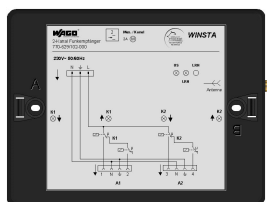


## Mounting and Installation Instructions

770-629/102-000 -Box  
 2 Channel WINSTA®  
 Radio Receiver  
 (Blinds-Control)



### Features

- Radio Receiver for Blinds-Control with EnOcean PTM Radio-Push-Buttons
- 2 Outputs for Blinds-Control with End Position Switches; 230V~ / 2A Motorload
- Status Indication via LED
- 868 MHz Frequency band
- Transmitter / Receiver assignment via Learn-Mode
- External Antenna for optimized Transmission Range (always required)
- Pluggable WINSTA® -Connectors

### 1. General Description

The WINSTA® Radio Receivers for switching of 2 electrical drives for blinds control via radio sensors and push-buttons are based on EnOcean Radio Technology. Transmission is on a european-wide harmonized transmission range of 868 MHz. The system is specially dedicated for flexible, pluggable building automation because the expenditure for new or reconfiguring of installations is minimized.

The 2 channel Radio Receiver enables easy integration of 868MHz Radio Technology into fast and easy to use WINSTA® Connector Wiring Systems.

**Compatibility:** Outputs are operated by switching commands from radio receivers based on EnOcean PTM-Modules (Piezo Transmitters) which are available from different manufacturers. Push buttons must be based on PTM 100 or PTM200 Modules.

**Transmitter / Receiver Assignment:** The assignment between sensor and output has to be taught (Learn-Mode) once during commissioning, the assignments are stored mains-failure protected in the NV-Ram of the Receiver. Multiple assignments between sensors and outputs are possible, e.g. one push-button could be assigned to multiple outputs (1:n); multiple push-buttons could be assigned to one output channel (n:1). One receiver could be operated from up to 30 transmitters at all.

**Outputs:** Loads are operated via 2 sets of relay contacts. Outputs are supplied via mains connector of the WINSTA® -Box. Max load of outputs for motors per channel is 2A. Sum of motorload for the 2 Channel Radio Receiver is max. 4A.

### 2. Restrictions and Regulations

#### 2.1 Legal Regulations



The following topics should be observed:

- the valid laws, norms and regulations
- the applicable local codes in respect to wiring practices
- the state of the technology at time of installation
- the operating manual from sensors and receiver
- the general rules of the technique
- the fact, that instructions manuals could only inform about general regulations and these have to correspond with plant or local regulations.

#### 2.1 Attention

The use of the devices does not need to be registered and is free in the European Union, Switzerland, Cyprus, the Czech Republic, Poland and in Slovenia. The use in other countries requires explicit clarification!

### 3. Advice for Safety



**! Danger for Life existing in case of open unit by electrical power !**

Electrical connection, mounting and dismantling is only allowed by qualified electrical personal.

Switch Off mains- / power-connectors before opening the receiver.

Assignment of the connectors must be observed because wrong wiring may destroy the device or lead to short circuits. Before commissioning it must be assured, there is no danger for bodily injury or loss of life by subsequent wiring or connected loads.

**For workings under voltage the national regulations have to be observed.**

**Failure to observe these precautions could result in severe bodily injury or loss of life.**

### 4. Commissioning

Before commissioning the receiver should be proofed for mechanical- or transport-damages. In case of probable damages the commissioning of the unit is not allowed.

Read the instruction manual carefully and observe the technical advices and applying legal regulations.

For commissioning the antenna should be connected before switching on the power supply.

#### 4.1 Handling Advices / ESD (Electrostatic Discharge)



The modules are equipped with electronic components that may be destroyed by electrostatic discharge. When handling the modules, ensure that the environment (persons, workplace and packing) is well grounded. Avoid touching of conductive components.

#### 4.2 Advices for Installation and Application

Avoid installing the module, the antenna and the antenna line close to sources of transient interferences, such as fluorescent tubes with defective starter, frequency converters and power cables. As a result, communication failures may occur leading to faulty status of outputs.

The WINSTA Radio Receiver 770-629/102-000 should only be used for blinds or shutters with end position switches. Adjustment of end position switches must be done before commissioning of the Radio-Receiver. Please observe the advices from the manufacturer additionally!

#### 4.3 Advices for Antenna Installation

Use only appropriate antenna (WAGO 758-910 incl. 3 m RG174-cable and SMA-connector; see accessories). Antenna must be mounted on metal footer with min dimensions of 25 cm x 25 cm.

Antenna including cable must have min 30cm distance to interference sources and Antenna should have free space to walls of min. 35 cm.

The cable must not be buckled because the cable may be damaged (RG174-curve radius > 15 mm).

The cable must be separated from mains supplies.

#### 4.4 Preconditions for Commissioning

Before commissioning the supply voltage must be applied and the external antenna must be connected.

Switches (Transmitters) should be „learned“ before mounting, because of reduced transmission range (appr. 5m) in Learn-Mode.

**4.5 Please observe the following Advices before activating the Learn-Mode!**



The sensitivity of the receiver is reduced to appr. 5 m during Learn-Mode is active.

In Learn-Mode the relay outputs are triggered cyclically in parallel to the indication of the status LEDs. If this behavior is not allowed in the application, the loads must be disconnected be means of the output connectors to assure no risk for health. When activating the Learn-Mode the former state of outputs is not stored.

**4.6 Teaching of Transmitters / Learn (LRN) Button**

Operating-state:

⇒ Receive-Mode; LED Us ON

1. Switch receiver into LRN-Mode
  - ⇒ Press LRN at the receiver
  - ⇒ LRN active - LED „LRN“ ON
  - ⇒ LEDs of 1. channel flashing
2. Select channel for Teaching
  - ⇒ Press LRN at the receiver
  - ⇒ Next / selected channel LEDs flashing
3. Operate Radio Transmitter / Push-Button (create telegram)
  - ⇒ Channel LEDs for 4 seconds ON
  - ⇒ Selected channel LED flashes again; further transmitters could be taught on this channel
  - ⇒ Exit LRN-Mode: see 4.7

**4.7 Exit LRN-Mode**

Learn-Mode is deactivated after 30 s automatically; no operation required.

⇒ Receiver switches off LRN-Mode  
LED „LRN“ OFF

Alternative: Leaving via LRN-Button

⇒ multiple operation of LRN-button  
⇒ Receiver leaves LRN-Mode (behind channel 4)  
LED „LRN“ OFF

**4.8 Selective deleting of single Transmitter / LRN Button**

**Please observe, the transmission range is reduced to appr. 5 mtrs, even if transmitters should be deleted!**

1. Switch Receiver into LRN-Mode
  - ⇒ Press LRN-Button
  - ⇒ LRN-Mode active - LED „LRN“ ON
  - ⇒ LEDs of 1. channel flashing
2. Select Channel to be „unlearned“
  - ⇒ Press LRN-Button again
  - ⇒ LEDs of next channel flashing
3. Operate Radio Transmitter / Push-Button (create telegram)
  - ⇒ LEDs of sel. channel are 4s OFF
  - ⇒ Exit LRN-Mode see 4.7

**5. Functions in Operation Mode Blinds-Control**

After receiving commands for > 0.75 s the outputs will be activated into direction up or down. The running time is 2 minutes. For direct reverse-commands the switch over time for execution is 0.75 s. Commands lasting less than 0.75 s (for direction up or down) are executed in keying mode. To switch off in end position, the blinds / drives must be equipped with end position switches.

**6. Technical Data**

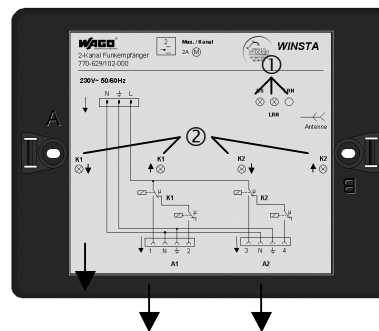
Designation	Data
<b>Mains supply</b>	
Input voltage	230V ~, 50..60Hz, max 16A
Connector	Pluggable WINSTA connector 1 x male connector 3-pole; (female connectors see accessories)
Current consumption (internal)	max. 21mA
<b>Outputs</b>	
No. of channels	2
Output-current (per channel) Motorload acc. EN 60669-2-1	max. 2A
Sum of load	max. 4A
Max. switching cycle	< 5 Hz
Connector	Pluggable WINSTA connector 2 x female connector 4-pole (male connectors see accessories)
Potential isolation	
Antenne / Mains	safe isolation
Mains/Output	none
Channel / Channel	none
<b>General Data</b>	
Ambient temperatur	0 ... 55°C
Storage temperatur	-25 ... + 85°C
Relative humidity	85%; no condensation
Degree of pollution	2
Degree of protection	IP20
Mounting position	optional
Material of housing	PA 6.6
Dimensions (WxHxD) mm	ca. 200 x 145 x 30 mm
Approvals	KEMA, CB acc. EN 60669-2-1

**7. Terminal Designation for Supply and Output Connectors**

Input / Supply: 3 pole WINSTA- male connector

Pin design.	Electr. determ.
N	Neutral
PE	Protective Earth
L	Phase (Line)

- ① Indicators / Button  
Us = Operating voltage  
LRN = Learn-mode /  
Learn-button
- ② Status indicators  
K1 + K2 = Output 1+2  
up/down
- ③ Antenna jack



Output / Loads: 4 pole WINSTA-female connectors

Pin design.	Electr. Determ.
N	Neutral
PE	Protective Earth
1	Phase 1 (Up)
2	Phase 2 (Down)

**8. Accessories**

**8.1 Cables**

**Supply**

e.g. connecting lead, female – open end of line, black

**Order-No.:** 771-9993/106-x01

└ 1 = length 1m  
└ ...8 = length 8m

*other length on request*

**Outputs**

e.g. connecting lead, female – open end of line, black

**Order-No.:** 771-9994/206-x01

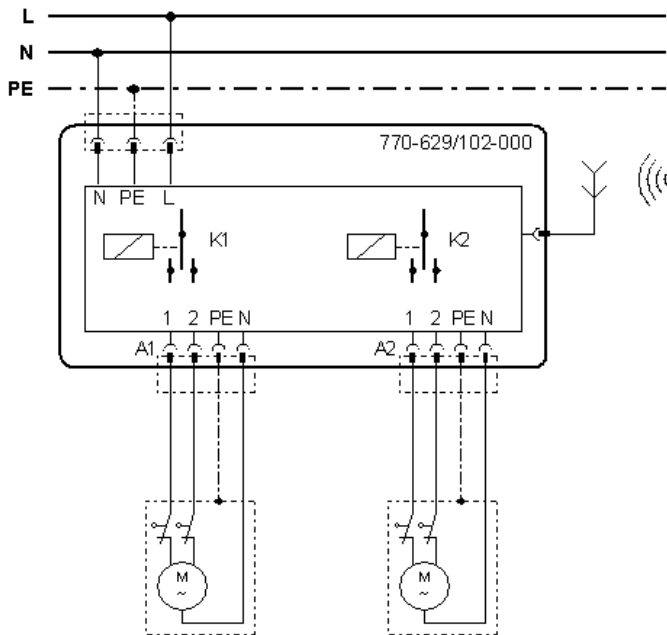
└ 1 = length 1m  
└ ...8 = length 8m

*other length on request*

**8.2 Antenna**

WAGO 758-910 incl. 3m RG174-cable and SMA-Connector.

**9. Wiring Diagram**



**10. General Advices for EnOcean Radio Technology**

**10.1 Safety Advices conc. R&TTE: Danger**



The radio receiver modules must not be used in any relation with equipment that supports, directly or indirectly, human health or life or with applications that can result in danger for people, animals or real

value.

This results from the classification of the radio receiver module in "Class 2 Equipment" according to ETSI EN 301 489-3 V1.4.1 (2202-08) "Specific conditions for short-range devices (SRD)".

**10.2 Details for Transmission Range**

The transmission ranges are mainly depending on mounting and positioning as well as type of material which is used in buildings. The type of used materials and thickness of walls have a main influence to the quality and the strength of radio data. It is recommended to make tests of data transmission at desired mounting positions before installation.

**10.3 Typical max. Transmission Ranges**

- 1) Visual contacts: typ. 30 m in passages, up to 100 m in halls
- 2) Rigypsum walls/ wood: typ. 30 m range through max. 5 walls
- 3) Brick wall / Gas concrete: typ. 20 m range through max. 3 walls
- 4) reinforceds concrete /-ceiling: typ. 10 m range through max. 1 wall

Supply blocks and lift shafts should be seen as a compartmentalisation.

**10.4 Reduction of Transmission Range**

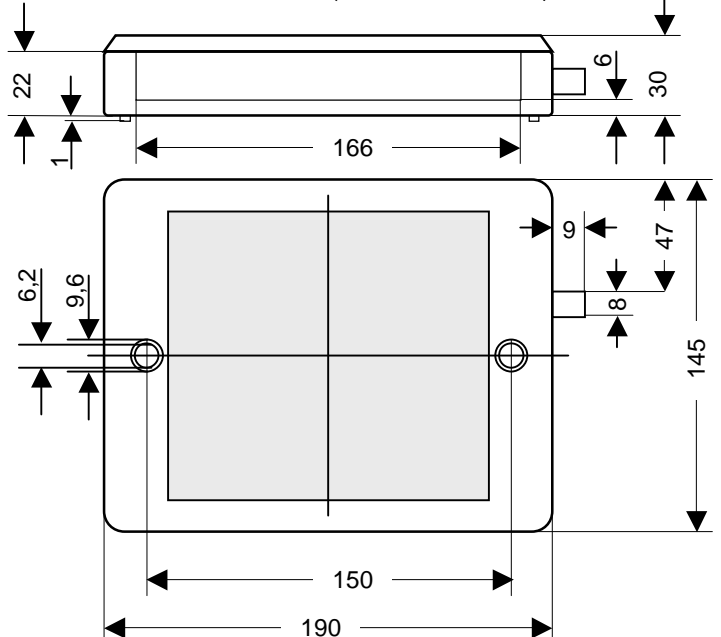
Restriction of the transmission range can also be due to:

- Hollow lightweight walls with insulating wool on metal foil
- suspend ceilings with panels made of metal
- carbon fiber, lead glass or glass with metal coating, metal furniture
- metal wall mounting of the switch.

In addition, the angle with which the signal arrives at the wall is of great importance. Depending on the angle, the effective wall strength and thus the damping attenuation of the signal changes. If possible, the signals should run vertically through the walling. Walling recesses should be avoided.

**For mounting and installation of transmitters please observe additionally the advices provided by the manufacturer!**

**11. Mechanical Dimensions (all distances in mm)**



12. EC Certificate of Conformity



EC Certificate of Conformity

Document No.: 77062910200001  
Month/Year: 06/05

This is to certify that the product designated hereunder conforms to the requirements, which are defined in the directive of the council for adaptation of the member states' legal prescriptions on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (1999/5/EG).

\_\_\_\_\_ **770-629/102-000** \_\_\_\_\_  
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\_\_\_\_\_  
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The following standards have been applied to check the electromagnetic compatibility of the product:

\_\_\_\_\_ EN61000-6-2 (01/99)  
\_\_\_\_\_ ETSI EN 301 489-1 (09/01)  
\_\_\_\_\_ ETSI EN 301 489-3 (11/01)  
\_\_\_\_\_ ETSI EN 300 220-3 (09/00)

This declaration is valid for the manufacturer/authorized representative

(Name) \_\_\_\_\_ WAGO Kontakttechnik GmbH  
\_\_\_\_\_ Hansastr. 27  
(Address) \_\_\_\_\_ 32423 Minden  
\_\_\_\_\_

made by

(Signature name) \_\_\_\_\_ Dr. Thomas Albers  
(Printed name and function of the signatory) \_\_\_\_\_ Technical director electronics  
\_\_\_\_\_ *Thomas Albers* \_\_\_\_\_  
Minden, 15<sup>th</sup> of June 2005 (Date) \_\_\_\_\_ (Legal signature)

This declaration certifies compliance with the indicated directives but implies no warranty of properties.

The safety instructions of the accompanying product documentation shall be observed.