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 TYF130 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 TR131A
In the configuration phase of the installation, the TR131A is the interface between the TX products, connected among themselves by the bus cable and TX100GB radio configuration tool.

After putting into service, the TR131A can be withdrawn and reused to configure other systems.

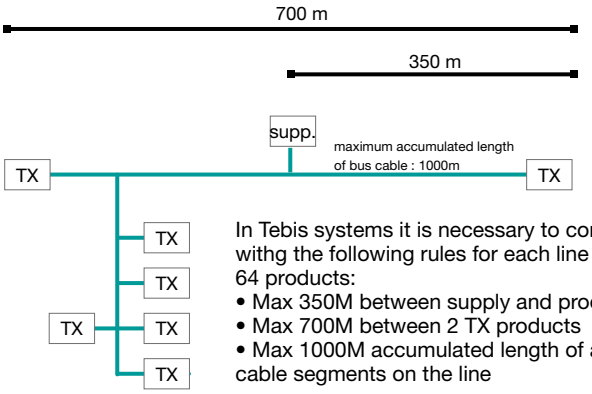
Nevertheless in case of modification of the system or for maintenance needs it will be necessary to reinstall again the media coupler, that is why, **we recommend leaving TR131A in the system.**

Several system architectures can be found :

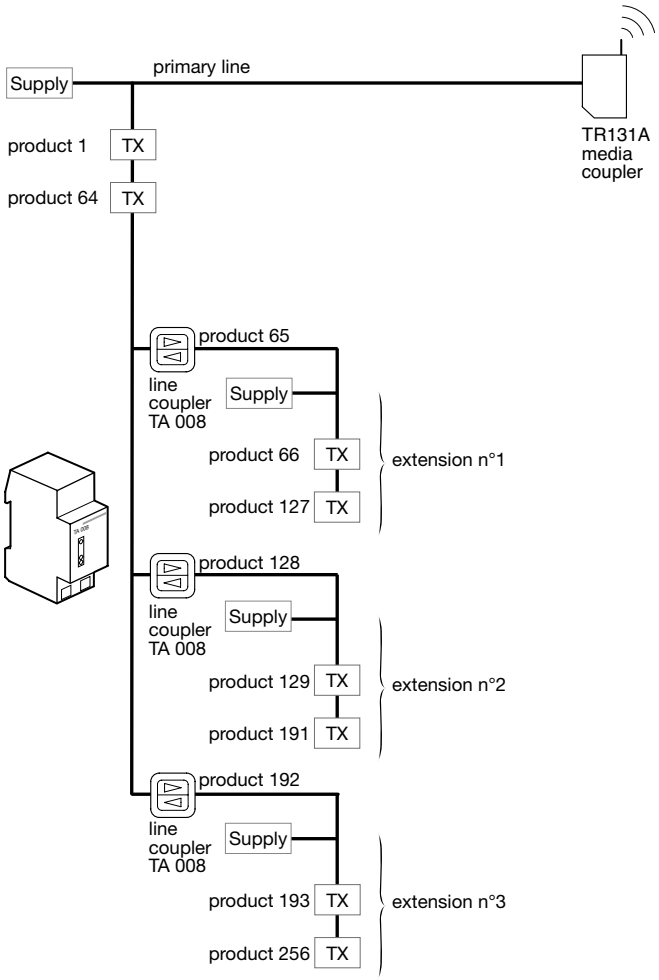
1. fully wire systems
2. fully radio systems
3. combined wire and radio systems

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

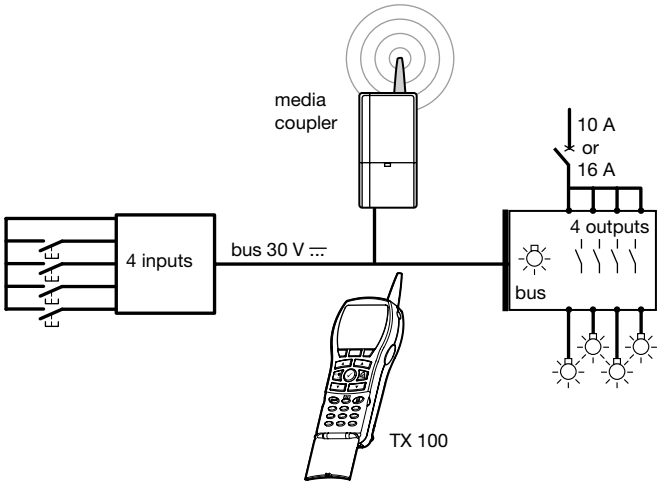
Configuration and commissioning
For configuration, the TX100GB radio configuration tool and TR131A media coupler are used. The configuration information of the system is safeguarded in a standard USB flash drive, placed in TX100GB.

The configuration can be done very easily with the TX100GB portable radio tool : room by room, product by product or function by function.

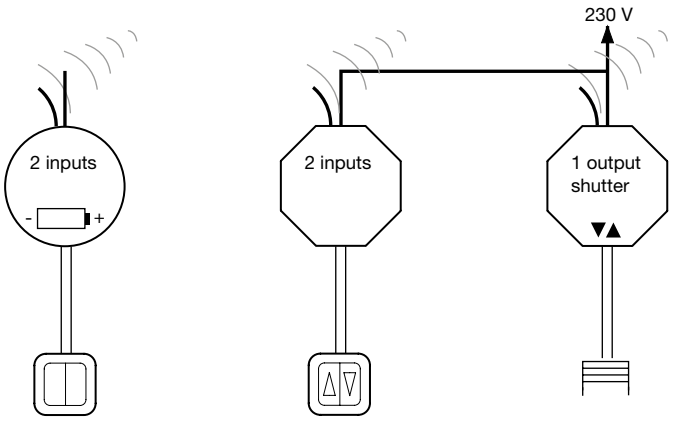
System products are used in the following manner for the system type implemented:

Wire system principles
The bus products are supplied by safety very low voltage bus.
The configuration needs TX100GB configurator and TR131A media coupler.

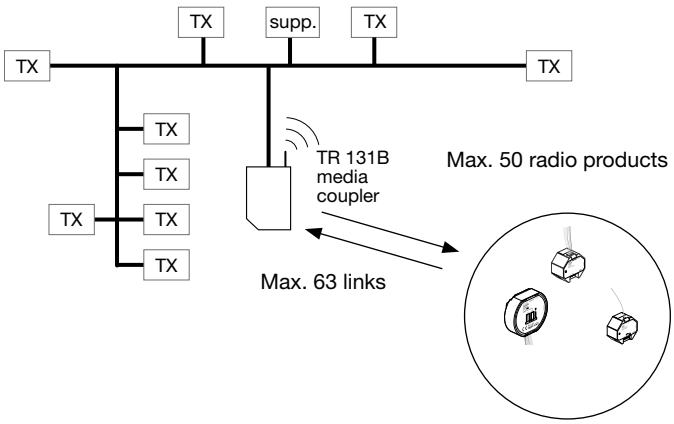
After configuration the media coupler can be removed and used for another project but needs to be reinstalled if later modifications are required.



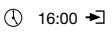
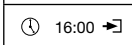
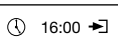
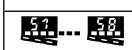
Radio system principles
The radio products are powered by the mains or a battery .
The configuration is carried out directly with TX100GB and the radio products (without media coupler).



Combined system (bus+radio) principles
The configuration is carried out with TX100GB and TR131A 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 TXA023, TXA025
		Switching off only	Automatic contact or push button, or TXA023, TXA025
		Switch type ON/OFF	Automatic contact or push button, or TXA023, TXA025
		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, TXA023
		Priority setting STOP	Automatic switch or contact, or TX510, TXA023, TXA025
		Priority setting START	Automatic switch or contact, or TX510, TXA023, TXA025
		Timed start - delay before ON	Automatic switch or contact, or TX510, TXA023, TXA025
		Timed stop - delay before OFF	Automatic switch or contact, or TX510, TXA023, TXA025
		Lighting level 25%, 50%, 75% or 100%	TX510, TXA023, TXA025
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, TXA023, TXA025
		Swtich type UP function	Automatic switch or contact, or TX510, TXA023, TXA025
		Switch type DOWN function	Automatic switch or contact, or TX510, TXA023, TXA025
		Override UP	Automatic switch or contact, or TX510, TXA023, TXA025
		Override DOWN	Automatic switch or contact, or TX510, TXA023, TXA025
		Wind safety	TG050 air safety detector
Heating		Comfort	Temp. regulator, TX510 automatic push button or contact
		Eco	Temp. regulator, TX510 automatic push button or contact
		Comfort / Eco	Temp. regulator, TX510, TXA023 automatic contact
		Frost free or without frost	Temp. regulator or automatic contact TX510, TXA023
		Stop override	Automatic switch or contact or TXA023
		Comfort override	Automatic switch or contact or TXA023, TX510
		Eco override	Automatic switch or contact or TXA023, TX510
		Timed comfort	Push button or detector TX510-TX511
		Timed eco	Push button
TXA023 Clocks		Master clock	Diffusion TXA023 of the hour on the bus for synchronizing the slave clocks
		Slave clock	TXA023 synchronization on the hour emitted by the master clock
TXA025 Photo electric switch		Master photocell switch	TXA025 light sensitive switch (master) spreads on the bus the light intensity measured by the cell
		Slave photocell switch	TXA025 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