

Merten radio system

- "Secure" transmission using frequency range 868 MHz
- No cable routing required, due to the use of battery-powered transmitters
- Highly flexible installation
- Extension of existing installations
- Implementation of groups, scene control options and central functions
- Easy learning of functions
- Free programming of functions – no fixed assignment
- Simple change of functions
- Integration in Merten's switch ranges System M (M-SMART, M-ARC, M-STAR, M-PLAN) with receiver and System Design (ARTEC, TRANCENT, ANTIK) with transmitter and receiver
- Extremely flat battery-powered push-button e.g. for attaching to glass
- New operating points using battery-powered radio transmitters can be installed, also in places without cables
- Wide range of easily installed products, covering application areas such as lighting controls, blind controls, scenes and movement detection
- Combination with ARGUS movement detectors
- Changing scene functions: Can be conveniently adjusted using the transmitter

- Indoor transmission range: approx. 30 m; free field: approx. 100 m (depending on installation site and building characteristics such as materials and wind forces)

Radio transmission:

Radio transmission does not use exclusive transmission paths, disruptions can therefore not be ruled out. Radio transmission is not suitable for security applications, e.g. emergency OFF, emergency calls. The transmission range depends on the installation site (mounting height) and the building characteristics. Materials used as well as wall thickness have an influence on the quality of radio transmission. For this reason, carry out a transmission prior to installation, in case of doubt.








TIP:

You will find more detailed information on radio technology as well as practical tips - like e.g. notes on planning, installation, locations and requirements - in Merten's radio guideline.

The radio guideline is available at www.merten.com (Download/Brochures). Language: English.

Radio transmitter

Function	Channels	Radio transmitter
<ul style="list-style-type: none"> - Radio remote control for controlling sensor covers with radio receiver, blind push-buttons with radio receiver, plug adapters with radio receiver, ARGUS 220 Connect or Timer (with integrated radio module). - Range: up to 30 m indoors, up to 100 m outdoors 	15	 <p>Radio remote control Distance 5010 590722 Battery: 2 microcells (IEC LR 03, AAA)</p>
<ul style="list-style-type: none"> - Battery-powered radio remote control for controlling sensor covers with radio receiver, blind push-buttons with radio receiver, plug adapters with radio receiver, ARGUS 220 Connect or Timer (with installed radio module). - Range: up to 30 m indoors, up to 100 m outdoors 	2	 <p>Radio push-button 1-gang, battery-powered, System Design 5921.. System M 5941 .. Battery: 1 lithium button cell (CR 2450)</p>
<ul style="list-style-type: none"> - Battery-powered radio remote control for controlling sensor covers with radio receiver, blind push-buttons with radio receiver, plug adapters with radio receiver, ARGUS 220 Connect or Timer (with installed radio module). - Range: up to 30 m indoors, up to 100 m outdoors 	4	 <p>Radio push-button 2-gang, battery-powered, System Design 5922.. System M 5942 .. Battery: 1 lithium button cell (CR 2450)</p>
<ul style="list-style-type: none"> - Battery-powered radio transmitter with 4 pre-programmed channels. For operating ARGUS 220 Connect or Timer (with installed radio module). - Controls the "permanent ON", "permanent OFF", AUTOMATIC and SET functions. (Only for ARGUS 220 Timer) - Range: up to 30 m indoors, up to 100 m outdoors 	4	 <p>Radio push-button 2-gang for ARGUS, battery-powered, System Design 592290 Battery: 1 lithium button cell (CR 2450) Type of protection: IP 20</p>
<ul style="list-style-type: none"> - Battery-powered radio transmitter for connecting four floating make contacts such as push-buttons or the relay module for the ARGUS smoke detector. For controlling sensor covers with radio receiver, blind push-buttons with radio receiver, plug adapters with radio receiver, ARGUS 220 Connect or Timer (with installed radio module). - Range: up to 30 m indoors, up to 100 m outdoors 	4	 <p>Universal radio transmitter, 4-gang, battery-powered 592599 Battery: 1 lithium button cell (CR 2032)</p>

Installation of battery-powered radio push-button (System Design/System M)

- Can be glued on walls or glass
- Screw mounting on walls or glass
- Screw mounting on flush-mounted boxes
- Locks into multiple combination frame

Installation of universal radio transmitter, 4-gang

- Underneath push-button inserts or in empty flush-mounted boxes

Radio receiver

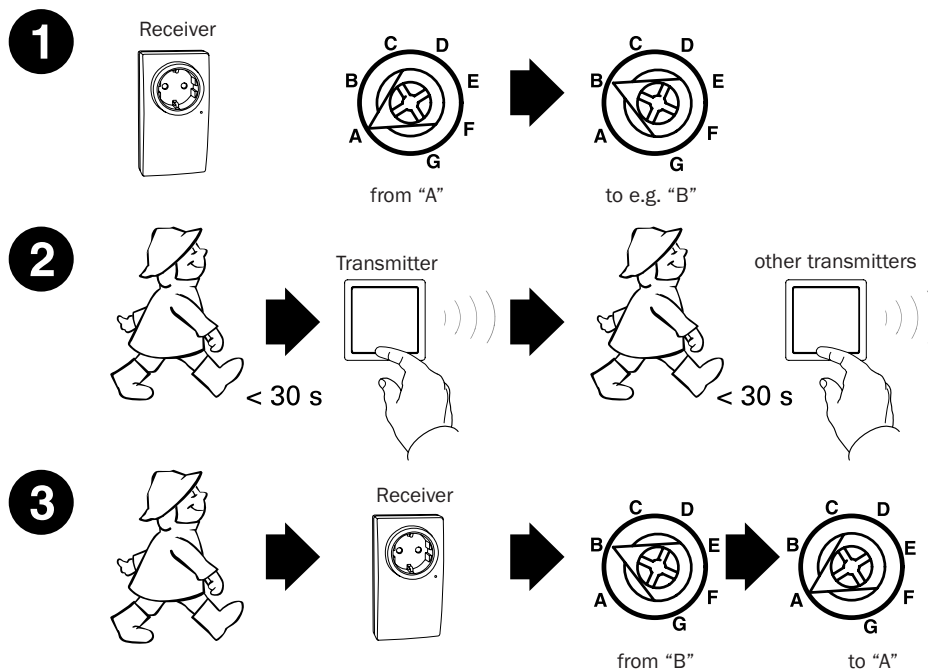
The radio receiver controls the connected load. You will find an overview of available receivers and controlled loads on the next page. The transmitter (push-button) is not assigned to any receiver after installation. The required functions and groups must be "taught" into the receiver. At the back/under the push-button application, there is a rotary coding switch with a 4-bit coding switch for the blind push-button with radio receiver. Use this switch to activate "learning mode" for the desired function.

Example of how functions are taught

By setting the rotary coding switch to position B-G, the required "learning mode" is activated for approx. 30 seconds. If no radio signal is received within this period, the receiver automatically switches back to normal operation (A).

When "learning mode" is activated (within 30 seconds), the set function (B-G) is assigned to the receiver by actuating a transmission channel (using a transmitter's button/rocker). The 30 second period for teaching new transmitters is restarted.

When all transmitters have been assigned to the required functions, the switch must be turned back into position (A, normal operation).

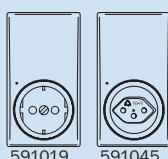

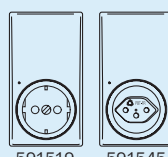




Rotary coding switch functions

- Normal operation
- Learning mode = toggling (dimming)
 - Every time the transmitter is used, the radio receiver switches to the other state. (ON or OFF)
 - If it is operated for a longer period, the universal dimmer slowly dims the light up and down.
- Learning mode = switching on (dimming up)
 - If the transmitter is actuated, the radio receiver switches ON.
 - The universal dimmer switches ON / dims up.
- Learning mode = switching off (dimming down)
 - If the transmitter is actuated, the radio receiver switches OFF.
 - The universal dimmer switches OFF / dims down.
- Learning mode = lightscene
 - When the transmitter is actuated, the brightness value is saved in the radio receiver and called up each time the transmitter is used. Only possible with the universal dimmer. (subsequent modification of the lightscene is possible)
- Deletion mode = complete deletion of a transmitter
 - If the transmitter is actuated, it is deleted completely in the receiver.
- Deletion mode = complete deletion of all transmitters
 - If a taught transmitter is actuated, all taught transmitters are deleted.
 - When the radio receiver has finished "learning", switch the rotary coding switch back to normal operation.

4-bit coding switch functions

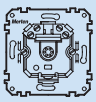
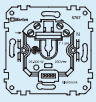
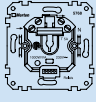
- Normal operation
- Learning mode = blind Down
 - When the button is pressed, the blind/roller shutter drive moves downwards.
 - Short operating times of max. 1 second result in the blind motors adjusting the slats.
- Learning mode = blind Up
 - When the button is pressed, the blind/roller shutter drive moves upwards.
 - Short operating times of max. 1 second result in the blind motors adjusting the slats.
- Learning mode = blind Up/Down
 - When the button is pressed and held, the blind/roller shutter drive moves up or down. Each time the button is pressed, the direction is changed.
 - If the button is pressed briefly, the blind/roller shutter drive stops.
- Deletion mode = deletes a transmitter
 - If the transmitter is actuated, it is deleted completely in the receiver.
- Deletion mode = deletes all transmitters
 - If a taught transmitter is actuated, all taught transmitters are deleted.
- Learning mode = single button operation
 - The blind/roller shutter drive is moved up and down by pressing a button.
 - When the radio receiver has finished learning, switch the 4-bit coding switch back to normal operation.

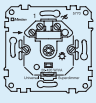
Radio receiver complete devices	
Function	Complete device
<ul style="list-style-type: none"> - For switching external loads with SCHUKO plug. - Can be remote controlled via radio transmitter - Manual operation at the device via the sensor cover 	 <p>Plug adapter with radio receiver, switch AC 230 V, 50 Hz 16 A, $\cos \varphi = 1$, max 35 μF</p> 
<ul style="list-style-type: none"> - For switching and dimming external loads with SCHUKO plug. - For ohmic, inductive and capacitive loads, e.g. incandescent lamps, dimmable, wound transformers or electronic transformers. - Phase control or phase alignment - Memory function that can be switched off - Can be remote controlled via radio transmitter - Manual operation at the device via the sensor cover - Automatic load detection. 	 <p>Plug adapter with radio receiver, universal dimmer AC 230 V, 50 Hz 40-350 VA</p> 
<ul style="list-style-type: none"> - For switching a load via make contact. - Can be remote controlled via radio transmitter - Radio functions: toggle, On, Off, push-button operation. 	 <p>Radio receiver, flush-mounted, 1-gang 592591 AC 230 V, 50 Hz 10 A, $\cos \varphi = 1$, max 35 μF</p>

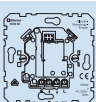
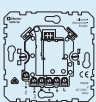
Caution:
Only suitable for dimmable lights. Do not plug in any other loads like TV, vacuum cleaner etc. Observe maximum load!

Caution:
Do not connect any mixed loads!

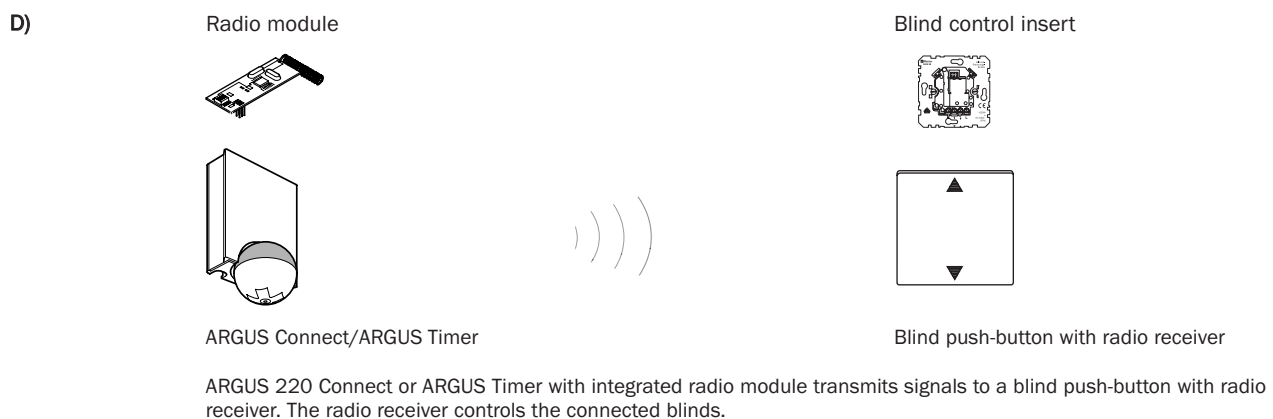
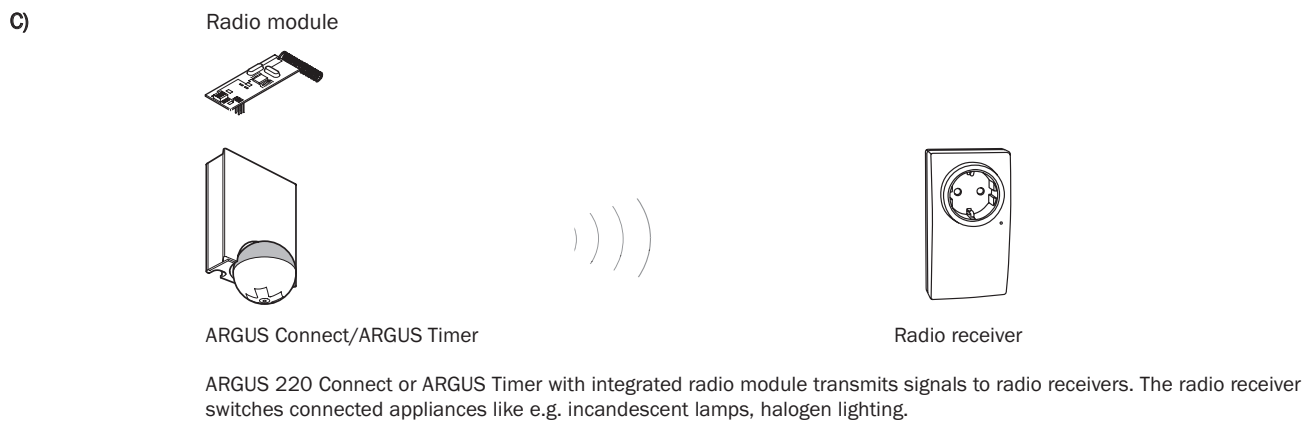
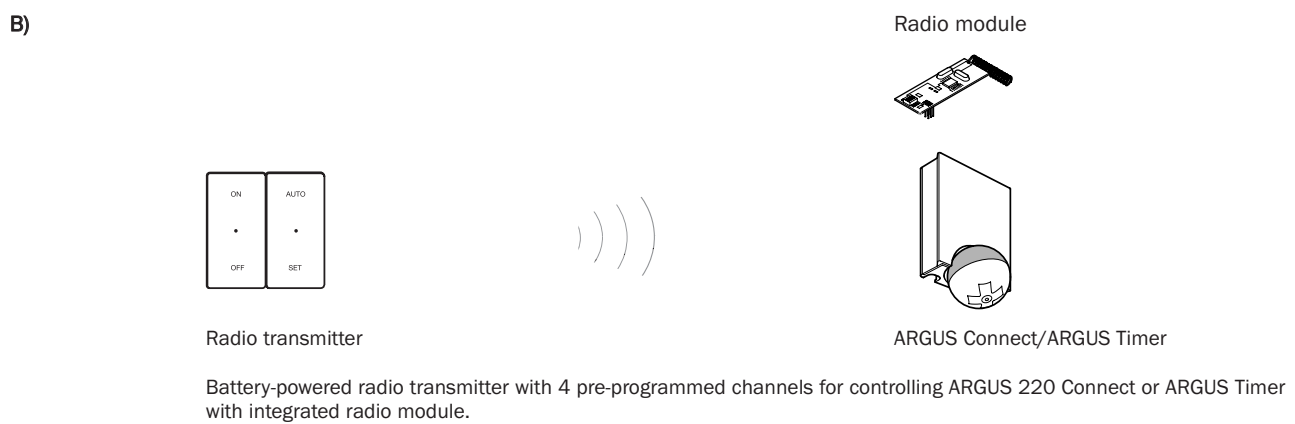
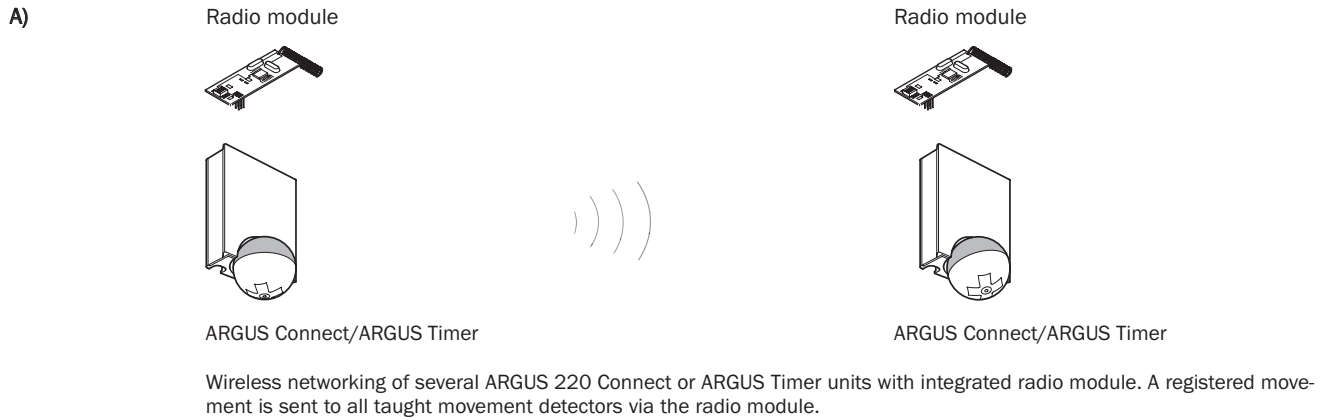
Radio receiver for flush-mounted assembly				
Function	Inserts	Design cover		
		Sensor cover with radio receiver	Sensor cover with radio receiver switch inserts	Blind push-button with radio receiver and sensor connection
		System M System Design 5931.. 5930..	5932.. 5933..	5936.. 5935..

Switching				
Switching of ohmic loads <ul style="list-style-type: none"> - e.g. incandescent lamps, 230 V halogen lamps - Neutral conductor not required. - Extension input for push-buttons and extension TELE inserts - Radio functions: Only toggling functionality 		Electronic switch insert 575799 (25-400 W) AC 220-230 V, 50-60 Hz	■	
Switching of ohmic loads <ul style="list-style-type: none"> - e.g. incandescent lamps, 230 V halogen lamps - Neutral conductor not required. - Radio functions: toggle, On, Off 		Electronic switch insert 576799 (25-300 W)		■
Switching of ohmic, inductive or capacitive loads <ul style="list-style-type: none"> - e.g. incandescent lamps, fluorescent lamps, energy-saving lamps, LV halogen lighting - Neutral conductor required - Radio functions: toggle, On, Off 		Relay switch insert 576897 0-1000 VA, max. 140 μF		■

Dimming				
Dimming of ohmic, inductive and capacitive loads <ul style="list-style-type: none"> - e.g. incandescent lamps, 230 V halogen lamps, dimmable, wound transformers, electronic transformers - Phase control or phase alignment - Memory function that can be switched off - Extension input for push-buttons and extension TELE inserts - Neutral conductor not required. - Radio functions: toggle, On, Off, dimming, scene 		Universal super dimmer insert 577099 at 50 Hz: 25 - 420 VA at 60 Hz: 25 - 340 W	■	

Blinds				
Blind/roller shutter drive control <ul style="list-style-type: none"> - Local operation of a blind/roller shutter motor with limit switch. - Motor protection by interlocked relay contacts. - Neutral conductor required 		Standard blind control insert 580698 (max. 1 motor 1000 VA)		■
Blind/roller shutter drive control <ul style="list-style-type: none"> - Local operation of a blind/roller shutter motor with limit switch. - Extension input for roller shutter switch/push-button or additional blind control insert for group/central control. - Wind alarm function can be implemented - Motor protection by interlocked relay contacts. - Neutral conductor required 		Blind control insert with extension input 580699 (max. 1 motor 1000 VA)		■

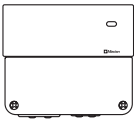
ARGUS radio



System extensions

Radio repeater

Art. no. 595959



The Merten radio repeater receives radio signals, amplifies them several times and retransmits them. This means it can improve the quality of the transmission path between several Merten radio components (e.g. radio push-buttons and control of blinds). This can be wise if, for example, the structure of the building obstructs the transmission path between transmitter and receiver, or if the distance between the two is too large.

Two operating modes allow you to choose whether the radio repeater is to repeat all radio signals that it receives, or only those that come from transmitters that have been connected to it.

In addition to radio signals from Merten radio transmitters, the radio repeater can also receive radio signals from Merten smoke detectors (with installed radio module, art. no. 663491). You can set the radio repeater so that, on reception of a smoke detector signal, it transmits the transmission signal of a previously connected transmitter (smoke detector function). For example, this could be set so that the light is switched on or the blinds opened whenever smoke is detected.

! The radio repeater cannot amplify smoke detector signals, which means that it cannot activate other smoke detectors.

The radio repeater is connected to the mains electricity. It is for indoor installation only. The best installation site can be found using the Merten radio test set.

Merten's special radio technology means that it is not possible for radio signals which have been amplified and retransmitted to be received and amplified further by a second radio repeater. For this reason, you cannot set several radio repeaters to function one after the other in order to extend the transmission path. You should always use only one radio repeater per radio network.

Moreover, Merten's radio technology rules out errors on the receiver side in the event that the radio signal and the amplified radio signal arrive at the receiver at almost exactly the same moment.

The radio repeater can be used in two operating modes:

- Operating mode "Transparent Mode"
- Operating mode "Selective Mode"

Transparent mode (default setting):

In this operating mode, the radio repeater retransmits all signals from Merten radio transmitters. It thus functions as an amplifier or relay station for all Merten radio transmitters.

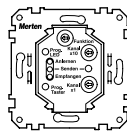
Selective mode:

In this operating mode, the radio repeater retransmits signals from connected transmitters only. This mode is recommended when there are many radio components within a radio network and the incidence of radio signals is correspondingly high.

You can connect up to 32 radio transmitters. If necessary, you can delete individual transmitters or all connected transmitters from the memory of the radio repeater.

All connection and deletion functions are confirmed by a corresponding LED in the LED display.

INSTABUS radio gateway, flush-mounted Art. no. 680999



With the radio gateway, you can transmit signals between an EIB system and the Merten radio system. Transmission is possible in both directions,

so:

- from EIB sensors to radio receivers and
- from radio transmitters to EIB actuators.

Using the radio gateway, any number of Merten radio system components can be connected to the EIB. Among these are the movement detectors ARGUS 220 Connect and ARGUS 220 Timer with installed radio module, art. no. 663491.

You can assign the radio transmitters/EIB sensors to the radio receivers/EIB actuators in the ETS. The application and the corresponding description are available on the Internet at www.merten.com.

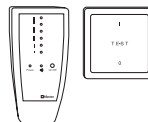
The radio gateway requires no additional supply voltage. There is a bus connecting terminal supplied with the radio gateway, for connection to the bus line.

You can mount the radio gateway in any size 60 installation box (flush-mounted box, cavity wall box, cable trunking box...).

! Metal surfaces in the immediate surroundings of the radio gateway can influence reception and transmission properties. Therefore, if possible, do not install the radio gateway in a metal flush-mounted box.

Radio test set

Art. no. 595990



The Merten radio test set consists of a radio test transmitter and a radio test receiver. It is used to check whether switching telegrams will be transmitted as intended before transmitters and receivers from the Merten radio system are installed. The test transmitter is fixed at the intended installation site of the actual radio transmitter (e.g. ARGUS movement detector or battery-powered radio push-button). After being switched on, it transmits a radio signal every second for approx. 10 minutes.

The test receiver is held at the intended installation site of the actual radio receiver (e.g. sensor cover with radio receiver). The test receiver evaluates the radio signal and you can read off the display whether the transmission path is suitable for practical application.

You can also use the radio test set for fault diagnosis. For example, you can use the test receiver to:

- check previously installed transmitters.
- determine whether the transmission path is disrupted by an external signal (i.e. a signal which does not come from a Merten radio component).

The radio test set is designed so that it can also be used by a person working on his/her own.