tebis TX

Intelligent control system for buildings

tebis TX uses the technology of the installation bus for the control of lighting, heating and roller-shutters or other similar loads and is ideal for commercial applications, giving the advance control and flexibility often required.

tebis TX offers the technology to realise true energy savings through automation. Maximum energy savings are achieved where the system controls digital lighting and heating. In addition, by using daylight linking PIR devices to dim lighting in response to natural light availability, energy savings will be maximised. This alone has been proven to cut energy consumption by up to 70%.

tebis TX
Smart building automation

Ideal for both residential and commercial applications. tebis TX uses KNX bus technology to link with other networked devices and can be used to control lighting, heating and other building controls such as window shutters or curtains.

1 **Comfort & Style**
Set the scene with a single button for various scenarios and repetitive situations e.g. dimmed for presentations or full on for cleaning

2 **Security & Safety**
Reduced risk of electrocution by use of the very low voltage (29V) on all switches.

3 **Future Proof**
Any brand, design or finish of wiring accessories can be used with this system allowing for change with trends and fashion.

To obtain the maximum energy savings the system is best used when configured for controlling both the lighting and heating with automatic switching to predetermined parameters. The use of daylight PIR sensors to dim the lighting in response to natural daylight further enhances the energy saving benefits of the system.

In addition to the energy saving benefits of the system added security is provided with presence simulation during absence, particularly for holidays in residential properties and out of hours in commercial premises.

Occupancy comfort is provided with a choice of switching from the wall or remote control, ideal if reduced mobility is an issue for the user, and a single switch can be used to switch off all the lighting and heating when leaving the building. The in-room LCD display shows the switching status as well as temperature levels for heating.

The tebis system enables the installer and user to control the electrical installation in a simple and comfortable way (lighting, blinds, heating, etc.)

The tebis offer includes radio and twisted pair products, which are suitable for use in new installations and renovation. Products comply to the KNX standard.

The products below are the components needed to perform, configure or extend an existing tebis TX installation.

TX100B Configurator
This tool is used for programming of the entire system whether it is wire, radio or both. The dialogue and download with the wire products is carried out via the media coupler.

Other functions :
- Tests the links and commands
- Measurement of radio environment interference level
- Copy of the system data on a USB flash drive or creation of project documentation with additional software.

USB flash drive; Delivered with TX100B, TX101B kit.

For technical details see page 6.23.

TX101B

TX101B Configurator Kit

Kit includes:
- TX100B configurator
- TR 130B media coupler with 230V power cable
- USB Flash Drive Storage
- 4 rechargeable batteries Ni-Mh 1,2 V 1550 mA/h
- 230 V / 9 V 1 A mini charger

Description	Dimensions (mm)	Config.	Cat ref.
Frequency: 868.3 MHz TX100B: 217 x 75 x 36	Box: 345 x 291 x 65	TX	**TX101B**

TX100B

TX100B Configurator

Includes:
- USB Flash Drive Storage
- 4 rechargable batteries Ni-Mh 1.2V
- 230V / 9V 1A mini charger

Description	Dimensions (mm)	Config.	Cat ref.
TX100B Configurator	217 x 75 x 36	TX	**TX100B**

TX153A

SmartMedia Cards

The cards allow the back-up of projects carried out with TX100B.

Description	Qty.	Cat ref.
32Mb XD Card and SmartMedia Adaptor	1	**TX153A**
32Mb XD Cards	2	**TX153B**

TA008

Line Coupler

Allows you to carry out the extension of a wire/bus line.

Description	Characteristics	Width (35mm)	Config.	Cat ref.
Necessary in case of systems with more than 64 wire products	Supply: bus 30V DC Connectsby two TG008 bus connectors	2 Mod	TX/ETS	**TA008**


TR131B

Media Coupler

Serves as a link between the wire and radio product.

Description	Characteristics	Config.	Cat ref.
Allows transmission of messages of twisted pair products towards radio products and vice versa	Supply: 230V~ Frequency: 868.3 MHz Bi-directional product Size: 111 x 51 x 18mm	TX	**TR131B**

USB to KNX Interface Module

For connecting a computer to the KNX bus, via a USB connection. This is for the purpose of programming tebis KNX devices. In addition, it can also be used for the bus connection of visualisation equipment, computer monitoring and centralised control.

Description	Width (35mm)	Cat ref.
USB Interface (model B USB slot)	2 Mod	**TH101**

Radio Repeater

Amplifies the KNX radio signal. Usage: if distance is important or environment is unfavourable.
Note: all the KNX bidirectional radio products can be configured in receiver by TX100B.

Description	Characteristics	Config.	Cat ref.
To be used in case of poor communication, amplifies the radio message	Supply: 230V~ Frequency: 868.3 MHz Bi-directional product Size: 111 x 51 x 18	TX	**TR140B**


TXA111

Power Supply Modules

Supplies 30V SELV DC power supply from the bus which serves directly as remote supply for most of the wire products (see page 6.28).

Description	Characteristics	Width (in 17.5mm)	Cat ref.
Supplies the 30V power supply of the system for an installation carrying up to 64 TX products	Supply: 230V~ 50Hz, 15VA Output Voltage: 30V DC, 320mA Resistant to short circuits	4 Mod	**TXA111**
Supplies the 30V power supply of the system for an installation carrying up to 64 TX products	Supply: 230V~ 50Hz, 24VA Output Voltage: 30V DC, 640mA Resistant to short circuits	4 Mod	**TXA112**

Bus Cable

Bus cable (ST) Y 2 x 2 x 0,8mm with length of 100 and 500m (4KV test voltage).

Description	Length	Cat ref.
Insulated 4kV, to install with LV conductors	100m	**TG018**
Insulated 4kV, to install with LV conductors	500m	**TG019**

Bus Connector

Allows connections of bus to of TX products by plugging.

Description	Pack qty.	Cat ref.
4 links per connector (connection capacity 0.6 to 0.9mm^2 rigid)	50 pieces	**TG008**

Input interfaces which manage the information flow to control and manage the electrical equipment of the installation.

They send via the bus, orders to the tebis system output products.

Input Modules
For managing the ON/OFF contacts (potential free or 230V) coming from traditional control devices (PB, switch, thermostat, clock, etc.)

A single connection to the bus ensures supply of the products and information exchange, considerably reducing cabling.

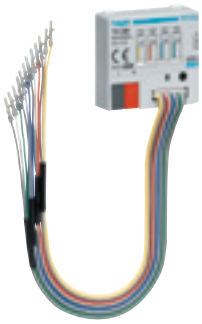
For technical details see page 6.30.


TXB302

Input Modules for Flush Mounting

These modules are placed behind standard electrical fittings (push button or switch) in fixed box with a minimum of 40mm depth. Allow the volt free contact link. All the commands are of the VLSV type (Very Low Safety Voltage).

Description	Supply	Dimensions h x w x d (mm)	Configuration	Cat ref.
2 Inputs for Volt Free Contacts	Bus 30V DC	35 x 38 x 12	TX/ETS	**TXB302**
4 Inputs for Volt Free Contacts	Bus 30V DC	35 x 38 x 12	TX/ETS	**TXB304**


TX308

Four Input Modules with Four LED Output terminals

Four inputs for volt free contacts, four outputs for state indication by LED.

Functions:
- ON/OFF control
- Up/Down control (with alarm function)
- Dimming control
- Override control
- Time delay function
- Scene call

Features
- Power supply: 30V DC
- Output voltage: 2V DC
- Output current: 0.85mA

Description	Dimensions h x w x d (mm)	Configuration	Cat ref.
Flush Mount 4 Channels with 4 LED Output Terminals	35 x 38 x 12	TX/ETS	**TX308**
Red LED Installation Package for TX308, 5 x 8mm	-	-	**TG308**


TXA306

230V Input Modules

Allows 230V switching products to be interfaced with a tebis system.

Description	Supply	Width (in 17.5mm)	Config.	Cat ref.
4 230V Inputs	Bus 30V DC	2 Mod	TX/ETS	**TXA304**
6 230V Inputs	Bus 30V DC	6 Mod	TX/ETS	**TXA306**

The room controller is a versatile device that groups 4 push buttons and an LCD display for information.

4 Pushbuttons
The four sides of the product act as a push button (touch sensitive keys) for ON/OFF controls, Up/Down, Scene selection, etc All the 4 keys are freely and independently programmable.

Visual symbols can be selected on the display for clear identification of the function / control associated with each key.

Display
This device can indicate the state of other input devices such as pushbuttons that are connected to the bus.
Examples: On/Off state, lighting signal delivered by a light sensitive switch, outside-inside temperature, alarm, etc.

The data can be displayed by symbols that can be selected from an in-built library or by plain text.

Display Arrangement
It includes:
- Central part allows 4 separate lines of text to be displayed
- 4 external zones corresponding to the four keys to identify the control associated with each key.

Other Functions
- Ambient temperature measurement,
- Display of hour and date,
- Alarm clock function (4 alarm tones)
- Back-lit display - activated by pushing any button or alarm clock deactivated automatically after adjustable time delay.

Assembly and Installation
assembled with a standard flush mounting box of. Programming is achieved by using the configuration device TX100B via media coupler or by ETS software.

For technical details see page 6.31.

TX450A

Room Controller

Functions:
- ON/OFF control
- Up/Down control
- Dimming control
- Scenario selection
- Heating control
- Timing functions
- Switching functions with AND/OR logic
- Display of parameter status

Colour	Dimensions h x w (mm)	Supply	Cat ref.
White	80 x 80	Bus 30V DC	**TX450A**
Silver	80 x 80	Bus 30V DC	**TX450B**

TX450B

Room Controller with Temperature Regulator

Functions:
- ON/OFF control
- Up/Down control
- Dimming control
- Scenario selection
- Heating control
- Timing functions
- Switching functions with AND/OR logic
- Display of parameter status

Modes of operation:
- Comfort
- Standby
- Night
- Frost / Heat
- PID Automatic

Colour	Dimensions h x w (mm)	Supply	Cat ref.
White	80 x 80	Bus 30V DC	**TX460A**
Silver	80 x 80	Bus 30V DC	**TX460B**

Control commands are transmitted directly onto the bus without the need for output controls. Wiring is simplified as power supply is taken direct from the bus. Time switches are used in control of lighting, heating, shutters movement, domestic appliances, sockets, etc. in order to improve comfort and saving energy.

Functions
- 7 day programmer, 56 steps of program, minimum setting step of 1 minute
- Possible to program impulses (1s to 30min)
- Automatic change of schedule for summer/winter

Programming Key EG005
For programming the time switch
- Copy or saving the program
- Making circuit On or Off temporarily (blinking)
- Permanent priority settings On or Off (manual)

Provided with Software and Cable
- For programming from PC or on the product not connected in the system
- 5 years functioning reserve with lithium battery
- Bar graph display of day profile

Other Functions
- Impulse programming (1s to 30min)
- Presence simulation
- Back light screen
- Holiday mode - priority setting On or Off between two dates
- Possible to lock keyboard and programming by EG004 key

TX 023
- Can be synchronized on radio via signal DCF77 with help of EG001 antenna.
- Via bus, master timer can set time and date of other TX022 - TX023

Installation
Programming is carried out by configuration device TX100B via media coupler or by ETS.

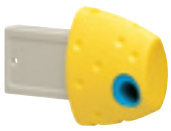
For technical details see page 6.32.

TX022

Time Switches

2 channel 7 day Function - ON/OFF, Up/Down, heating control scene selection, master or slave clock function. Product setting on current hour and day.

Description	Supply	Width (35mm)	Cat ref.
tebis Timer	Bus 30V DC	2 Mod	**TX022**
tebis Timer with Radio Pilot DCF77 (antenna)	Bus 30V DC	2 Mod	**TX023**



EG004

EG006

Accessories

Description	Cat ref.
Locking Key (to stop unauthorised changing of the program)	**EG004**
Blank Programming Key (to save program from switch or software)	**EG005**
USB Adaptor and Interface Software (for transferring the program from the PC to the key)	**EG003U**
Storage Key Module (holds 3 keys)	**EG006**

Light sensitive switches are used for automatic control of indoor and outdoor lighting or for the control of blinds, or curtains or shutters according to ambient lighting.

Energy Saving
Maximises natural light resulting in energy savings.

Principal Applications
• Residential building - outdoor lighting
• Commercial and industrial sector - classrooms, offices, windows, car parking, etc.

Comfort
Light sensitive switch will avoid excessive light or will limit overheating of the premises by appropriately managing shutter or blind operation.

Assembly
Light measurement is carried out with the help of a photo resistive cell connected to the product.

The cell has two versions:
• Flush mounted ref. EE002
• Surface ref. EE003

Note: Switch and cell are required.

Installation
Programming is carried out by configuration device TX100B via media coupler or by ETS.

For technical details see page 6.33.

Light Sensitive Switch

Control of indoor or outdoor lighting circuits (ON, OFF, Dimming) as well as the blinds, curtains or shutters according to the ambient light.

Measures ambient light via cell EE002 or E003 and transmits control command when preset level is reached. The information of the cell connected on TX025 can be shared via Bus with several other TX025. This makes several levels of regulation possible.

TX025

Description	Supply	Width (35mm)	Cat ref.
2 Sensitivity Ranges: 2 to 200 lux, 200 to 20000 lux. Modes: Auto / Manual / Test. Potentiometer for level setting LED for set point crossing indication. Max. distance between cell and TX025: 100m (delivered without cell).	Bus 30V DC	2 Mod	**TX025**

Photo Resistive Cells for TX025

EE002

EE003

Description	Cat ref.
Flush Mounted Cell has 1m, 2 x 0.75mm² Cable	**EE002**
Surface Mounted Cell has 4m, 2 x 0.75mm² Cable	**EE003**

Used for automatic lighting control or heating of the premises based on occupancy and lighting level.
Principal applications - Offices, corridors, conference rooms, classrooms, etc

Functions - ON/OFF control, Up/Down control, heating control, scene selection, time delay and priority setting, setting dimming levels, Master/slave function.

The bi-directional detector head can be oriented at 90° to adapt the zone of detection depending on the configuration of the room. A large area of detection - with the help of two integrated sensors, these products are able to detect movements in a large area and detect presence (person working in office) in a smaller area.
Products delivered with BCU (coupling unit to the bus)

2 Versions of Detectors
- 2 channel detector with On/Off control AND
- 1 channel lighting regulator detector (for maintaining constant light)

Installation
Programming is carried out by configuration device TX100B via media coupler/ETS.

For technical details see page 6.34.

TX510

2 Channel Presence Detector 360°

Channel 1: Switching based on presence and lux level. Switching takes place when presence is detected and the lux level is below the set point. Lux level settings - 5, 100, 200, 300, 500, 800, On permanent, Delay off time - 1min to 30min Application - switching off lighting, blinds, curtains or shutters.

Channel 2: Switching based on presence only. Uses both delay on and delay off for switching. Delay off 30 sec > 10 mins - Delay on = 30 secs Delay off 10 mins ≤ 60 mins - Delay on = 5 - 60 mins

Application: heating, ventilation, etc.

Description	Dimensions dia. x depth (mm)	Supply	Cat ref.
Light intensity from 5 to 1200 lux Time delay for lighting Time delay for presence Area covered - 13x7m at 2.5m height	110 x 31	Bus 30V DC	**TX510**

TX511

1 Channel Presence Detector 360°

Associated with tebis dimmers, it is possible to maintain light intensity in a room at a constant level as long as there is presence in the room irrespective of changes in the natural lighting.

3 Operating Modes
- Mode 1 - Dimming inactive (only presence info used)
- Mode 2 - Dimming active as per light setting on product potentiometer
- Mode 3 - Dimming active.Lighting instruction can be changed by long push on communicating PB of presence detector

Description	Dimensions dia. x depth (mm)	Supply	Cat ref.
Light intensity from 5 to 1200 Lux Time delay for lighting Area covered - 13 x 7m at a height of 2.5m	110 x 31	Bus 30V DC	**TX511**

Automation products provide commands in form of contacts. Input information such as rain, wind, sunrise, sunset, indoor and outdoor temperature, as well as commands from remote telephone interface are received and forwarded to input modules for controlling the outputs in the tebis system.

Wind detector - helps in protecting blinds and shutters in the event of strong wind by creating a closing command.

Weather station - it includes a sensor block and a modular unit for interpretation. It is a complete system with input sensor, processing and weather data transmission.
It also integrates a weekly programmer equipped with DCF77 antenna.

TG050

Wind Detector

Helps protect blinds in the event of strong wind. Consists of an anenometer and electronic box. Use with the tebis system - contact of anenometer can be connected to input module TX314 and TX316. (For further details see page 6.29).

Description	Dimensions dia. x depth (mm)	Supply	Cat ref.
Level of detection adjustable from 5 to 55km/h (Factory preset to 25km/h)	110 x 31	230V AC 50 Hz	**TG050**

TG051

Weather Station

The station is supplied with sensors for wind, sun, rain and temperature. 8 relay outputs can be freely programmed. It is possible to obtain output by crossing a set point of a parameter or information from several pieces of data can be combined by switching functions AND/OR (e.g. : rain & wind) Input modules are necessary for connecting weather station to tebis system. (For technical details see page 6.33).

Description	Dimensions h x w x d (mm)	Supply	Cat ref.
Operating temperature: -30 to +50°C Max distance between unit and sensor: 30m Connection cable for sensor: 3 x 0.75mm² 24V	120 x 65 x 110	230V AC 50 Hz	**TG051**

Telephone Gateway
3 Inputs, 3 Outputs

- Remote control : 3 relay outputs
- Status indication : for each output
- User friendly voice guide in English
- Remote alarm detection and sending of voice messages to 3 programmed telephone numbers
- Recording of your own messages
- Voice messages for room temperature indication possibility to use together with an answering machine on the same telephone line
- Personal secret code to limit access to the device
- Timed switch-off of the relay output (from 1 second up to 59h 59min 59sec)

Description	Width (mm)	Supply	Cat ref.
Analog telephone line (PSTN) 48VDC 3 relay output 5A-250V AC1 1 temperature measurement CTN 10 kOhm 2 alarm inputs : 1 input 0-30VAC/DC 5mA min 1 input 0-230V AC 5mA min Power shutdown detection	87.5	230VM ±15% 50/60 Hz	**TH020B**

TH020B

Environment
Working temperature : 0/+50°C
Storage temperaure : -20/+70°C
IP 30, IK03

Connection
Flexible 2 x 2.5mm² max
Rigid : 2 x 2.5mm² max

These products serve as output interfaces for the tebis system. They ensure the control of the electrical devices by taking commands transmitted by the input products.

Lighting output products allow control of all types of devices by On/Off control or dimming. Without modifying the wiring, it is possible to achieve:
- On, Off or dimming controls in individual and grouped or general controls
- Functions such as time delays, priority settings, scene selection or multi-applications.

All the output modules are equipped with output status display and with a manual override setting on front of the product.

For control of:
- Lighting
- Heating
- Power outlets
- Any load controlled by a simple contact

Note: Refer to technical information for de-rating for alternative load types.

For technical details see page 6.35.

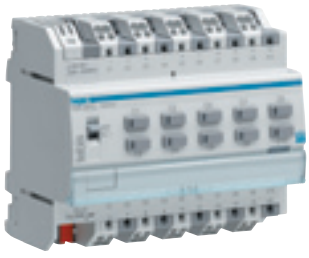
Lighting and Heating

Functions:
- ON / OFF & ON / OFF Override
- LED indication of each output state
- High end timer function
- Full quick connect connections
- Full symmetrical top down cross through connections
- Large front labelling
- Local on device hand override, permanent or time limited

Description	Nº of Volt-Free Contacts	Supply (twisted pair)	Width (mm)	Cat ref.
16A AC1	4	Bus 30V DC	70	**TXA204C**
4A AC1	6	Bus 30V DC	70	**TXA206A**
10A AC1	6	Bus 30V DC	70	**TXA206B**
16A AC1	6	Bus 30V DC	70	**TXA206C**
16A AC1 / 1500W - 140µF adapted for parallel compensated fluorescent tubes	6	Bus 30V DC	70	**TXA206D**
16A AC1	10	Bus 30V DC	105	**TXA207C**


TXA204C


TXA206D


TXA207C

Dimmers
TXA210, TXA210A, TXA213, TXA215
Universal dimmer with automatic load recognition
Min/Max level local setting
Manual mode that allows dimming even when the bus is disconnected
Power rating specified at 45°C

Easy mode: (TX100B)
Implementation of the channel dimming actuator scene.

S-mode: (ETS software)
Easy channels features
32 light scenes with a related scene speed.
Fixing of output state when bus is disconnected.
Enhanced override modes (forced).

TXA210 Universal dimmer 1 channel 600W
TXA210A Universal dimmer 1 channel 300W
TXA213 Universal dimmer 3 channels 300W

3 modes possible :
- 3 channels 3 x 300W
- 2 channels 600W / 300W
- 1 channel 900W

TXA215 Universal dimmer 1 channel 1000W
Dimmer with LCD display
Local setting of the dimming parameters (min/max, soft ON, soft OFF, dimming speed) and light scenes.
8 light scenes that can be activated locally.

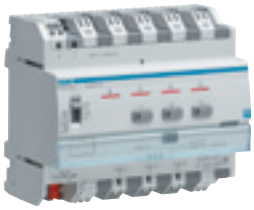
For technical details see page 6.36 - 6.37.

1 Channel Universal Dimmer 600W

Description	Width (mm)	Cat ref.
600W 45°C Incandescent / Halogen 600VA VLV Halogen associated with electronic or ferromagnetic transformer	70	**TXA210**

1 Channel Universal Dimmer 300W

Description	Width (mm)	Cat ref.
300W 45°C Incandescent / Halogen 300VA VLV Halogen associated with electronic or ferromagneHic transformer	70	**TXA210A**


TXA213

3 Channel Universal Dimmer 300W

3 channel dimmer that can be used as 3 x 300W, 600W/300W or 900W, selector on device

Description	Width (mm)	Cat ref.
300W 45°C 300VA VLV Incandescent / Halogen associated with electronic or ferromagnetic transformer	105	**TXA213**


TXA215

1 Channel Universal Dimmer 1000W

LCD display used to indicate the dimming level and to set the dimming parameters min, max, diming speed, soft on, soft off, scenes

Description	Width (mm)	Cat ref.
1000W 45°C Incandescent / Halogen 1000VA VLV Halogen associated with electronic or ferromagnetic transformer	105	**TXA215**


TX211

Output Modules for Variable Lighting (Dimmer Control)

For incandescent and halogen lamps 230V. Halogen lamps ELV supplied with variable or ferromagnetic electronic transformer. Functions include ON/OFF and variation in lighting/dimmer control.

Description	Width (mm)	Cat ref.
1 Output 1/10V	70	**TX214**
3 Outputs 1/10V	70	**TX211**

These products serve as output interfaces for the tebis system. They ensure opening and closing control of shutters, roller shutters, curtains, blinds, flaps etc. They interpret commands such as Up, Down, priority setting for Up or Down and Wind detection commands transmitted by input modules. All the output modules are equipped with output status display and with a manual override setting on the front.

Note:
- Shutter output modules will open and close KNX/EIB compatible acutators
- Blind output modules will open, close and incline the slats of KNX/EIB compatible actuators

For technical details see page 6.39.

Output Device for Shutters or Blinds

For control of roller-shutter curtains or venetian-blinds motors, KNX/EIB

Functions:
- UP/DOWN
- Blind inclination and STOP
- UP/DOWN/STOP manual override
- LED indication of each output state
- Wind security functions
- Blocking
- Priority
- Scenes
- After bus failure position

TXA223

TXA224

Description	Width (mm)	Cat ref.
4 Shutter Outputs 230V	70	**TXA223**
4 Shutters or Blind Outputs 230V	70	**TXA224**
4 Shutter Outputs 24V DC	70	**TXA225**
4 Shutter or Blind Outputs 24V DC	70	**TXA226**

Thermostat TX320
Continuous room temperature regulator, featuring real-time temperature measurement, capable of sending an adjustment value to a servo or actuator, so to achieve the desired room temperature. It can control both heating device and air-conditioners.

Heating ouput, 6 channels
This device is designed for installation into a hot water circulation system, to control a 24V valve servo, e.g.: floor heating facilities. Output switching utilises a Triac so that noiseless switching can be achieved.

Valve Control Servo
This servo has a bus connection, which can be directly installed onto the universal valve of the radiating heaters. The corresponding valve servo and motorized device is controlled via the room temperature controller.

For technical details see page 6.38.

Thermostat

Features:
- Power supply: 30V DC
- Measuring range: 0°C to 40°C
- 3 external contact points used for measuring input terminals, such as window magnetic contact points

Function:
- Heating / Cooling
- 2 step heating - Primary and Supplementary
- Work mode: Comfort, Standby, Night time, Frost / Overheat protection
- Switch, Light dimming, Blinds control

new

TX320

Description	Dimensions h x w x d (mm)	Cat ref.
Thermostat	27 x 84 x 80	**TX320**
Floor temperature sensor for TX320		**EK087**

Heating Valve Controller (6 Channels)

Features:
- Power supply: 230V power socket
- System voltage of 30V DC
- Property: 6 channels for 24V heating valve drive (max 13 pcs/channel)
- 6 channels output
- Size l x w x h (302 x 755 x 70)

Function:
- Adjusting value in %
- Override service
- Summer operation

new

TX206H

Description	Dimensions h x w x d (mm)	Cat ref.
Heating valve controller (6 channels)	70 x 755 x 302	**TX206H**

Valve Control Servo with Room Temperature Regulator

Features:
- Power supply: 230V power socket
- Property: 5 LED used to display servo locations
- Interface: 1m, 6-core cable is included

Function:
- Automatic regulating apparatus and temperature collection apparatus
- Work mode: Comfort, Standby, Night time, Frost
- Orientated start up
- Forced service
- Summer operation

new

TX502

Description	Dimensions h x w x d (mm)	Cat ref.
Valve control servo with room temperature regulator	70 x 755 x 302	**TX502**

RF input modules of EIB/KNX are used as interfaces for volt free contact and switches or conventional pushbuttons. Using these modules it is possible to control the electrical devices connected in the network by transmitting an RF signal. They can control RF output modules as well as TP wired products with the help of the media coupler TR131B. These products are particularly useful for renovating or extending existing installations.

2 or 4 inputs - 230V or Battery Operated
These input modules are available in following versions
- 2 or 4 input module version - flush mounted
- With power supply of 230V AC or with battery.

Operating temperature : 0°C to 45°C

Installation
Link allocation is to be done by configuration device TX100B. These products can also communicate with TP wired products with the help of media coupler TR131B.

General Characteristics of the Radio System
Frequency - 868.3 MHz
Range - variable according to the environment - up to 30m indoor, 100m in free air. Noise measurement is possible by TX100B.

RF System
• Maximum number of RF products = 256
• Maximum number of RF input translations by the media coupler to twisted pair output products = 63

For technical details see page 6.40.

TR304A

RF Input Modules (Battery Operated)

Frequency: 868.3 MHz
Power supply: Lithium battery CR1/2 AA 3.0V (Life 5 Years)
Transmission indicated by LED, for one way transmission

Functions:
- ON/OFF, dimming
- Up/Down + alarm - priority setting
- Scenarios

Description	Dimensions dia. x depth (mm)	Cat ref.
2 KNX Input Modules For 2 Volt Free Contacts	50 x 16mm	**TR302A**
4 KNX Input Modules For 4 Volt Free Contacts	50 x 16mm	**TR304A**

TR304B

RF Input Modules (230V)

Frequency: 868.3 MHz
Power supply: 230V AC 50Hz
Transmission indicated by LED, for one way transmission

Functions:
- ON/OFF, dimming
- Up/Down + alarm - priority setting
- Scenarios

Description	Dimensions dia. x depth (mm)	Cat ref.
2 KNX Input Modules For 2 Volt Free Contacts	52 x 30mm	**TR302B**
4 KNX Input Modules For 4 Volt Free Contacts	52 x 30mm	**TR304B**

Radio push-buttons and remote controls enable easy addition of control points without wiring work. They are suitable for all situations : new systems, renovations or post installation. These products are included in tebis system. They control both radio output modules as well as twisted pair products via TR131B.

Radio Push-Buttons
These are unidirectional radio emitters in the KNX standard. They exist in 2, 4 or 6 ways in surface mounting boxes of white or silver colour.

Solar Radio Push-Button
Does not require replacement batteries.

Radio Remote Control
These are portable radio emitters of EIB/KNX standard. The remote controls are available in 4, 8 and 24 ways.

Putting Into Service
Allocation of the links is carried out by TX100B configurator. These products also communicate with twisted pair products via the TR131B bus radio / twisted pair

General characteristics of the radio system
- Frequency : 868.3 MHz
- Range : it is variable according to the environment : up to 30m inside, up to 100m in free air.

Working temperature : 0°C to +45°C

A measurement of the signal interference is possible by TX100B

RF system
- Maximum number of RF products = 256
- Maximum number of RF input translations by the media coupler to twisted pair output products = 63

For technical details see page 6.41.

TD210

Push-Buttons with and without Label Holders Radio KNX

Power supply: C2430 3.0V Battery Cells (Life 3 Years)
Unidirectional products: Emitter
Transmission indicated by LED

Functions:
- Start/Stop, Dimming
- Up/Down + Alarm
- Override
- Scenarios

Description	Colour	Dimensions (mm)	Cat ref. without labels	Cat ref. with labels
2 Way Push-Button Keys	White	80.5 x 80.5 x 12	**TD100**	**TD110**
2 Way Push-Button Keys	Silver	80.5 x 80.5 x 12	**TD101**	**TD111**
4 Way Push-Button Keys	White	80.5 x 80.5 x 12	**TD200**	**TD210**
4 Way Push-Button Keys	Silver	80.5 x 80.5 x 12	**TD201**	**TD211**
6 Way Push-Button Keys	White	80.5 x 80.5 x 12	**TD300**	**TD310**
6 Way Push-Button Keys	Silver	80.5 x 80.5 x 12	**TD301**	**TD311**

TD251

KNX Solar Push-Button

Description	Colour	Dimensions (mm)	Cat ref. without labels
4 Way Push-Button Keys	White	80.5 x 80.5 x 12	**TD250**
4 Way Push-Button Keys	Silver	80.5 x 80.5 x 12	**TD251**

TU404

KNX Radio Remote Controls

Power supply: CR 2430 3V Lithium Battery Cell (life 3 years)
Unidirectional products: Emitter
Transmission indicated by LED

Functions:
- Start/Stop, Dimming
- Up/Down + Alarm
- Override
- Scenarios

Description	No of Keys	Cat ref.
2 Channel Remote Control	2	**TU402**
4 Channel Remote Control	4	**TU404**
6 Way Remote Control	6	**TU406**
18 Way Remote Control	6 + 1	**TU418**

The RF EIB/KNX input/output modules are used as an interface between volt free contacts of switches or conventional pushbuttons at input level and electrical devices at output level for direct control. These products are able to communicate with other RF or TP wired products (via media coupler TR131B). They are particularly useful for renovating or extending existing installations.

1 Input + 1 Output 10A
For creating simple lighting functions for integrating in a group, general controls or other scenario functions by simple programming.

2 Inputs + 1 Output Shutter/ Blind
For creating shutter control function for integrating in a group, general control or other scenario functions by simple programming.

Installation
Link allocation is carried out by configuration device TX100B. These products also communicate with TP wired products with the help of media coupler TR131B.

General Characteristics of RF System
Frequency - 868.3 MHz
Range - variable according to the environment - up to 30m indoor, 100m in free air.
Noise measurement is possible with the TX100B.

RF System
- Maximum number of RF products = 256
- Maximum number of RF input translations by the media coupler to twisted pair output products = 63


TR501

1 Input + 1 Output 10A

Product supplied with input/output module pre-configured for control of the connected output.
Power supply: 250V AC 50Hz

Functions of Input:
- ON/OFF, Dimming
- Priority Setting
- Scenarios

Functions of Output:
- ON/OFF Control
- Time Delay
- 8 Scenes
- Priority Setting

Description	Dimensions dia. x depth (mm)	Cat ref.
Bidirectional Product for Transmitting and Receiving 1 Volt Free Input for Push-Button Switch 1 Output 10A AC1 230V AC For manual control by TX100B Output status display by LED	56 x 30	**TR501**


TR521

2 Inputs + 1 Output Shutter/Blind

Product supplied with input/output module pre-configured for control of the connected output.
Power supply: 250V AC 50Hz

Functions of Input:
- Up/Down by brief push > 400ms

Output for Shutter Motor:
- Scenarios

Functions of Output:
- Up/Down Control
- Inclination of Flaps
- Alarm Security for Wind, Rain
- Time Delay
- 8 Scenes
- Priority Setting

Description	Dimensions dia. x depth (mm)	Cat ref.
Bidirectional Product for Transmitting and Receiving 2 Inputs Volt Free Contacts 1 Output 6A AC1 230V AC Output status display by LED	52 x 27	**TR521**

RF KNX output modules take commands transmitted by input modules. They interface between commands and electrical equipment.
These bidirectional products are able to communicate with all other RF or TP wired products (via media coupler TR131B).
They are particularly useful for renovation or for equipment already installed.

1 RF Output 16A
This flush mounted module helps control circuits of lighting, VMC, heating, solenoid valves, etc.

Expansion
All RF output products can be integrated by simple programming, in zone group control, general or centralised controls and in scenarios functions.

Installation
Link allocation is carried out by configuration device TX100B.
These products can also communicate with TP wired products via media coupler bus/ radio TR131B.
General characteristics of the radio system
Frequency - 868.3 MHz
Range - variable according to the environment - up to 30m indoor, 100m in free air.
Noise measurement is possible with the TX100B.

RF System
- Maximum number of RF KNX products - 256

For technical details see page 6.42 - 6.43.

TR201

1 Output 16A

For control of lighting, heating of the VMC etc.
Power Supply: 230V AC 50Hz

Functions of Output:
- ON/OFF control
- Time Delay
- 8 Scenes
- Priority Setting

Description	Dimensions dia. x depth (mm)	Cat ref.
Two Way Product for Transmitting and Receiving 1 Output 16A AC1 23V AC Manual Control by TX100B Output status display by LED	52 x 30	**TR201**

TR210

1 Flush Mounted Dimming Output 200W

For remote control of dimmable lighting.
Power Supply: 230V
Frequency: 868.3MHz

Functions of Output:
- ON/OFF control
- Dimming 0-100%
- LED Indication of each
- 8 Scenes

Description	Dimensions dia. x depth (mm)	Cat ref.
Max. load with incandescent lamps 200W - 45ºC Max. load with 230V halogen lamps 200W - 45ºC Max. load with halogen ELV lamps via ferromagnetic transformer 200VA - 45ºC Max. load with halogen ELV lamps via electronic transformer 200VA - 45ºC Bidirectional product	52 x 30	**TR210**

TR221

Output Device for Shutter/Blinds

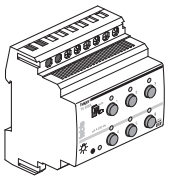
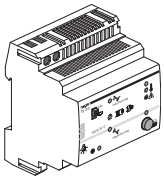
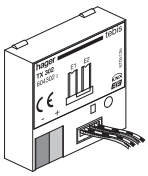
For the control of shutters, blinds or blinds with bidirectional flaps.
Power Supply: 230V AC 50Hz

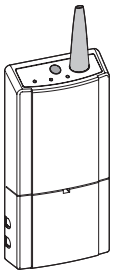
Functions of Output:
- Up/Down control
- Inclination of flaps
- Alarm security wind, rain
- Time delay
- 8 Scenes
- Priority setting

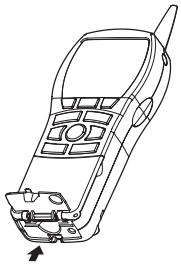
Description	Dimensions dia. x depth (mm)	Cat ref.
Two way product for transmitting and receiving Output for 1 motor Push-button switch 6A AC1 230V AC Manual control by TX100B Output status display by LED	52 x 27	**TR221**

Configuration of a system containing only wired TX products

Related products : all TX input/output products and for configuration : TX100B configurator, USB Flash Drive, media coupler.


Media Coupler


TX100B with USB Connectivity

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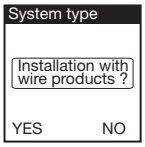
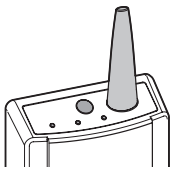
1. Put the TX100B into operation
The method is the same for RF systems.

Choose the system type. As there are only wire products, reply **YES**



It is necessary to select a wire installation by pressing on the media coupler button until the red light is switched on (4s).

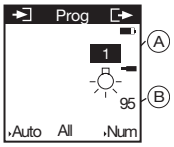
When the pairing is carried out a signal sounds. Wait for the screen display Auto to continue



Select Program

2. Configuration and numbering of the outputs in Prog mode
A long press on the key starts configuration of the outputs and their automatic numbering.

At the end of configuration the screen displays first found output (A) and the number of outputs detected (B)

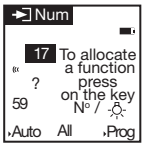


Select the Num mode

3. Numbering of the inputs in the Num mode
For numbering the inputs it is necessary to activate them by pressing on the push-buttons or the switches which are connected to them. The configuration allocates them a number automatically

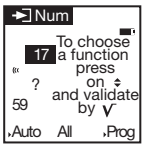
Do not press on next input until input number is assigned to current input.

Allocate a function to the input



4. Selection of a function in Num mode
After the numbering of inputs one can select a function. For this purpose, press on the key
Select the function with the left keys
Validate by press on = ✔

Go to Prog mode



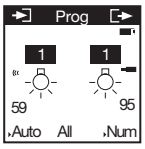
5. Creation of a link between an input and an output in the Prog mode

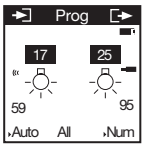
Select an input with the left arrow key or by activating the push-button or the switch, which is connected to it.

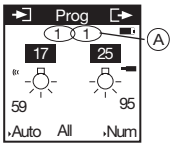
Select an output by its number with the right keys or locate the output by a press on which will activate the output displayed.

Validate the link by a long press on = ✔

A symbol confirms the creation of the link (A)







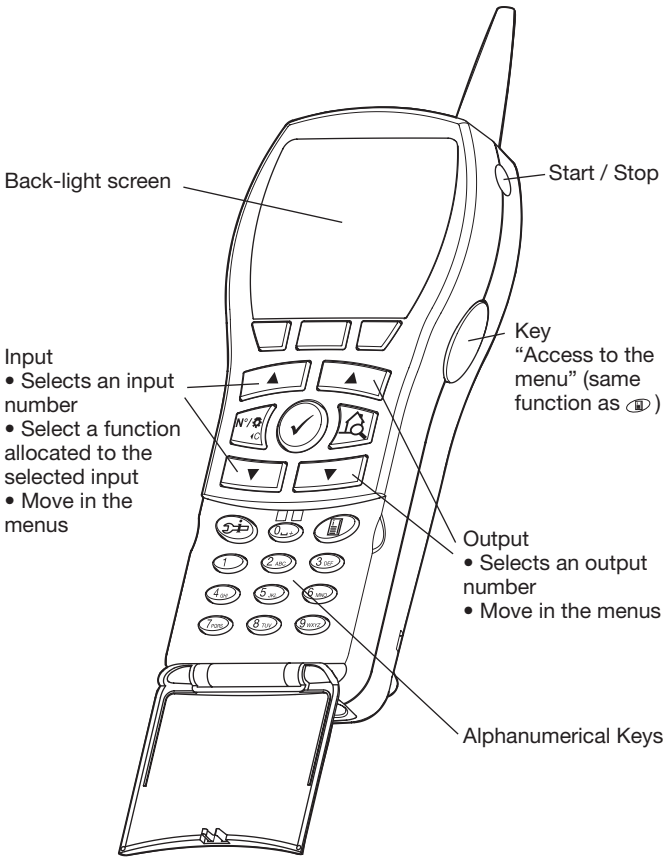
Configuration of a combined system containing both TX wire products and RF radio.

Means to be used for configuration : TX100B configuration, USB flash drive and media coupler products : TX wired or RF radio, input or output products

TX100B configurator

The TX100B portable configurator is the tool which programs the desired functions and displays the links between all the products being found in an installation : wire products and/or unidirectional or bi-directional radio system. If the system contains wire products, it is necessary to use the media coupler TR131B. A USB flash drive inserted in TX100B backs-up all the data relating to a system.

Description of the keys



Description of the keys:

Screenkeys
Function of each key is indicated on the screen above them, the function changes depending on the screen

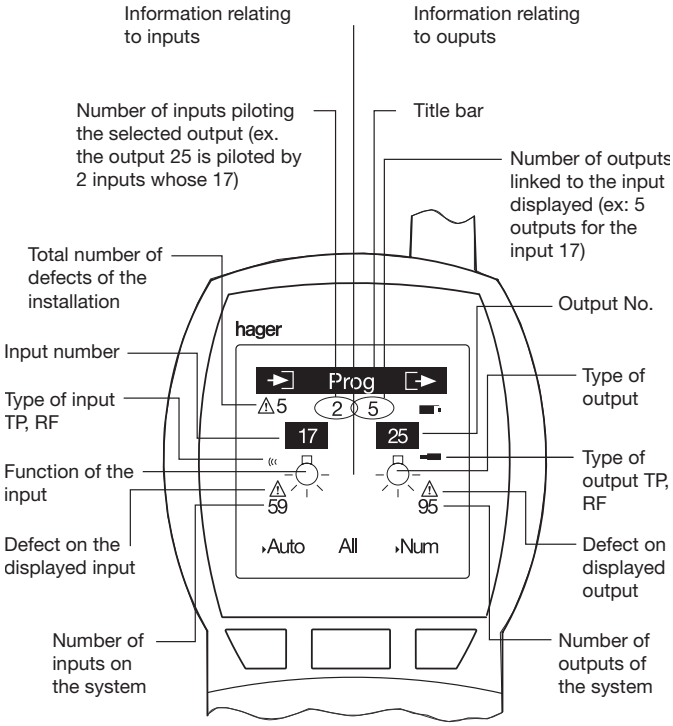
- Validates the operation in progress
- Selects the menu
- Validates the entry

- Change the function of the keys on the left (selection of either an input number or a function) return to the previous menu

- Activates the selected output
- Starts the numbering of the outputs of the installation

- Access to the help screens for installation

- Access to menus



Description of the symbols:

- Battery charge level
- Output
- Input
- Radio product
- Wire product
- Preparation of a link
- Link established
- Delete a link

Sound

- A single “beep” indicates a successful operation
- A double “beep” indicates an unseccessful operation

Expert Tip

There are 2 ways to select a channel :

• Selection of an input by acting on the appliance that control it : push-button, switch or remote control. Selection of an output by acting on the manual control of the output product.

• Selection of the inputs or outputs with TX100B by their numbers with the help of keys

Radio system
The TR radio system (to KNX standard) exists in input products, output products and products with combined input/output. They communicate between themselves by using the 868 MHz radio frequency. The products are classified into 2 categories :
- The unidirectional input products : they are only emitters and have only information sent.
- The bidirectional products : they are both emitters and receivers and can thus send and receive information.

These latter ones can also be configured as radio repeaters by TX100B to increase globally the reliability of the transmission.

Supply of radio system is done, in the following way :
- By 230V mains
- By a battery cell

In an installation containing only radio system, the configuration is done only with TX100B configuration tool; the media coupler is not used.

The products with combined input/output are pre-programmed; for example for a 2 input products and 1 output or control of roller shutters, the basic functions as for example up/down are preregistered. Only modification of functions, as for example to carry a centralized control, need the use of TX100B.

Radio range (indicative data) :
- in open field : 100m
- Inside a building : up to 30m

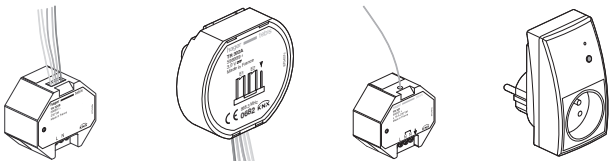
A pure radio system can contain **up to 250 TR products.**

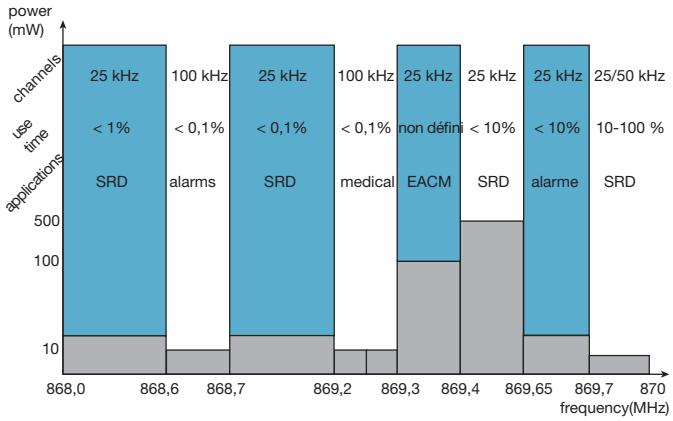
The MHz 868 : a dedicated frequency
The frequency used is 868 MHz. This frequency is harmonized at the European level. There are 2 levels emission power :
- Repeater products : 25mW maximum
- Battery cell products : 10mW maximum

As comparison, a portable telephone emits with a power of around 2000 mW.

It is to be noted that the regulator authorities have specially attributed the band of 868 MHz to building automation and home automation : the occupation or “duty cycle” rate is predefined and thus avoids the saturation problems of the band. The 868 MHz is outside ISM bands and cannot be thus saturated by permanent emissions (headphones for example).

Topology 2 :
tebis radio system

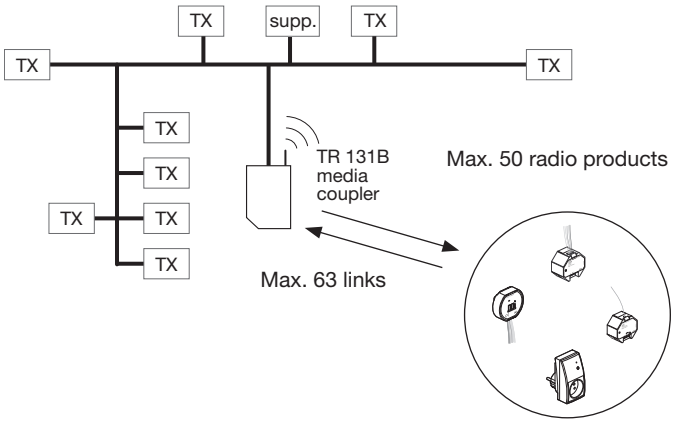




Combined system : Wire + Radio
The combined system needs to put in place a TR130B media coupler to transmit the messages of wire products to the radio system and vice versa.
For systems which contain both wire and radio products, the information given above for topics 1 and 2 remain valid. But you must take into account the following limitations :
- Maximum of 63 products of 250 possible radio systems can communicate with TP wire products.
- Maximum 50 links can be established from the wire part to the radio part.
- 1024 channels are available and distributed in 512 channels of inputs and 512 channels of outputs.

Example :
6 output products = 6 channels
4 input products = 4 channels
2 input radio products = 2 channels

Topology 3 :
Mixed tebis system containing both twisted pair and radio products



Topology and architecture of a system
Each installation consists of input and output products which can be wire or radio.
For wire products, a TXA111 bus supply must be installed.
Media and communication support :
- Wire products : use of the bus cable (2 x 2 x 0,8mm)
- Radio system : the link is done by 868 MHz reserved radio frequency

Topology 1 : Wire installation
Each tebis product can exchange Information with all other tebis products connected to the bus cable. Supply of bus is done in continuous 30V DC SELV.

The right side outline gives the maximum lengths of the bus cable with a TXA111 supply.

The following values must not be exceeded :
- Total maximum length : 1000m
- Maximum distance between twisted pair 2 products : 700m
- Maximum distance between supply and a product : 350m

The above data define an EIB line. Each EIB line needs a supply and can have up to 64 communicating products.

Role of the TA008 line coupler
The line coupler “expand” and put back into form the signals on the bus cable and allow to extend the system. Thanks to the coupler the primary line can be extended up to 3 times.

Maximum limit of an “extended” line:
The diagram on the right shows the maximum limits of the system with 4 supplies and 3 line couplers. The lengths of different elementary lines remain the same but at the end, the following
- Total maximum length : 4 x 1000 m
- Maximum distance between 2 products on the same line : 700 m
- Maximum distance between supply of an elementary line and any product of the same elementary line : 350 m

You can thus install at the maximum 4 x 64 = 256 TX products

Role of the TR131B
In the configuration phase of the installation, the TR131B is the interface between the TX products, connected among themselves by the bus cable and TX100B radio configuration tool.

After putting into service, the TR131B can be withdrawn and reused to configure other systems.

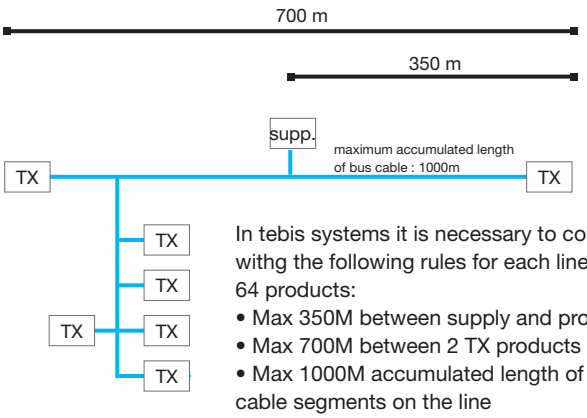
Nevertheless in case of modification of the system or for maintenance needs it will be necessary to reinstall again the media coupler, that is why, **we recommend leaving TR131B in the system.**

Several system architectures can be found :

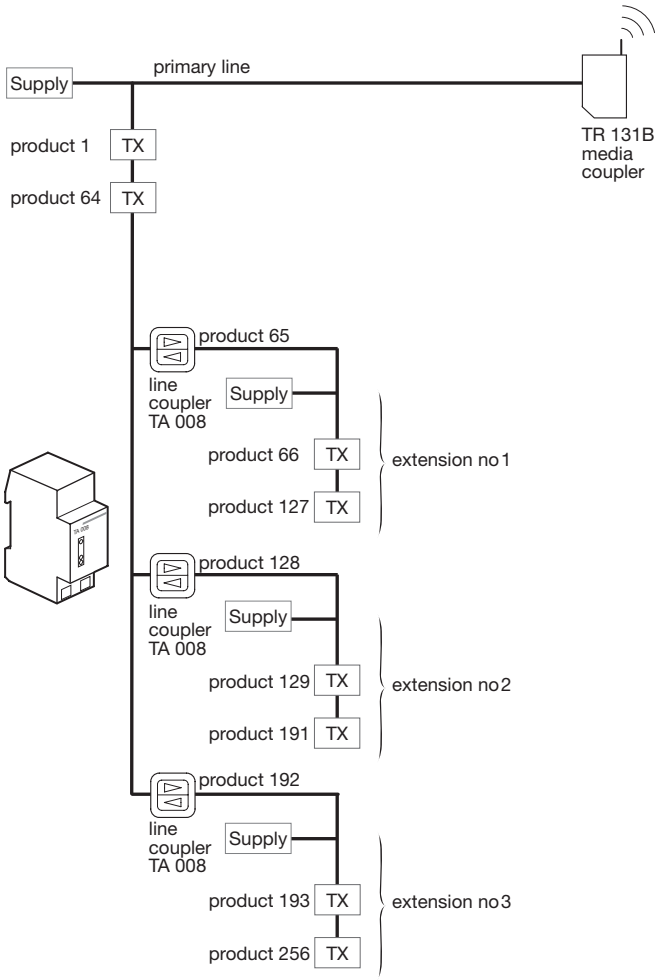
1. fully wire systems
2. fully radio systems
3. combined wire and radio systems

The topologies corresponding to these 3 types of systems are described below :

tebis Wire System
Extension of a tebis system using wire products



In tebis systems it is necessary to comply withg the following rules for each line of the 64 products:
- Max 350M between supply and products
- Max 700M between 2 TX products
- Max 1000M accumulated length of all bus cable segments on the line



You can extend a line and install more than 64 products by using line couplers and additional supplies (maximum 3).

Note: Power supplies do not count as product, but line couplers do.

Description of the system
tebis is a flexible and functional electrical installation for lighting control, roller shutters and adjustment of the temperature room by room. From the implementation point of view, the main difference in relation to a conventional system is the separation of the control and power.

The controlled loads, for example lighting, roller shutters, controlled sockets, are to the output products, themselves connected to connected upstream protection devices. It is no longer necessary to connect from various 230V switch wires from switches, push buttons, to the controlled loads.

The input products implement the orders of the user (pushbuttons, detectors,....) they are interconnected by a unique bus cable distributed star-shaped or in a continuous loop, or by radio frequencies.

tebis therefore carries out, the functions required by simple programming and creation of links between input and output products.

The cabling phase of a tebis system is independent from the programming phase of the functions.

The designing of a system is simplified by allowing a flexible adaptation to customer demands.

Composition of the system
Each installation consists of input products and output products which are interconnected either:
- By bus cable : called also wire link (or cable pair) or twisted pair
- By radio : called also RF link (or radio frequency), in 868 MHz

Several system types may be implemented:
- Completely “bus” wire systems with TX products
- Completely radio systems with TR-TU-TD products
- Combined systems, combined twisted pair and radio products

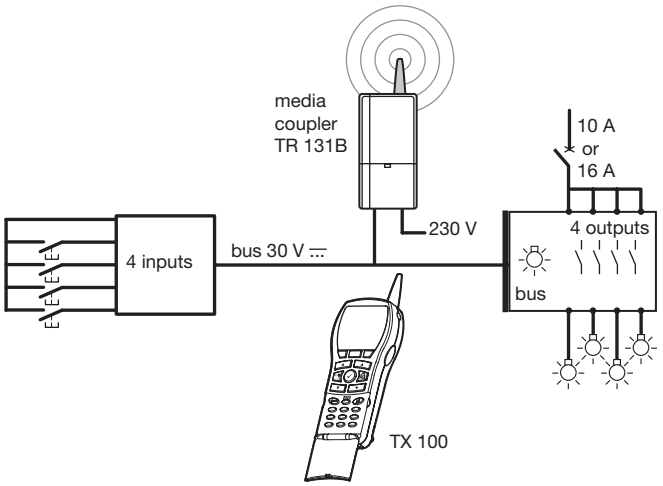
Configuration and commissioning
For configuration, the TX100B radio configuration tool and TR131B media coupler are used. The configuration information of the system is safeguarded in a standard USB flash drive, placed in TX100B.

The configuration can be done very easily with the TX100B portable radio tool : room by room, product by product or function by function.

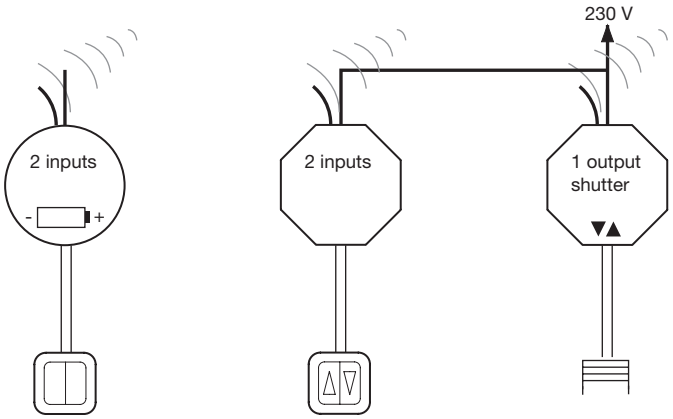
System products are used in the following manner for the system type implemented:

Wire system principles
The bus products are supplied by safety very low voltage bus.
The configuration needs TX100B configurator and TR131B media coupler.

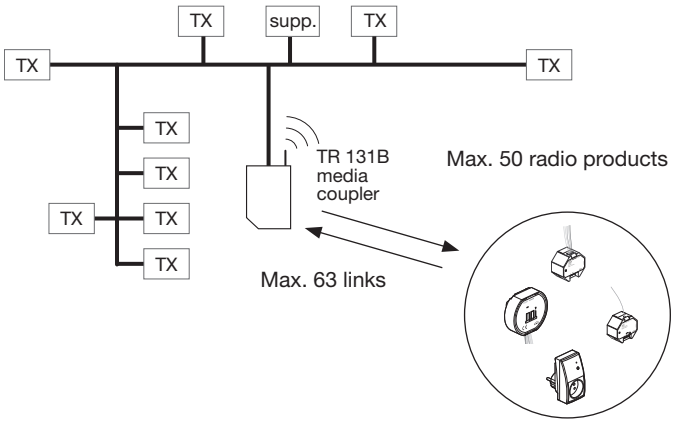
After configuration the media coupler can be removed and used for another project but needs to be reinstalled if later modifications are required.



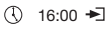
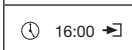
Radio system principles
The radio products are powered by the mains or a battery .
The configuration is carried out directly with TX100B and the radio products (without media coupler).



Combined system (bus+radio) principles
The configuration is carried out with TX100B and TR130B media coupler. In this case, it is necessary to leave the media coupler in place to ensure communication between wire and radio.



Symbol and Function

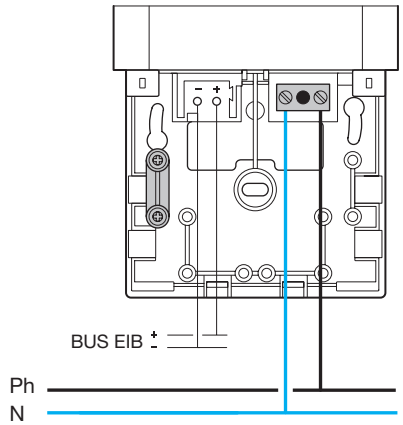
Applications	Symbols	Control Type	Control Product
Lighting		Switching on only	Automatic contact or push button, or TX512, TX022-TX023, TX025
		Switching off only	Automatic contact or push button, or TX512, TX022-TX023, TX025
		Switch type ON/OFF	Automatic contact or push button, or TX512, TX022-TX023, TX025
		Remote break type ON/OFF	Push button
		Remote break type ON/OFF for unidirectional products	RF Push button
		Increase the dimming level	Push button
		Decrease the dimming level	Push button
		Dimming on push button	Push button or detector, TX511, TX022-TX023
		Priority setting STOP	Automatic switch or contact, or TX510, TX022-TX023, TX025
		Priority setting START	Automatic switch or contact, or TX510, TX022-TX023, TX025
		Timed start - delay before ON	Automatic switch or contact, or TX510, TX022-TX023, TX025
		Timed stop - delay before OFF	Automatic switch or contact, or TX510, TX022-TX023, TX025
		Lighting level 25%, 50%, 75% or 100%	TX510, TX022-TX023, Tx025
Blinds/ Roller Shutters		Push button type UP	Push button
		Push button type DOWN	Push button
		Push button type UP-DOWN	Push button
		Switch type UP-DOWN function	Automatic switch or contact, or TX510, TX022-TX023, TX025
		Swtich type UP function	Automatic switch or contact, or TX510, TX022-TX023, TX025
		Switch type DOWN function	Automatic switch or contact, or TX510, TX022-TX023, TX025
		Override UP	Automatic switch or contact, or TX510, TX022-TX023, TX025
		Override DOWN	Automatic switch or contact, or TX510, TX022-TX023, TX025
		Wind safety	TG050 air safety detector or TG051 weather station contact
		Bad weather safety	TG051 weather station contact
Heating		Comfort	Temp. regulator, TX510 automatic push button or contact
		Eco	Temp. regulator, TX510 automatic push button or contact
		Comfort / Eco	Temp. regulator, TX510, TX022-TX023 automatic contact
		Frost free or without frost	Temp. regulator or automatic contact TX510, TX022-TX023
		Stop override	Automatic switch or contact or TX022-TX023
		Comfort override	Automatic switch or contact or TX022-TX023, TX510
		Eco override	Automatic switch or contact or TX022-TX023, TX510
		Timed comfort	Push button or detector TX510-TX511
		Timed eco	Push button
TX022 TX023 Clocks		Master clock	Diffusion TX022-TX023 of the hour on the bus for synchronizing the slave clocks
		Slave clock	TX022-TX023 synchronization on the hour emitted by the master clock
TX025 Photo electric switch		Master photocell switch	TX025 light sensitive switch (master) spreads on the bus the light intensity measured by the cell
		Slave photocell switch	TX025 light sensitive switch reads the light intensity measured by the cell and broadcasted by the master light sensitive switch
TX450A TX450B Ambient controllers		Display zone on the room controller (1 to 4)	Each zone (1 to 4) can display information (temperature hours, date) as well as states or measurements (lighting, heating, physical measurements or functions)
		Logical function	Creation of logical functions for displaying information on the system
All Applications	?	No function	
		Scenario 1 to 8	Push button

tebis TX

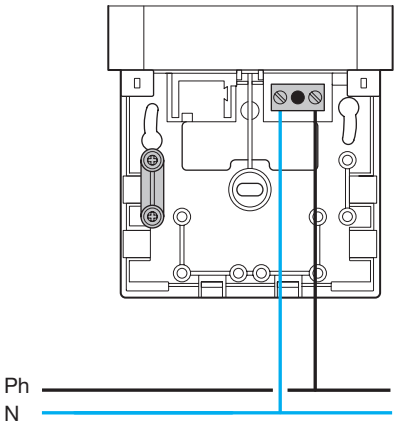
Technical Characteristics

	TX100B	TR131B	TX140B
Supply	4 batteries or LR6 battery cells	230 VM~ 50Hz ± 15% bus: 30V/DC	4 outputs (230 V phases)
Batteries	Ni-Mh 1.2V 1950mAh	-	-
Battery cells	1.5V alkaline	-	-
Working autonomy	AA 230V / 9V 1A charger type	-	-
Consumption	0.5A (per appliance)	-	-
Loss of Max. power	2W (per appliance)	-	-
Functioning autonomy	8 hours	-	-
Max recharge time	3h 30 mins	-	-
Broadcast frequency	868.3 Mhz	868.3 Mhz	868.3 Mhz
Broadcast power	Max. 10mW	Max. 25mW	Max. 25mW
Safeguard	USB flash drive	-	-
Working temperature	0ºC to +45ºC	0ºC to +45ºC	0ºC to +45ºC
Storage termperature	-20ºC to +70ºC	-20ºC to +70ºC	-20ºC to +70ºC
Ingress protection	IP 20	IP30	IP40
Weight	340 g		
Size	75 x 169 x 34.9mm	203 x 77 x 26.5mm	203 x 77 x26.5 mm
Antenna	52mm	52mm	52mm

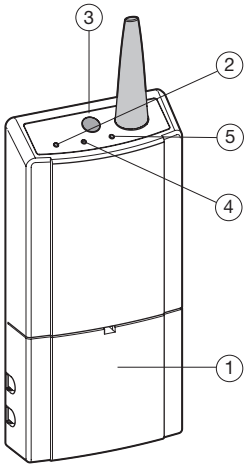
Electrical connection
TR131B



TR140B



Introduction of TR131B
Media coupler



① Cover

② 230V supply lighting

③ Pairing button : pairing with TX100B (to be activated when synchronising with TX100B : Select the coupler by pressing on its pairing button for a period of 4 up to 10 seconds)

④ Physical addressing light

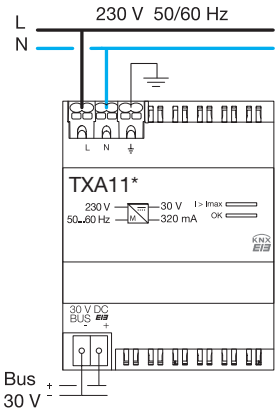
⑤ EIB / KNX communication light bus/radio

TXA112, TXA111 Supply Modules

Functioning principle
This module is the supply source of the bus.
The output voltage is of the ELV 29V type.

	TXA112	TXA111
Power voltage	230 V 50/60Hz	230V 50/60Hz
Output voltage	26 V 640 mA	29 V 320mA
Absorbed power	24 VA	15 VA
Connection:	Rapid connection	Screw terminal
Flexible	1.5mm²	0.75 to 2.5mm²
Rigid	2.5mm²	0.75 to 4mm²
Size	4 Modules	4 Modules
Working temperature	-5°C to +45°C	
Storage temperature	-20°C to +70°C	

Electrical Connection TXA112, TXA111



TG050 Wind Safety Detector

Composition of the products:
- An anemometer and its fixing support,
- Weatherproof interface box,
- The fixing screws of the box (piercing Δ 6 mm).

Electrical characteristics:
- Supply voltage : 230V 50 Hz,
- Contact type (wind safety) : 230V 4A (protection by slowed 4A fuse)

Functional characteristics:
- Wind speed threshold adjusting : up to 55km/h per potentiometer factory setted 25km/h)
- Reaction time at the threshold excess : 3 seconds (5 seconds max.)
- Wind blocking time : 10 minutes (fixed)

Environment:
- Class II insulation
- IP65 protection index
- Working temperature : -25°C to + 50°C.

Connection:
Capacity : 0.5 to 2.5mm²

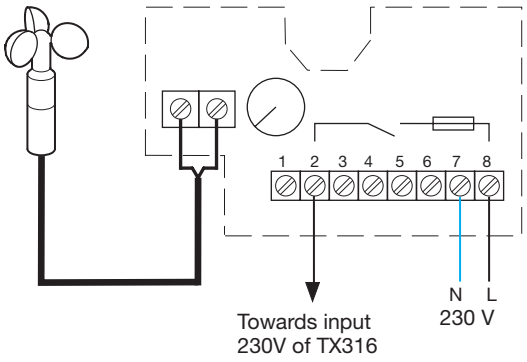
Overall size:
- Size of weatherproof box (overall) : 80 x 100 x 52mm
- Centre distance from fixing : 90mm

Working Principle
To exploit the wind safety function with the tebis TX system, it will be necessary to link the contact of the anemometer to an input of the TX316 module and programme the wind safety link with the configurator. The TG050 wind safety detector is used as protection device for blinds against gusty winds.

If the speed of the wind measured by the anemometer exceeds for 3 consecutive seconds a threshold adjusted by potentiometer, the total assembly of the blinds is launched instantaneously and the blinds are maintained in high position for 10 minutes at the minimum.
(other controls become inactive)

If the speed of the wind has weakened sufficiently after 10 minutes, the wind safety is deactivated; the control of the blinds is authorized again.

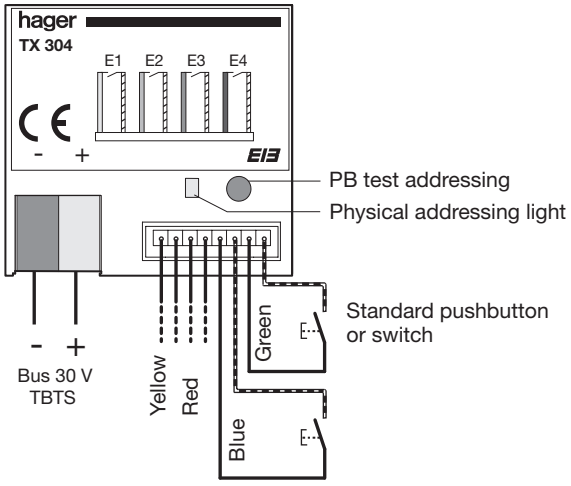
Electrical connection



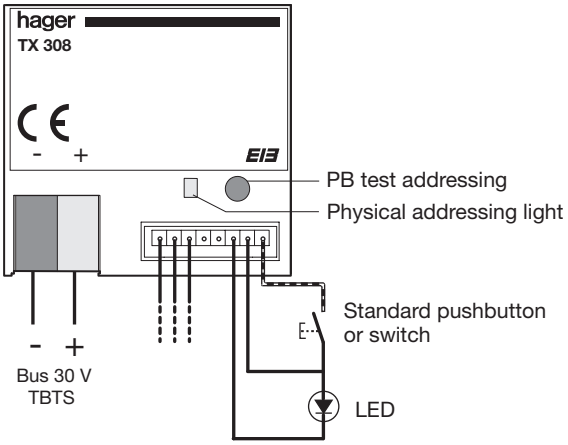
Technical Specification

	TXB302	TXB304	TX308	TX314	TX316
Size	35 x 38 x 12mm			3 Modules	4 Modules
Supply	30V by TX111				
Inputs	2 for potential free contacts	4 for potential free contacts		4 inputs 23V	6 inputs 230V
Outputs	-		4 outputs 5V DC Imax 850µA	-	
Voltage Delivered	5V DC impulse supplied by the product			230V AC (-15/+10%)	
Contact Current	0.5mA			19mA	
Spacing Current	-			7.3mA	3.9mA
Distance between contacts and the products	Slide in separable connector with 200mm length being able to be lengthened up to 5m.			30m Max	100m Max
Link to EIB bus	Red and black terminal TG008				
Links to Inputs	Separable connector of 200mm length			Through terminals: • Flexible: 1 to 6mm² • Rigid: 1.5 to 10mm²	
Temperature					
Working	-25°C to +55°C				
Storage	-5°C to +45°C				

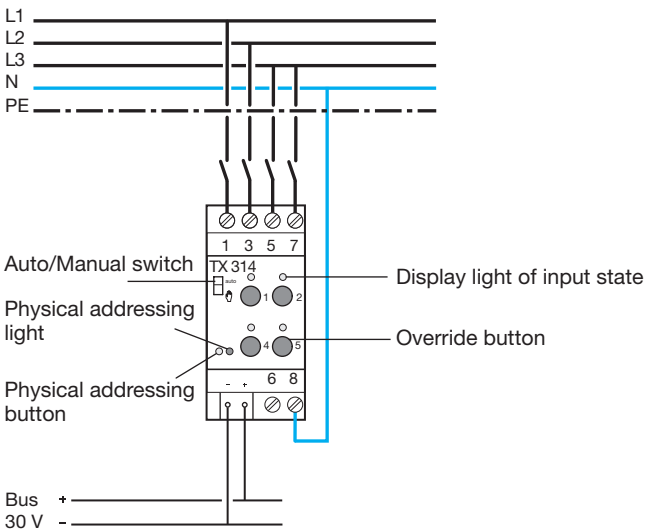
4 Input Module Flush Mounted : TX304



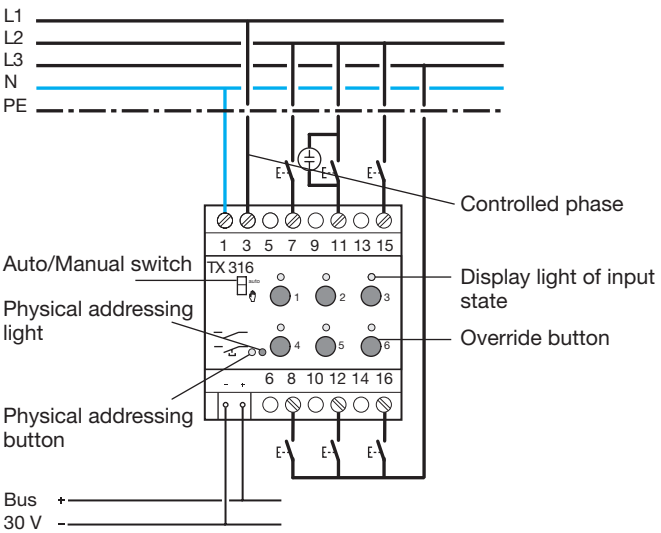
4 Input Module / 4 LED Outputs Flush Mounted : TX308



230V 4 Input Modules : TX314



230V 6 Input Module : TX316



Technical Specification

	TX450A	TX450B
Colour	White	Silver
Supply	30V DC bus EIB TX111	
Consumption	150mW	
Assembly	Surface mounting	
Accessories included	BCU	
Configuration	With TX100B or with ETS software and the application: TL450A	
Working Temperature	0°C to +45°C	
Size	80 x 80mm	

Function

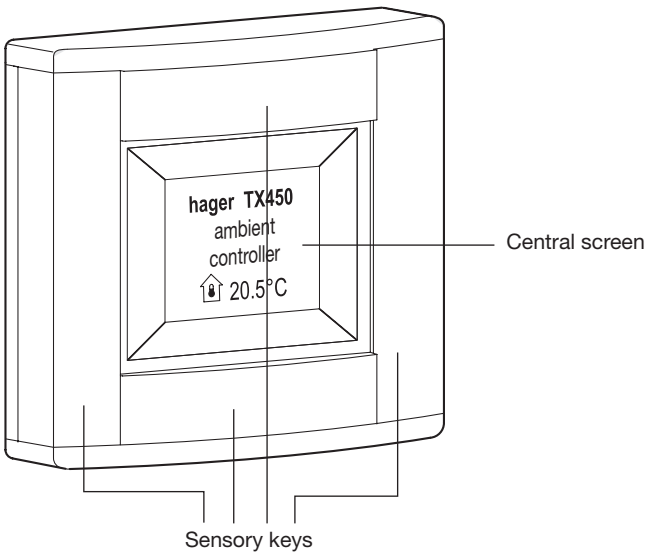
The room controller is a control and display wall appliance for the tebis system.
Available in 2 colours (white or silver)
It combines several functions in a single product
Through its 4 sensory keys, it allows :

- The control of lighting, roller shutters, heating etc.
- The control of functions developed as scenarios

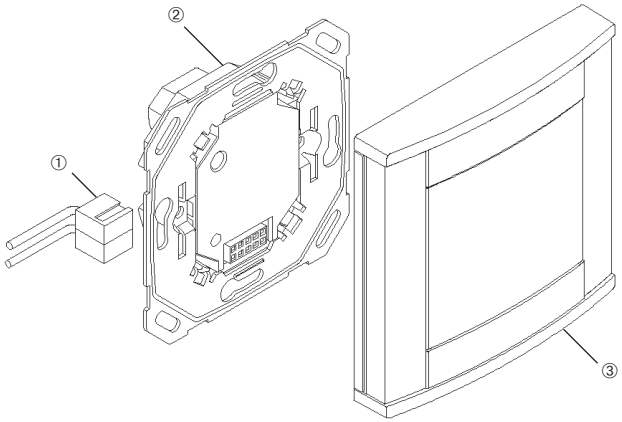
The central screen:

- Display of information on the state of equipment
- Display of the hour , date, ambient temperature...

This different information is parametered through the **"Adjustments"** and **"Configuration"** mode included in the product.



Electrial Connection



- Connect the BCU ② to EIB bus by EIB connector
- Screw the assembly plate with BCU on anchoring box ①
- Clip the front face ③ to the BCU.

Technical Specifications

Electrical characteristics
- Supply : 30 V DC bus EIB
- TX 022 : consumption : max. 9,5 mA
- TX 023 : consumption : max. 10 mA

Working characteristics
- Programming capacity : 56 steps
  to be distributed over the two channels
- Minimum time between 2 steps : 1 minute
- Start precision : 5 1.5 sec / 24h
- Start reserve : lithium battery cell (battery life 5 years)
- The product is placed in home position (display switched off) after 1 minute of voltage absence. It returns to Auto mode immediately on return of the voltage or on pressing on a key.
- Protection index : IP 20

Environment
- Working temperature: -5 to +45 °C
- Storage temperature : -20 to +70 °C

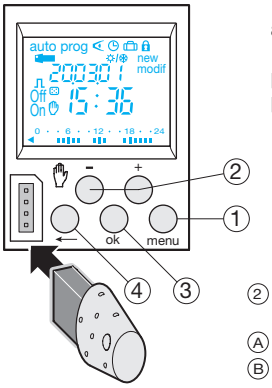
Connection with Cage Terminals
- Flexible : 1 to 6mm^2
- Rigid : 1.5 to 10mm^2

Reset
- Of the programme: it can be fully reset by simultaneous press on the following 3 keys: menu, ok and. The time and date are maintained.
- Total : by simultaneous press on the keys +, -, menus, ok and All the product content is deleted. After a total reset, it is necessary to reset the clock switch to hour and day.

Main Characteristics
- Product delivered set to current hour and day
- Automatic changing of summer / winter time
- Programming key
  for permanent exemptions
  for copying or safeguard of the programme
- Programming by day or group of days
- 56 step of program On, Off, 1 sec to 30 mn or dimming
- Permanent manual On or Off (fixed),
- Temporary manual On or Off that can be parametered by configuration tools
- Temporary exemptions On or Off (flashing),
- Vacation mode: forcing On or Off between two dates
- Presence simulation

Bar chart displaying daily profile
- Possibility of locking the key
- Programmable off-voltage
- DCF sycnhronization (TX023 ONLY)
- Possible display of date and hour on the bus

Product presentation



① menu : selection of the functioning mode
auto : functioning as per the programme established
prog : new for programming
prog : modification to modify or delete a programme existing step
② : display of the programme
: modification of hour, date and choice of the summer/winter time changing mode ☼ / ❄
: adjustment of vacation
② + et - : navigation or adjustment of values
Ⓐ : in Auto mode, selection of
Ⓑ vmanual, exemptions or unpredictable functioning
OK : validate the flashing info
③ : come back to the previous
④ ← step

You can go to Auto mode at any time with the menu key. If no action is done for 1 min, the switch returns to Auto mode.

TX 025 Twilight Switch

Function
This product is intended for automatic control of lighting, of shutters and blinds according to the measured light intensity. When set lux level is reached, the order of control is transmitted via the Bus to output modules.

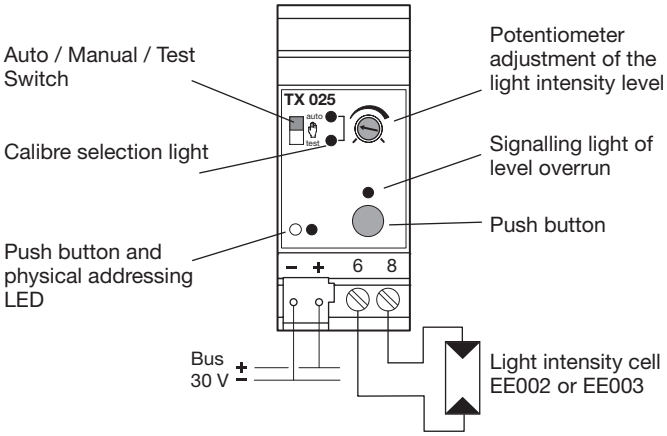
Electrical characteristics
Supply
30 V SELV Bus
- Time delay at the initialisation : 30s
- Adjustment range : 2-200 and 200-2000 lux
- ON / OFF in Manu mode

Environment
- Working temperature : 0 °C to +45 °C
- Storage : -20 °C to +70 °C

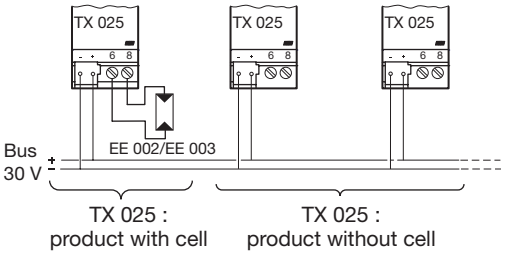
Connection
Capacity :
- Flexible : 1^2 to 6^2
- Rigid : 1.5^2 to 10^2

Probe
Use double insulated cable for wiring of the EE003 surface mounted cell or for lengthening the cable of the EE002 flush mounted cell.
Max. distance : 100m

Overall Size
- Size : 2 Modules



Several TX Channels



It is possible to adjust a level by photocell switch. The light intensity measurement is carried out by a unique probe connected to a TX025 which retransmits the value of light intensity to other TX025 on the system via the EIB Bus.

TG051 Weather Station

Function
Provides the control level of the following data : rain, wind, sunshine and temperature. The information about excess is available on relay contacts. The TG051 can be used in an autonomous or integrated manner in the tebis system by using input modules.

The weather station contains an interpretation unit and a sensor block with :
- SOUTH, WEST, EAST sun sensor
- Rain sensor with heating element being started below 10°C
- DCF 77 receiver
- Wind sensor (electronic measurement with hybrid component)
- Internal / external temperature cell
- Rain and wind parameters are delayed by 5 min., at the start
- Sun parameter adjustable with 0-99min, time delay at the start/ stop from 1klux to 99 klux
- Cell parameter of 1-50 lux (at step from 1) and 50-990 lux (at step from 10).

Technical Specifications

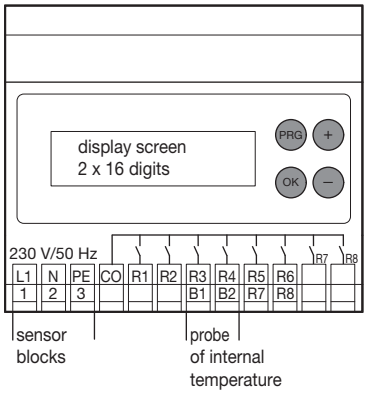
Electrical Characteristics
- System supply: 230 V/50 Hz
- Power dissipated: 2 W
- Programmer: 5 programs / day / output
- Synchronization : antenna DCF
- Contacts: 8 relay outputs

Environment
- Working temperature : 0 °C to +45 °C
  Probe : -30 °C to +50 °C (IP65)
- Storage temperature : -20 °C +70 °C

Connection
- Flexible : $1mm^2$ to $6mm^2$
- Rigid : $1.5mm^2$ to $10mm^2$, sensor 3 x 0.75

Overall Size
- Size : 6 Modules

Electrical Connection



L1 : phase 230 V / 50 Hz
N : Neutral
PE : Earth or ground
CO : Common output relays
R1 : Relays 1
R8 : Relays 8
1 :
2 : Sensor block
3 :
B1- B2 : Probe of interior temperature KTY81-210

Technical Specification

	TX510	TX511
Type	Presence detector EIB/KNX TOR	Presence detector EIB/KNX light regulator
Supply	30V bus EIB, 12mA	
Channel 1/Channel 2	ON/OFF switching	-
Channel 1	-	ON/OFF Switching
Light intensity	-	Communication with light intensity level
	-	Adjustment to light intensity level
Light	OFF: Auto ON: Movement	
Consumption	< 0.2W	
Working Temperature	0°C to +45°C	
Storage Temperature	-10°C to +60°C	
Protection Index	IP41	
Connection	By TG008 connector	
Size	110 x 44mm	

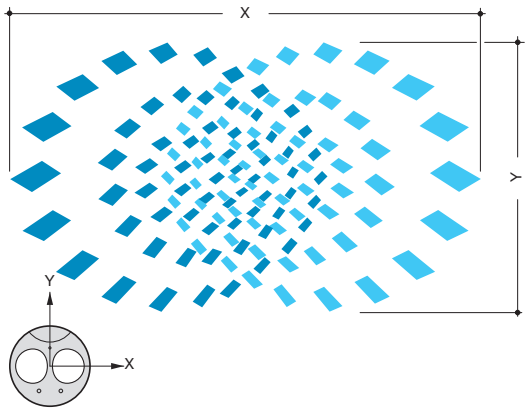
Function

- Lighting time delay adjusted by potentiometer : 1 to 30min.
- Period of presence adjusted by potentiometer : 30s to 60min.
- Brightness range : 5 to 1200 lux
- System height : 2.5m to 3.5m

Adjustment of Light Intensity Level

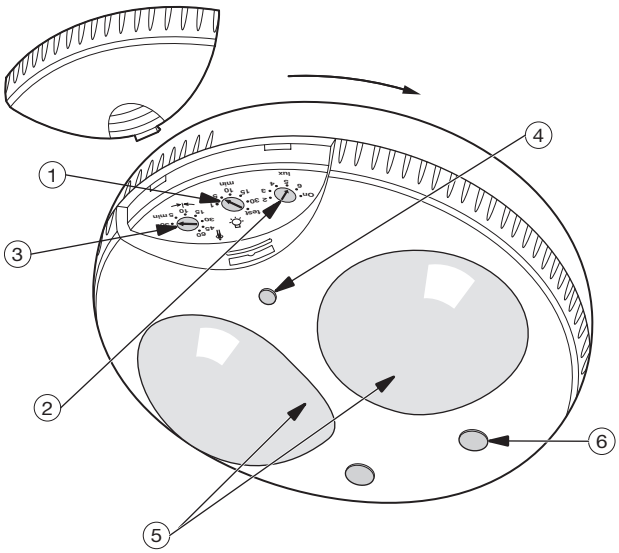
Position	Light Intensity in Lux	Equivalent in a Building
1	5	-
2	100	Circulation
3	200	Circulation. WC
4	300	Work plan
5	500	Office
6	800	Class room laboratory
ON	Measurement of light intensity inactive	-

Position (1...6) do not take into account the environment (office, furniture).

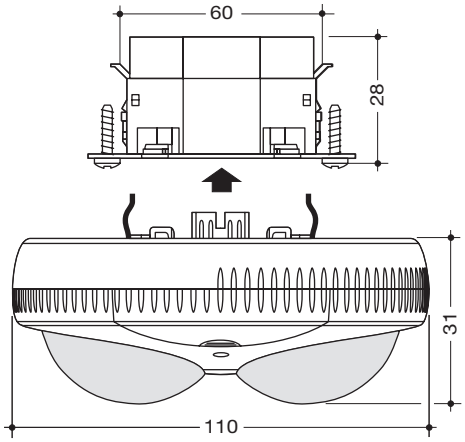


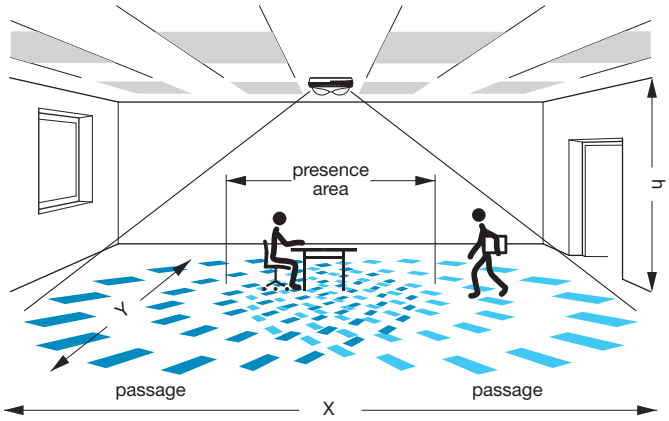
H	2.5m	3m	3.5m
X	13	15.5	18
Y	7	8	9

Presentation



① Potentiometer adjusting of the lighting time delay
② Potentiometer adjusting of the light intensity level
③ Potentiometer adjusting of the presence output (TX510 only)
④ VI signalling light
⑤ Detection lens
⑥ Sensor for light intensity measurement





The output modules TXA 204C, TXA 206A/B/C et TXA 207C have 4, 6 or 10 independent outputs (free of potential) to carry out the following controls :

- ON/OFF
- Time delays ON or OFF of 1 second to 12 hours
- Priority settings start or stop
- Sophisticated time lag switch 1 sec. to 24 hours

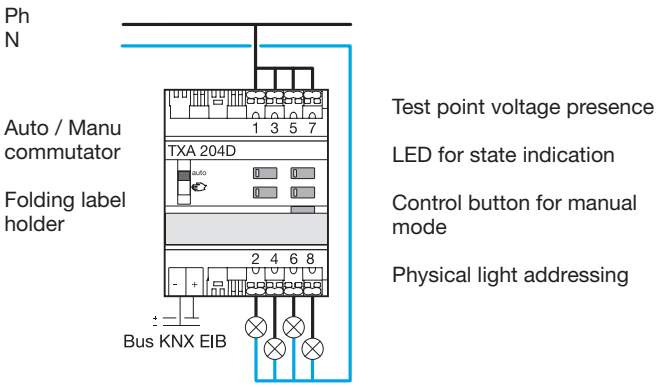
In “Auto” mode, the start and stop orders come from the input modules of tebis.

In “Manual” mode ✋, these controls are accessible by the push-buttons in front of the module (priority setting).
These products are configured with tool TX100B or by ETS Software*
*additional functions : heating application with TXA 204C and TXA 206A/B/C/D.

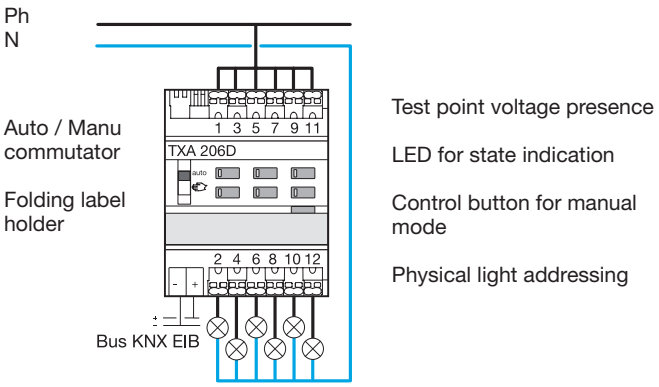
	TXA206A	TXA206B TXA206C	TXA204C	TXA206D	TXA207C
No of outputs, In	6 outputs, 4A	6 outputs, 10A	4 or 6 outputs, 16A capacitive loads	6 outputs, 16A	10 outputs, 16A
Breaking Capacity :					
• Incandescent and halogen 230 V	800W	1200W	2300W	2300W	2300W
• Halogen ELV ferromagnetic transformer	800VA	1200VA	1600VA	1600VA	1600VA
• Halogen ELV electronic transformer	800VA	1000VA	1200VA	1200VA	1200VA
• Non compensated fluorescent tubes	800W	1000W	1200W	1200W	1200W
• Parallel compensated fluorescent tubes				1500W with 200µf	
• Fluorescent tubes for electronic ballast	12 x 36W	15 x 36W	20 x 36W	20 x 36W	20 x 30W
• Compact fluorescent lamps	6 x 23W	12 x 23W	18 x 23W	18 x 23W	18 x 23W
Supply of the module	Bus 30V DC	Bus 30V DC	Bus 30V DC	Bus 30V DC	Bus 30V DC
Maximum dissipation	1W	5W	12W	12W	15W
Working temperature	0°C to +45°C	0°C to +45°C	0°C to +45°C	0°C to +45°C	0°C to +45°C
Storage temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
Degree of protection	IP30	IP30	IP30	IP30	IP30
Width of the module	4 Modules	4 Modules	4 Modules	4 Modules	6 Modules
Connection	0.75 to 2.5mm²	0.75 to 2.5mm²	0.75 to 2.5mm²	0.75 to 2.5mm²	0.75 to 2.5mm²

Electrical Connection

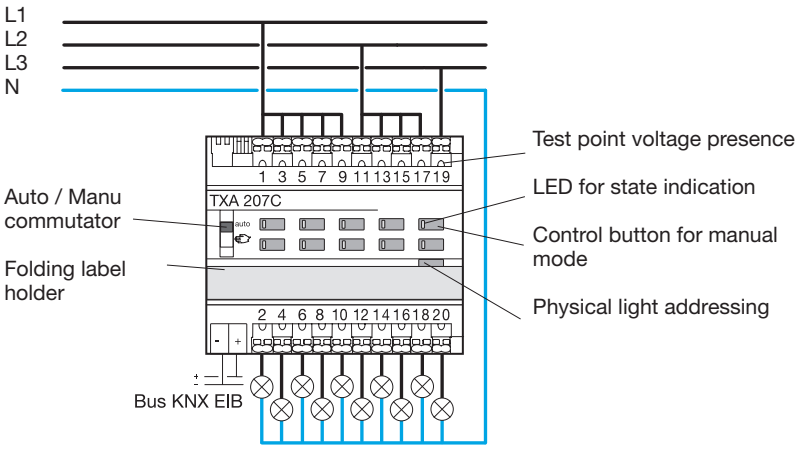
TXA204C 4 Outputs



TXA206A/B/C/D 6 Outputs



TXA204C 4 Outputs



Note: Each output has a volt-free contact whose terminals are laid in a crossing way upstream/downstream and labelled by a contact number C1, C2.

The outputs contacts of the modules can be used in a single-phase or three-phase installation.

Technical Characteristics

Dimmers
The tebis dimming offer includes:
- Dimmers with direct output 300, 600 or 1000 W
- Units with 1 or 3 outputs

Dimmers with Direct Output
Completely renewed, this extended range integrates the new design and the quick connect system.
It includes the following products:
- TXA 213 : 3 outputs 300 W
- TXA 210 : 1 output 600 W
- TXA 215 : 1 output 1000 W
- TXA210A : 1 output 300W

These products allow the direct connection of the incandescent LV or ELV halogen loads. They adapt automatically with the type of connected load and have an integrated overheating and overload protection.

Other Advantages
- Manual control even when bus is disconnected.
- Mini/maxi level local setting
- Memorizing up to 8 different scene levels of lighting.
- Call of present level by priority setting

Dimmers 1-10 V : TX 211, TX 214
The modules TX 211 and TX 214 are provided for control by output:
- Up to 30 dimmers EV 100 or EV 102,
- Up to 25 electronic ballasts at 20mA
- Possibility to memorize up to 3 different scene lighting levels.

In manual mode, the push-buttons situated on the product allow the priority setting of the outputs when there is supply voltage on the bus.

Dimming Principles
Only one push-button is needed to select a dimming circuit according to following principle :
- 1 brief press = start or stop
- 1 long press = increase or decrease

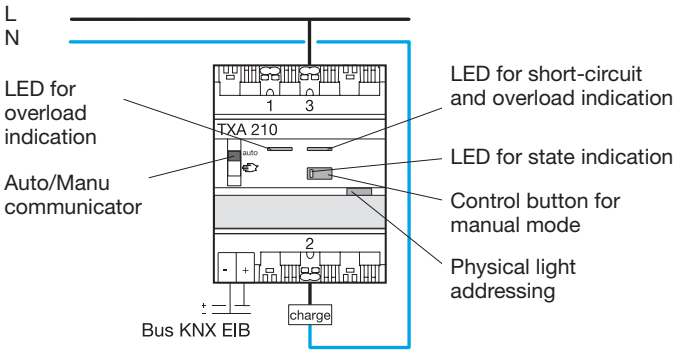
At each switching on, the dimmer restores the last stored level, except when scenes are called.
The dimming control is also possible with 2 push-buttons:
- 1 push-button for start or increase by short or long press
- 1 push-button for stop or decrease by short or long press

Technical Characteristics

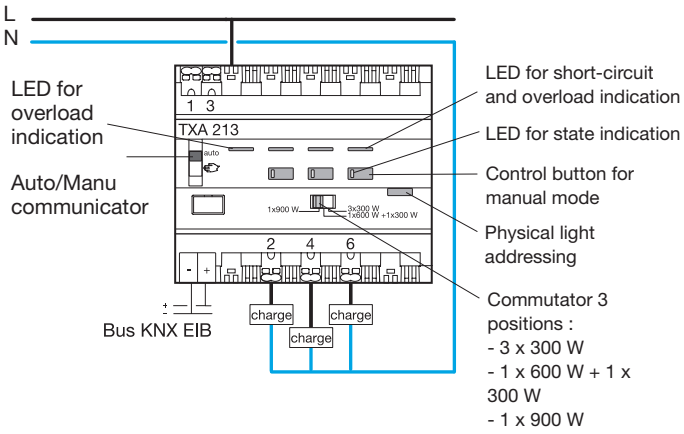
	TXA210A	TXA210	TXA213	TXA215	TXA211 / TXA214
Number of outputs	1 Output 300W	1 Output 600W	1 to 3 Output according to selector	1 Output 1000W	1 or 3 Outputs 1-10V
Dimming range in 230V or in VLV ferromagnetic or electronic transformer	25 to 600W / 600VA		20 to 300W / 300VA 20 to 600W / 600VA 20 to 900W / 900VA	20 to 1000W / VA	Output 1-10V : Current max. 50mA + contact TOR 16A AC1
Supply	30V DC + 230V - 50/60Hz				
Max dissipation of the product	4W	7.5W	9W	10W	9W
Working temperature	0 to +45°C				-20 to +70°C
Storage temperature	-20 to +60°C				
Degree of protection	IP30				
Width of module	1			6	4
Connection	0.75 to 2.5mm^2 with flexible or rigid wire quick connect terminal				Flexible: 1 to 6mm^2 Rigid: 1.5 to 10mm^2

Electrical Connection

TXA210/TXA215 : 1 Output 600W / 1000W



TXA213 : Single phase 1-3 outputs



Functions and setting available on TXA 215
- Display of the dimming level
- Dimming rise time from 0 to 100% adjustable from 1s to 60s (4s by default)
- Dimming start and stop time adjustable from 0s to 30min
- Setting of minimum dimming threshold : 1% per default
- Setting of maximum dimming threshold : 100% per default
- Setting of reached transition time for call of scenario of 0s to 9h59min

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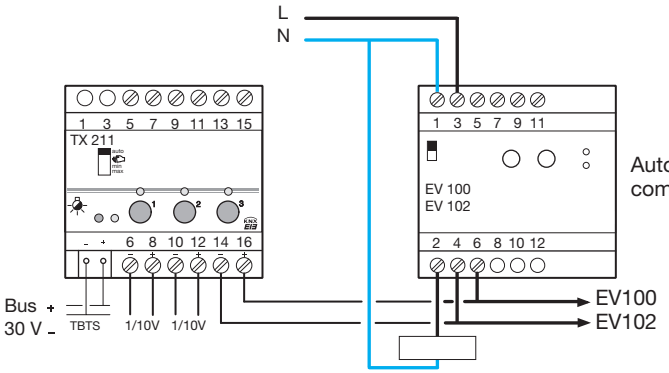
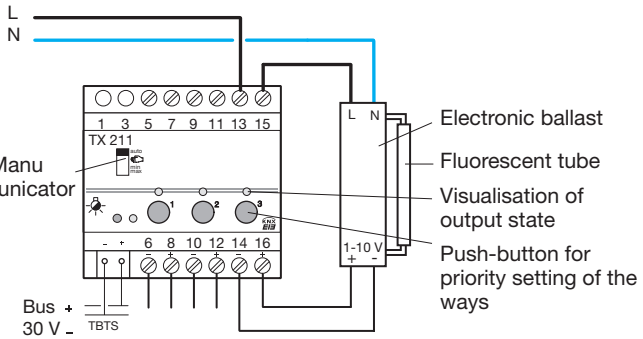
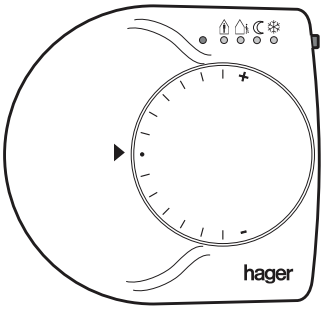
Plot dimmers TX211/TX214





Thermostat

Product Ref.	TX320
Dimensions	80 x 84 x 28mm
Detection Range	0º to +40ºC
Temperature Grade	
Comfort mode	10ºC to 28ºC (parameter adjustable)
Standby	0.5k to 4k comfort temperature
Night time mode	3k to 8k comfort temperature
Frost preventing mode	3º to -10ºC
Bus Connection	Integrated bus coupler
Ambient Temperature	
Storage	-25ºC - +60ºC
Operation	0º to +50ºC
Extra Input End	Bus input end



Select switch for operation mode / display button
Comfort mode
Standby mode
Night time mode
Frost preventing mode

Red / Blue diode
Red = Heating
Blue = Cooling

Off = Already reached preset temperature
Dial to set temperature

Heating Valve Controller

Product Ref.	TX206H
Dimensions	75 x 75 x 306mm
Main Voltage	230V 50/60Hz (Secondary, 24V)
Power Consumption	3W
Voltage of Output Terminal	24V AC
Number of Outputs	6
Valve Number of each Output	Max 4 (for each driver, max 13)
After getting connected, server driving Auto makes interlock	10 min.
Protection Type	IP20
Connection	Plug-in connecting terminal
• Flexible	1 - 1.5mm^2
• Passive	0.5 - 1.5mm^2
Ambient Temperature	
• Storage	-25 to +60ºC
• Operation	0ºC to 50ºC

Notes of Functions
- When network voltage is in function, operation LED will flash.
- When operation is failure (safety, failure), safety IED will flash. Professionals shall be invited for inspection.
- If the actuator connects the voltage onto startup, function LED will flash.

Product Ref.	TX501	TX502
Dimensions	82 x 50 x 65mm	
Main Voltage	Bus 30V DC (Secondary 24V)	
Valve End Impressing	Auto	
Regulating Force	> 120N	
Max Regulating Travel	6mm (linear motion)	
Operating Time	<20s/mm	
Travel Display	5 LED	Simultaneous press of button
Display of Rating	5 LED	
Accessory Valve Adaptor	Danfross, RA, Heimeier, MNG, Schlösser, Honeywell, Baukmann, Dumer, Reich, Landis+Gyr, Overtop, Herb, Onda	
Input End	Two input ends in binary system	
Protection Grade	III	
Protection Type	IP21	IP20
Connection	6 pole line (1m): Blk/Red: EIB bus Yellow/Green: Window contact White/ Brown: display alarm	
Ambient Temperature		
• Storage	-25ºC to +60ºC	
• Operation	0 to +50ºC	

Output module 4 shutters, blinds or curtains TXA 223, TXA 224, TXA 225 and TXA 226.

The whole range of the products blinds and shutters is divided into two applicatons:
- TXA223 and TXA225 modules manage the controls up, down and stop. They are used to control roller shutters, awning blinds, etc.
- TXA224 and TXA226 modules manage the controls up, down, stop, as well as the inclination of slats.

The TXA 225 and TXA 226 products are used for direct current motor control. The controls UP and DOWN are obtained by polarity reversal.

In “Auto” mode, the movement orders come from the input modules of the tebis system.

In “Menu” mode, these controls are accessible by the push-buttons in front of the module (priority setting).

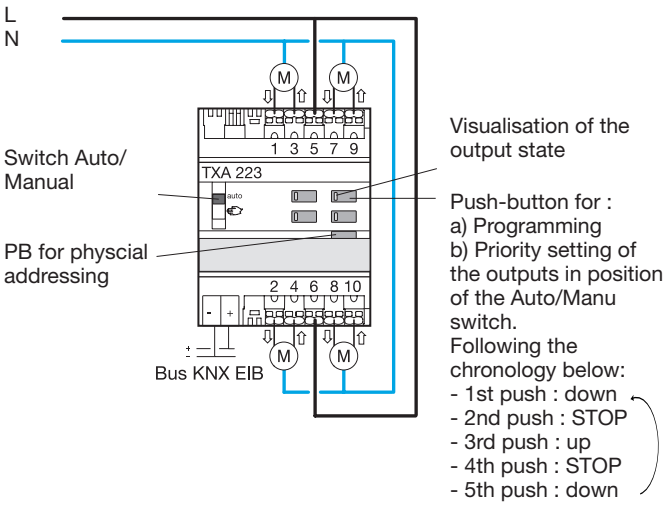
Technical Characteristics

References	TXA223, TXA224	TXA225, TXA226
Number of outputs	4	4
Breaking capacity	6A AC1 250VM	6A DC1 24V ⎓
Supply of module	Bus 30V DC	
Time setting between 2 controls of opposite direction	600ms	
Max. dissipation of prodict	2W	
Working temperature	0 to +45°C	
Storage temperature	-20 to +70°C	
Degree of protection	IP30	
Width in modules	4	
Connection flexible or rigid	0.75 to 2.5mm² quick connect terminals	

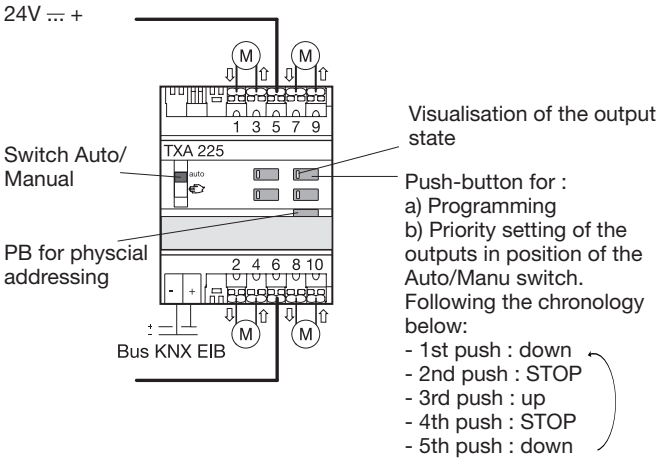
Note: Connecting of motors
- Alternative current motors (never connect any motors in parallel).
- Continuous current motors (two motors powered in DC can be connected in parallel on condition to meet the nominal current of the TX225 or TX226 modules).

Electrical Connection

TXA223 / TXA224



TXA225 / TXA226

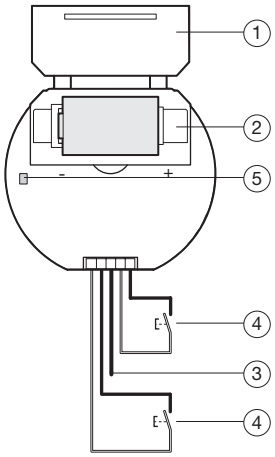


Technical Characteristics

	TR302A / TR304A	TR302B / TR304B
Supply	CR 1/2AA (3.0V) Battery	230V M 50Hz ± 15%
Input	2/4 inputs potential free contracts	2/4 inputs potential free contacts
Contact current	30µA	30µA
Input current	19mA	19mA
Life of battery	5 years	-
Emisson frequency	868.3 Mhz	868.3 Mhz
Emission range		
• Inside a building	max. 30m	max. 30m
• Open area	max. 100m	max. 100m
Working temperature	0°C to +45°C	0°C to +45°C
Storage temperature	-20°C to +70°C	-20°C to +70°C
Protection index	IP30	IP20
Size	45 x 51 x 16mm	48 x 53 x 27mm
Connection	Slide-in connector with 200mm length	Slide-in connector with 200mm length

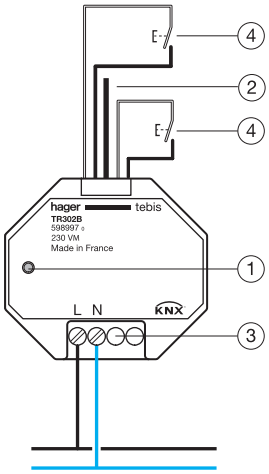
Product presentation

2 Input modules : TR302A (Battery Cell)



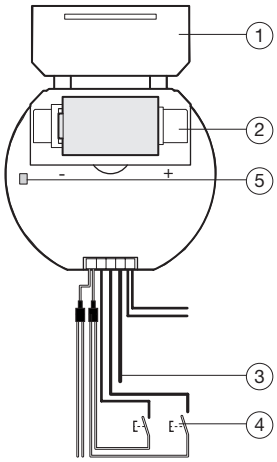
① Battery cover
② Battery
③ Radio antenna
④ Traditional button
⑤ Command received light

2 Input modules : TR302B (230VM)



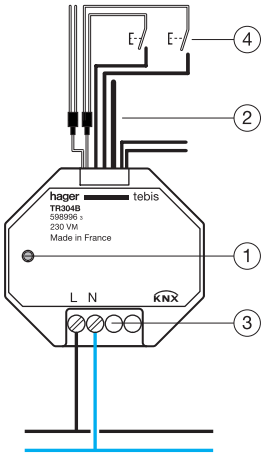
① Command received light
② Radio antenna
③ Supply limits
L : Line 230 V
N : Neutral
④ Traditional button

4 Input modules : TR304A (battery cell)



① Battery cover
② Battery
③ Radio antenna
④ Traditional button
⑤ Command received light

4 Input modules : TR304B (230VM)



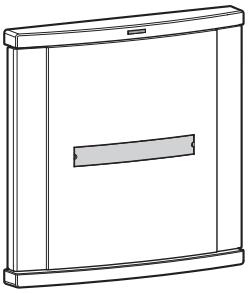
① Command received light
② Radio antenna
③ Supply limits
L : Line 230 V
N : Neutral
④ Traditional button

TD Push Button (KNX Radio)

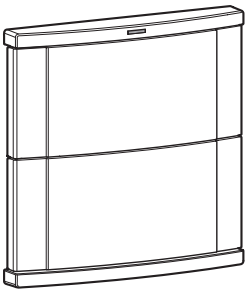
These are unidirectional or standard EIB / KNX emitters. The radio extra flat push buttons are offered in 2 colours (white and silver) and in 2, 4 or 6 ways version (keys with left / right horizontal direction). All products are with the label folder, and with a radio emission LED. The allocation of the ways is carried out with the TX100B configurator.

Technical Characteristics

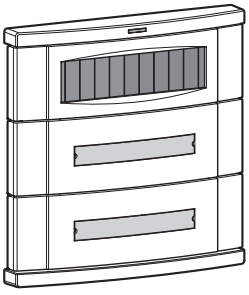
	KNX Radio Push Button
Supply	CR2430 (3V) battery cell
Life of the battery	3 years
Emission range	
• Inside a building	Max. 30m
• Open area	Max. 100m
Emission frequency	868.3MHz
Working temperature	0°C to +45°C
Storage temperature	-20°C to +70°C
Protection index	IP30
Size	80.5 x 80.5 x 12mm



TD1**



TD2**



TD25***

TD3***

How to Choose RF Push-Buttons

Number of Commands	1 Key	2 Ways	2 Keys	4 Ways	3 Keys	6 Ways	2 Keys 4 Ways	+ Solar
Colour	White	Silver	White	Silver	White	Silver	White	Silver
With label holder	TD110	TD111	TD210	TD211	TD310	TD311	TD250	TD251
Without label holder	TD100	TD101	TD200	TD201	TD300	TD301	-	-
Supply	2 Cr 2430 (3V) battery - 3 years							

Radio Remote Controls

These are unidirectional emitters in standard EIB/KNX.
The allocation of the keys is carried out with TX100B configuration.

Technical Characteristics

	TU402/404/406/418
Supply	CR2430
Life of the battery	3 years
Emission range	
• Inside a building	Max. 30m
• Open area	Max. 100m
Emission frequency	868.3 Mhz
Working temperature	0°C to +45°C
Storage temperature	-20°C to +70°C
Protection index	IP30
Size	111 x 51 x 18mm

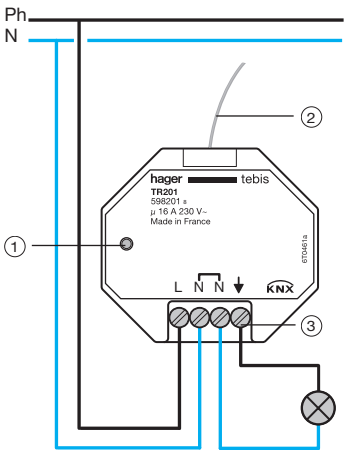
Remote control:
- TU402 2 keys, 2 commands
- TU404 4 keys, 4 commands
- TU406 6 keys, 6 commands
- TU418 7 keys, 18 commands, 6 commands x 3 channels

Technical Characteristics

	TR201	TR501	TR270F	TR271F
Supply	230V 50Hz ± 15%			
Inputs		1 potential free contact		
Ouputs	16A 230V AC1			
• Incandescence	2300W	1500W	2300W	300W 35°C
• 230V halogen	2300W	1500W	2300W	
• Ferromagnetic ELV halogen	1600VA	800VA	1600VA	200VA 35°C
• Electronic ELV halogen	1200VA	800VA	1200VA	
• Parallel compensated fluor; tubes	20 x 36W	11 x 36W	20 x 36W	
	Max. 120µf	Max. 47µf	Max. 120µf	
Connection Through Cage Termainal:				
• Flexible	0.5 to 2.5mm²			
• Rigid	0.5 to 2.5mm²			
Emmision frequency	868.3 MHz			
Emission range				
• Inside a building	Max. 30m			
• Open area	Max. 100m			
Working temperature	0°C to +45°C			
Storage temperature	-20°C to +70°C			
Degree of Protection	IP30			
Size	48 x 53 x 30mm		54 x 98 x 80mm	

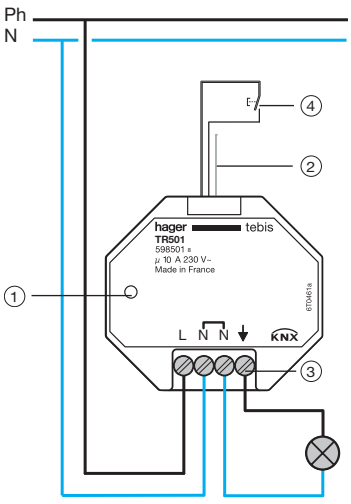
Output Module

TR201 : 1-output 16A



① - Display of output state
② - Radio antenna
③ - Supply limits :
L = Line 230 V
N = Neutral
↓ = Output

TR501 : 1-input / 1-output



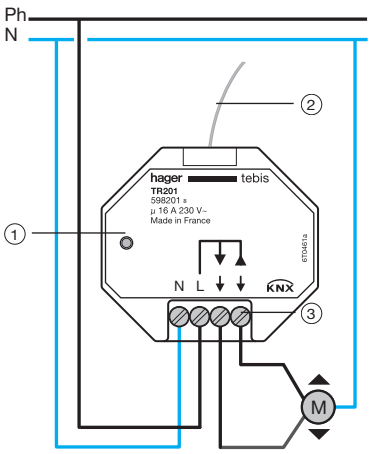
① - Display of output state
② - Radio antenna
③ - Supply limits :
L = Line 230 V
N = Neutral
↓ = Output
④ - Input contacts

Technical Characteristics

	TR221	TR521
Supply	230V 50Hz ± 15%	230V 50Hz ± 15%
Input		2 inputs, potential free
Output	1 shutter ouput, 6A 230V AC1	1 shutter output, 6A 230V AC1
Maxi. power loss	2W	2W
Min. time between revertive pulsing	600ms	600ms
Radio frequency	868.3 MHz	868.3 MHz
Emission range		
• Inside a building	Max. 30m	
• Open area	Max. 100m	
Working temperature	0°C to +45°C	0°C to +45°C
Storage temperature	-20°C to +70°C	-20°C to +70°C
Degree of Protection	IP30	IP30
Size	48 x 53 x 30mm	48 x 53 x 30mm
Connection Through Cage Terminal		
• Flexible	0.5 to 2.5mm²	0.5 to 2.5mm²
• Rigid	0.5 to 2.5mm²	0.5 to 2.5mm²

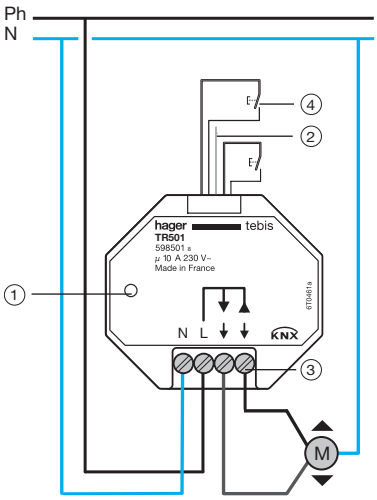
Rolling shutters / blinds

TR221 : 1 output



① - Display of output state
② - Radio antenna
③ - Supply limits :
L = Line 230 V
N = Neutral
▼= Down
▲= Up

TR521 : 2 inputs / 1 output



① - Display of output state
② - Radio antenna
③ - Supply limits :
L = Line 230 V
N = Neutral
▼= Down
▲= Up
④ - Input contacts