	BUS terminal	BUS terminal	Data track
Max. connections length	7.5 m	7.5 m	100 m	50 m	100 m	50 m	50 m	100 m
Dimensions	40x30x12mm	40x30x12mm	2,5 modules EN 50022	2,5 modules EN 50022	4 modules EN 50022	4 modules EN 50022	44x48x33mm	3 modules EN 50022
MAIN FUNCTIONS								
On/Off command and switching	•	•	•	•	•	•	•	•
Dimmer command with 1 or 2 channels	•	•	•	•	•	•	•	only with 2 channels
Roller shutters command with 1 or 2 channels	•	•	•	•	•	•	•	only with 2 channels
Sending of values	•	•	•	•	•	•	•	•
Impulse counter	•	•			•			
Scenarios management (0-63)	•	•			•			
Scenarios learning	•	•			•			

TECHNICAL CHARACTERISTICS IN COMMON:

- Operating temperature: from -5°C to 45°C;
- Storage temperature: from -25°C to 55°C.

MULTIPURPOSE PUSH-BUTTON PANEL

	GW 90 792
Operating elements	8 push-buttons can be independently configured or in couples, to execute multiple commands. The commands can also be executed through the GW 90 791 infrared remote control
Connection to the BUS	Through BCU 2.0 coupling unit GW 90 719
Installation	Flush-mounted in round box diameter 60mm or in square box
Displaying elements	Green LED means "ready for use" Red LED (one per channel) can be configured with ETS
Accessories	Covering plate GW 90 801
Main functions	<p>Push-buttons which can be configured individually or in couples:</p> <ul style="list-style-type: none"> - activation / switching commands with one or two objects; - adjustment commands (dimmer); - movement or position commands (scenarios) for roller shutters; - sending of values - push-button locking - scenarios management: transmission of six different values to eight groups of actuators, which can be called up by eight push-buttons (total of eight scenarios). The push-button panel is able to learn new scenarios which can be changed by the user.
Environmental data	<ul style="list-style-type: none"> - Operating temperature: from -5°C to 45°C; - Storage temperature: from -25°C to 55°C.

TECHNICAL CHARACTERISTICS

BUS COUPLING UNIT			
	GW 90 716	GW 90 717	GW 90 719
Type of coupler	BCU 1	BCU 2.1	BCU 2.0
Devices which can be coupled	GW 90 786 Movement detector / photoelectric cell GW 90 778 Thermostat GW 90 813 Display	GW 90 777 Thermostat with display and multipurpose push-buttons	GW 90 792 channel multipurpose 8 push-button panel with infrared command
Current absorbed by the BUS	approx. 3mA (max. 7mA)	approx. 3mA (max. 7mA)	approx. 3mA (max. 7mA)
Power supply	From BUS	From BUS	From BUS

TECHNICAL CHARACTERISTICS IN COMMON:

- Installation: Flush mounted in round box diameter 60mm, or in a square box;
- Dimensions: 71x71x23mm;
- Operating temperature: from -5°C to 45°C;
- Storage temperature: from -25°C to 55°C.

OUTPUT DEVICES

BINARY OUTPUTS		
	GW 90 737	GW 90 738
No. outputs	8	12
Manual control	•	•
Contact rating	16A cos φ 0.6	16A cos φ 0.6
Switching signal (LED)		
Current absorbed by the BUS	approx. 15mA	approx. 15mA
Power supply	From BUS	From BUS
Connection to the BUS	BUS terminal	BUS terminal
No. of EN 50022 modules	8	12
MAIN FUNCTIONS		
Delayed activation/deactivation; timer for stair lights	•	•
Logic functions/priority functions/channels lock	•	•
Setting for performance in case of BUS power failure	•	•
Central function (one object for all the channels)	•	•
Flasher function	•	•
Management of scenarios with number (1-8)	•	•
Memorisation of scenarios	•	•

TECHNICAL CHARACTERISTICS IN COMMON:

- Operating temperature: from -5°C to 45°C;
- Storage temperature: from -25°C to 55°C.

TECHNICAL CHARACTERISTICS

BINARY OUTPUTS	
	GW 90 739
No. outputs	12
Auxiliary power supply	min. 12V DC, max. 36V DC, rated 24V DC
Contact rating	160mA 24V DC (for synoptic panels lamps/signal lights)
Switching signal (LED)	
Current absorbed by the BUS	approx. 4.5mA
Power supply	From BUS
Connection to the BUS	BUS terminal
Dimensions	4 EN 50022 modules
MAIN FUNCTIONS	
Delayed activation/deactivation; timer for stair lights	
Logic functions / priority functions / channels lock	
Setting for performance in case of BUS power failure	
Flasher function	•

TECHNICAL CHARACTERISTICS IN COMMON:

- Operating temperature: from -5°C to 45°C;
- Storage temperature: from -25°C to 55°C.

OUTPUT DEVICES

OUTPUT FOR ROLLER SHUTTERS		
	GW 90 754	GW 90 753
No. connectable and separately manageable motors	Max. 2	Max. 8
Rated current	10A cos φ 0.6	10A cos φ 0.6
Maximum motor capacity	Max. 1000W for both motors	Max. 1000W for all motors
Power supply	From BUS	From BUS and from main power
Connection to the BUS	BUS terminal	BUS terminal
EN 50022 modules	4	8
MAIN FUNCTIONS		
Movement, stop, step movements	•	•
Adjustment of the slats for Venetian blinds	•	•
Safety (e.g. pre-setting of wind alarm)	•	•
Pre-defined movements (e.g. for scenarios)	•	•
Pre-defined movements in case of lack/return of BUS voltage	•	•
Manual controls	•	•

TECHNICAL CHARACTERISTICS IN COMMON:

- Operating temperature: from -5°C to 45°C;
- Storage temperature: from -25°C to 55°C.

TECHNICAL CHARACTERISTICS

DIMMER OUTPUTS				
	GW 90 760	GW 90 759	GW 90 743	GW 90 744
No. of outputs	3	2	1	2
Adjustable load type	Ballast / transformers with a 1-10V interface	Resistive loads / transformers with winding	Resistive loads / electronic and winding transformers	Resistive loads / electronic and winding transformers
Current absorbed by the BUS	approx. 6.5mA	10mA	<7mA	<7mA
Power supply	From BUS	From BUS	From BUS	From BUS
RATED POWER/LOAD				
Incandescent lamps		25-300W per channel	50-500W/VA	total load: 50-600W/VA channel load: 50-400W/VA
Halogen lamps				
Fluorescent lamps: - not power-corrected - power-corrected				
Ballast	max. 100mA			
Lamps with electronic transformer		25-300VA per channel	50-500W/VA	
Lamps with transformer with winding		25-300VA per channel	50-500W/VA	
Protection against short-circuit and overload		electronic and fuse	electronic	electronic
Connection to BUS through	BUS terminal	BUS terminal	BUS terminal	BUS terminal
No. of EN 50022 modules	4	6	4	4
MAIN FUNCTIONS				
Manual command (only ON/OFF)	•			
Motors command				
Logic functions				
Timing			•	•
Overload signal		•	•	•
Management of scenarios	with number (1-8)	reception of a light value	with number (1-8)	With number (1-8)

TECHNICAL CHARACTERISTICS IN COMMON:

- Operating temperature: from -5°C to 45°C;
- Storage temperature: from -25°C to 55°C.

TECHNICAL CHARACTERISTICS

CLIMATE CONTROL DEVICES

WEATHER STATION	
	GW 90 779
Power supply	Through the GW90780 power supply unit: 24V AC / 1A
No. of EN 50022 modules	4
No. channels	4 inputs
Signals characteristics	Sensor inputs: 0...1V 0...10V 0...20mA 4...20mA Power supply available for sensors: 24V DC, 100mA
Types of connectable sensors	GW 90 771 Wind sensor GW 90 772 Luminosity sensor GW 90 773 Photoelectric sensor GW 90 774 Rain sensor GW 90 775 Temperature sensor
Programming	For programming it is necessary to use the "ETS Tool for weather station" program, which can be downloaded from the Web site www.gewiss.com
Main functions	Definition of two limit values for each sensor with the cyclical sending of measured values (except for the rain sensor). Actions are executed on the basis of logic operations between the measured values. Cyclical monitoring of the sensors parameters with the sending of the values to the BUS. Possibility of controlling complex systems (e.g. greenhouses).

TECHNICAL CHARACTERISTICS IN COMMON:

- Operating temperature: from -5°C to 45°C;
- Storage temperature: from -25°C to 55°C.

THERMOSTATS		
	GW 90 777	GW 90 778
Command/viewing elements	Display and push-buttons: 3 push-buttons for heating adjustment management, 4 multipurpose push-buttons	Temperature regulation management through a rotary selector. A push-button is available for programmable states override
Connections to the BUS	Through BCU 2.1 coupling unit: GW 90 717	Through BCU 1 coupling unit: GW 90 716
Accessories	Covering plate GW 90 801	Covering plate GW 90 801
MAIN FUNCTIONS		
Management of heating and cooling systems	•	•
Alarm functions (e.g. condensation temperature, frost protection, etc.)	•	•
Regulation of parameters (set point, functioning mode)	Complete settings are achieved with ETS and the programming push-buttons	ETS sets the override push-button function and the range of settable temperature variation by using the rotary selector (e.g. +/- 3°C)
Multipurpose push-buttons	4 push-buttons separately configurable: Switching with one or two objects, light adjustment (dimmer), roller shutters commands, fronts evaluation, scenarios, channels lock, timing.	
Management of scenarios with objects	Command and learning of 8 different scenarios for 8 groups of actuators; a scenario can be commanded by one of the 4 push-buttons or through the BUS.	

TECHNICAL CHARACTERISTICS IN COMMON:

- Operating temperature: from -5°C to 45°C;
- Storage temperature: from -25°C to 55°C.

TECHNICAL CHARACTERISTICS

DEVICES FOR LUMINOSITY/MOVEMENT CONTROL

MOVEMENT / LUMINOSITY / PHOTOELECTRIC DETECTORS				
	GW 90 781	GW 90 783	GW 90 784	GW 90 786
Installation	Wall (IP55)	Ceiling (IP20)	Ceiling (IP20)	Flush-mounting in round box diam. 60mm
Connection to the BUS	BUS terminal for insertion without screws	BUS terminal for insertion without screws	BUS terminal for insertion without screws	Through BCU 1 coupling unit GW 90 716
Presence detection		360° control, range of action = 6 m	360° control, range of action = 6 m	
Movement detection	220° control, range of action = 16 m; 360° control, range of action = 4 m	360° control, range of action = 7 m	360° control, range of action = 7 m	180° control, Max. distance = 8 m
Luminosity control	3...1000 lux	10...1000 lux	10...1000 lux	5...1000 lux
Current absorbed by the BUS	approx. 7mA	approx. 4.5mA	approx. 4.5mA	see BCU 1 GW 90 716
Power supply	From BUS	From BUS	From BUS	From BUS
Operating temperature	-25°C ÷ 55°C	-5° C ÷ 45°C	-5° C ÷ 45°C	-5° C ÷ 45°C
MAIN FUNCTIONS				
Constant luminosity control (in combination with dimmer actuators)		•		
Activation depending solely on luminosity	•			
Activation depending on luminosity and movement	•	•	•	•
Timing of OFF function	•	•	•	•

FUNCTIONAL DEVICES

PROGRAMMING CLOCKS		
	GW 90 796	GW 90 547
Connection to the BUS	Through GW 90 797 coupling unit (logic unit)	BUS terminal for insertion without screws
Current absorbed by the BUS	See logic unit GW 90 797	<7mA
Power supply	From BUS	From BUS
No. of EN50022 modules	2	2
Type of programming clocks	Weekly	Weekly
No. of freely configurable channels	2 for a total of 42 memory positions (a memory position corresponds to a switching schedule)	2 for a total of 36 memory positions (a memory position corresponds to a switching schedule)
Operating temperature	-10°C ÷ 55°C	-10°C ÷ 50°C
MAIN FUNCTIONS		
Sending of 1bit commands and/or 1yte values	only 1bit switching commands	•
Random program (sending of commands with random timing)*	•	
Manual overriding of the programs	•	•

FUNCTIONAL DEVICES

LOGIC UNIT	
	GW 90 797
Connection to the BUS	Through data track (e.g. GW 90 810)
Current absorbed by the BUS	max. 7mA
Power supply	From BUS
No. of EN 50022 modules	1
Main functions	<p>Ten application programs are available for the following functions:</p> <ul style="list-style-type: none"> - the conversion of telegrams (e.g. from 1 bit to 2 bits); - the execution of priority commands; - a logic port with eight inputs (AND, OR, NOT, NOT, etc...) - two logic ports with two inputs and logic combinations with outputs; - two logic ports with four inputs each; - binary input functions (e.g. for GW 90 796 programming clock); - the sending of four 1bit commands at reception of a 1bit input telegram; - the sending of four 4bit commands at reception of a 4bit input telegram; - management of scenarios: <ul style="list-style-type: none"> call up of 8 switching states for 4 groups of actuators, individual assignment of ON and OFF commands for all 32 stored 1bit values; call up of 8 switching states for 4 groups of actuators, individual assignment of luminosity values for all 32 stored 8bit values.

TECHNICAL CHARACTERISTICS IN COMMON:

- Operating temperature: from -5°C to 45°C;
- Storage temperature: from -25°C to 55°C.

SMOKE SENSOR	
	GW 90 798
Power supply	Battery 9V, 6LR61
Battery autonomy	normally 3 years
Low battery indication	every 45 seconds, usually for 30 days
Operating temperature	from 0° to 50°C
Storage temperature	from -5° to 60°C
Protection rating	IP42
Dimensions	110 x 42mm

Note: for the connection of the smoke sensor to the EIB BUS system, the GW 90 711 binary input must be used.

TECHNICAL CHARACTERISTICS

DISPLAY / REMOTE CONTROL DEVICES

DISPLAY	
	GW 90 813
Operating elements	4 push-buttons, 2 to execute commands, 2 to turn pages
Connection to the BUS	Through BCU 1 coupling unit GW 90 716
Installation	Flush-mounted in round box diameter 60mm or in square box
Displaying elements	Liquid crystal display with back lighting: 4 lines (16 characters) 2 lines (8 characters) 1 line (4 characters) - see figure 3 -
Programming	For programming it is necessary to use the "Tool Software Info Display" program, which can be downloaded from the Web site www.gewiss.com .
Acoustic signal (for alarms)	2 tones, possibility of muting
Accessories	Covering plate GW 90 801
Main functions	12 programmable pages with 1, 2 or 4 lines each. During programming, each line is assigned a function. An additional page allows management of up to 12 alarms (with acoustic signal). Functions: - Display of texts; - Adjustment (dimmer); - Roller shutters command; - Sending of values; - Display of time and date (from an external clock); - Display of ASCII texts (up to 14 characters); - Management of scenarios which can be called up and stored with the numbers from 1 to 128; - Priority commands (2 bits); - Management of max. 12 alarms with settable acoustic alarm.
Operating temperature	from 0°C to 45°C

Figure 3



TERMINAL FOR REMOTE CONTROL VIA TELEPHONE	
	GW 90 814
Displaying elements	LCD display 16 characters, 2 lines.
Connection to the BUS	Through BUS terminal for insertion without screws
Power supply	From 230V mains
Installation / dimensions	Surface-mounting; dimensions LxWxH = 220x180x40mm
Main functions	6 EIB communication objects are available to command, via DTMF telephone, 6 groups of actuators. Besides, 2 EIB BUS signal inputs are available to send alarms to the telephone numbers set. - 4 conventional outputs (24V DC, 50mA) are also available, which can be commanded via DTMF telephone. - 1 output for local alarm (24V DC, 50mA). - 4 alarm inputs for traditional potential-free contacts. Customized text and voice messages
Environmental data	Operating temperature: from -5°C to 45°C Storage temperature: from -25°C to 70°C

AUTONOMOUS EMERGENCY DEVICES

PERMANENT EIB STARTEC				
	Power (W)	Autonomy (h)	Installation	Protection rating
GW 81 411	8	1	Wall and ceiling-mounting	IP40
GW 81 412	8	3	Wall and ceiling-mounting	IP40
GW 81 413	11	1	Wall and ceiling-mounting	IP40
GW 81 414	11	3	Wall and ceiling-mounting	IP40
GW 81 415	24	1	Wall and ceiling-mounting	IP40
GW 81 416	24	3	Wall and ceiling-mounting	IP40
GW 81 443	11	1	Double-sided	IP40
GW 81 445	11	3	Double-sided	IP40
GW 81 444	11	1	Double-sided	IP40
GW 81 446	11	3	Double-sided	IP40
GW 81 471	8	1	Flush-mounting	IP40
GW 81 472	8	3	Flush-mounting	IP40
GW 81 473	11	1	Flush-mounting	IP40
GW 81 474	11	3	Flush-mounting	IP40
GW 81 475	24	1	Flush-mounting	IP40
GW 81 476	24	3	Flush-mounting	IP40
GW 81 431	8	1	Wall and ceiling-mounting	IP65
GW 81 432	8	3	Wall and ceiling-mounting	IP65
GW 81 435	24	1	Wall and ceiling-mounting	IP65
GW 81 436	24	3	Wall and ceiling-mounting	IP65

CHARACTERISTICS IN COMMON:

BUS power consumption: 3mA

NON-PERMANENT EIB STARTEC				
	Power (W)	Autonomy (h)	Installation	Protection rating
GW 81 401	8	1	Wall and ceiling-mounting	IP40
GW 81 402	8	3	Wall and ceiling-mounting	IP40
GW 81 403	11	1	Wall and ceiling-mounting	IP40
GW 81 404	11	3	Wall and ceiling-mounting	IP40
GW 81 405	24	1	Wall and ceiling-mounting	IP40
GW 81 406	24	3	Wall and ceiling-mounting	IP40
GW 81 461	8	1	Flush-mounting	IP40
GW 81 462	8	3	Flush-mounting	IP40
GW 81 463	11	1	Flush-mounting	IP40
GW 81 464	11	3	Flush-mounting	IP40
GW 81 465	24	1	Flush-mounting	IP40
GW 81 466	24	3	Flush-mounting	IP40
GW 81 421	8	1	Wall and ceiling-mounting	IP65
GW 81 422	8	3	Wall and ceiling-mounting	IP65
GW 81 425	24	1	Wall and ceiling-mounting	IP65
GW 81 426	24	3	Wall and ceiling-mounting	IP65

CHARACTERISTICS IN COMMON:

BUS power consumption: 3mA

TECHNICAL CHARACTERISTICS

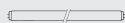
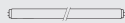
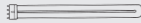
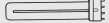



FUNCTIONS	
Commands	<ul style="list-style-type: none"> Selection of function mode (only for permanent lamps) Execution of functional test Inhibition mode for ON/OFF Rest mode for ON/OFF Lamp reset Reset "ex works" state
Signals of state and alarms	<ul style="list-style-type: none"> Permanent/Not Permanent mode Conduit alarm Battery alarm State: test in progress State: emergency State: rest mode State: low power consumption State of activating inhibition mode Byte status Percentage of battery charge Results of last command execution
Tag data	<ul style="list-style-type: none"> Lamp power Lamp type

TECHNICAL CHARACTERISTICS

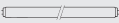





EMERGENCY KIT FOR FLUORESCENT LAMPS

	Max. power (W)	Fluorescent tubes version	Dimensions	Current absorbed by the BUS
GW 81 451	32	see table	244x46.5 mm by H= 41 mm	3mA
GW 81 452	58	see table	244x46.5 mm by H= 41 mm	3mA

VERSIONS FOR FLUORESCENT TUBES UP TO 32 W

Source	Coupling	Power supply	Power								
T8 	G13	Trad./Electr.				18					
T5 	G5	Electronic			14		21			28	
FSD 	2G11	Trad./Electr.				18		24			
FSD 	2G7	Trad./Electr.	11								
FSD 	2G10	Trad./Electr.				18		24			
FSQ 	G24q	Trad./Electr.		13		18				26	
FSQ 	Gx24q	Electronic		13		18				26	32
Autonomy			2h 30'	2h 30'	2h	1h 30'	1h 30'	1h 30'	1h 30'	1h	1h
Efficiency			45%	40%	40%	27%	25%	25%	25%	15%	20%

TECHNICAL CHARACTERISTICS

VERSION FOR FLUORESCENT TUBES UP TO 58 W											
Source	Coupling	Power supply	Power								
T8 	G13	Trad./Electr.				36					58
FSD 	2G11	Trad./Electr.	24			36	40			55	
FSD 	2G7	Trad./Electr.									
FSD 	2G10	Trad./Electr.	24			36					
FSQ 	G24q	Trad./Electr.		26							
FSQ 	Gx24q	Electronic		26	32				42		
Autonomy			3h	2h 30'	2h	2h	2h	2h	2h	2h	2h
Efficiency			21%	25%	15%	20%	20%	15%	15%	15%	

FUNCTIONS	
Commands	<ul style="list-style-type: none"> Selection of function mode Execution of functional test Inhibition mode for ON/OFF Rest mode for ON/OFF Lamp reset Reset "ex works" state
Signals of state and alarms	<ul style="list-style-type: none"> Permanent/Not Permanent mode Conduit alarm Battery alarm State: test in progress State: emergency State: rest mode State: low power consumption State of activating inhibition mode Byte status Percentage of battery charge Results of last command execution
Tag data	<ul style="list-style-type: none"> Max. lamp power Lamp type