

**WAGO Application: Plastic Technology Center (SKZ) in Würzburg, Germany**

WAGO Products:  
WAGO-I/O-SYSTEM with ETHERNET  
Controllers, DALI and EnOcean Components

## System Overview

524 - 525



**Radio Receiver Module**  
**Bluetooth® I/O Module**

526  
527



**Bluetooth® ETHERNET Gateway**

528



**Radio Receiver and Transmitter**  
WAGO Radio Adapter  
External Antenna  
Radio Transmitter, EnOcean

529  
530



**789 Series – EnOcean Radio Receiver in DIN-Rail Mount Enclosure**  
4-channel EnOcean Radio Receiver with 4 Changeover Contacts, 8 A  
4-channel EnOcean Radio Receiver with 4 Make Contacts, 16 A

532

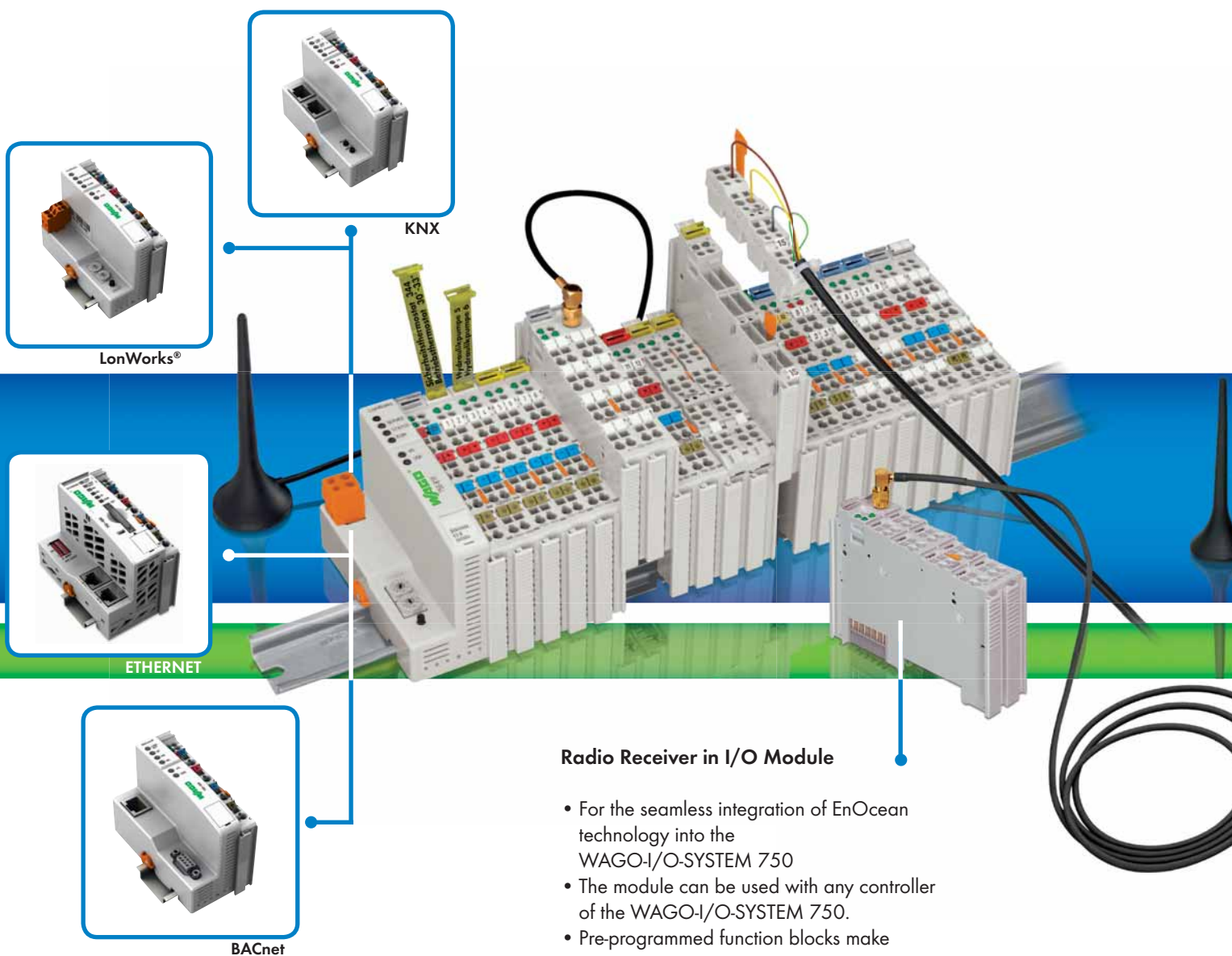
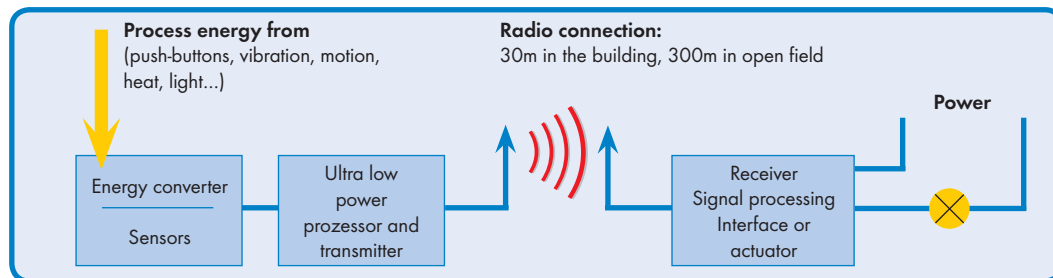


**770 Series – WINSTA® Radio Receiver**  
4-channel Radio Receiver with 4 Make Contacts  
2-channel Radio Receiver with Sunblind Outputs

533

# WAGO Radio Receiver with EnOcean Technology

The Benefits for Electronic and Radio Technology



## Radio Receiver in I/O Module

- For the seamless integration of EnOcean technology into the WAGO-I/O-SYSTEM 750
- The module can be used with any controller of the WAGO-I/O-SYSTEM 750.
- Pre-programmed function blocks make integration easy
- The number of sensors is almost illimited

Item No. 750-642



**enocean®**

### Radio Receiver in DIN-Rail Mount Enclosure

The stand-alone solution for DIN-rail mounting: 4-channel radio receiver module in 70mm DIN-rail mount enclosure.

Version 1: 4 make contacts, up to 16 A load carrying capacity  
Version 2: 4 changeover contacts, up to 8 A load carrying capacity per channel.

Item No. 789-601 (make contacts)  
Item No. 789-602 (changeover contacts)

### Radio Transmitter

Radio transmitter integrated in universal switch insert.

Item No.  
758-940/001-000 (2-channel light)  
758-940/003-000 (4-channel light)  
758-940/002-000 (2-channel roller blinds)  
758-940/004-000 (4-channel roller blinds)

### Radio Receiver in WINSTA® Box

**All integrated:** e.g. a complete blinds control (2-way sunblind outputs for 230V/2A) or a 4-channel module for lighting control (4-way switch output 230V/16A) with receiver and all required switching relay. The WINSTA® boxes are suitable for wall-, floor- and ceiling-mounting.

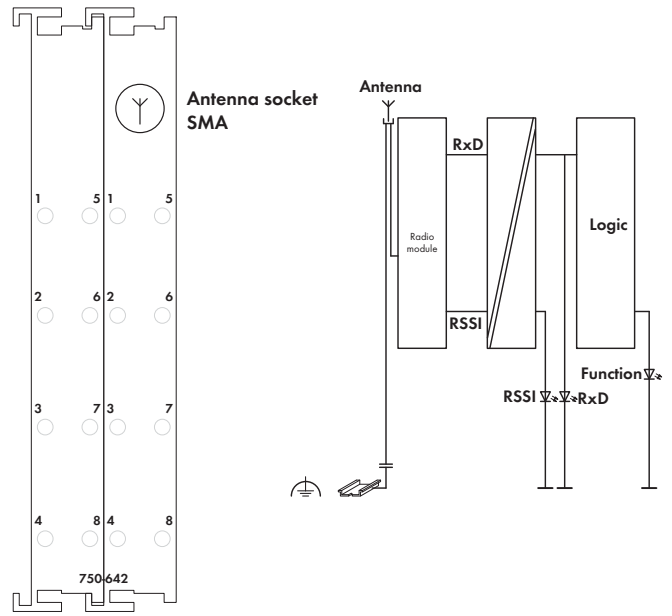
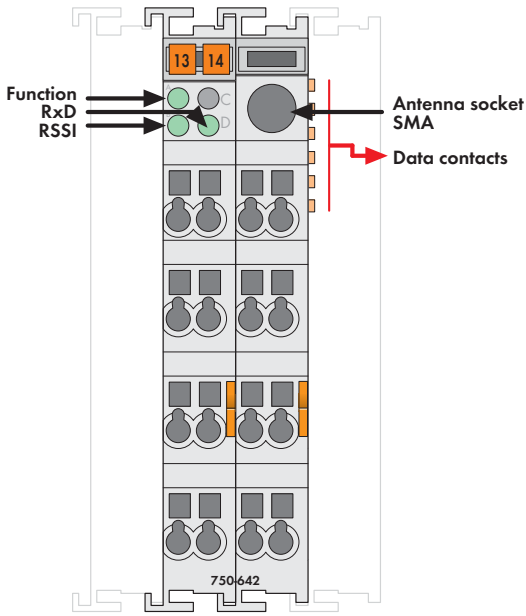
Item No. 770-629/102-000 (sunblinds control)  
Item No. 770-629/101-000 (lighting control)

### External Antenna

The antenna fits to all WAGO products shown here and is connected using an SMA socket. The antenna has a magnetic stand and a 2.5m long coax cable.

Item No. 758-910


# 7 Radio Receiver Module



Delivered without miniature WSB markers

The 750-642 I/O Module receives radio telegrams from maintenance-free, battery-less and wireless switches and sensors based on EnOcean radio technology. The module can be used with any controller of the WAGO-I/O-SYSTEM 750. Preprogrammed function blocks make integration easy. The energy required for switch or sensor operation is produced by converting one type of energy (heat, solar or mechanical energy) into usable electrical energy. The radiated energy from the transmitter modules is around one million times smaller than mobile phones. Almost any number of sensors is possible. However, the maximum number is around 100 transmitters per module, due to the increasing density of switches/sensors.

Four billion code numbers provide for clear transmitter/receiver assignment. Repeated, time-shifted transmission of the radio telegrams, at very short transmission times, results in a high level of protection against external interference. The maximum transmission range is approx. 300 meters in open field. Depending on the building materials used and on the spatial geometry, the range may be reduced to typically 30 meters (see manual for more information). The LED (RSSI) indicates a sufficient input level. \*Documentation available in German and English. An SMA socket which is integrated into the housing allows the connection of an external antenna. The 758-910 external antenna has a magnetic stand and a 2.5m long coax cable with SMA plug (available as an accessory).

Description	Item No.	Pack. Unit
Radio Receiver Module	750-642	1
<b>Accessories</b>		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
External antenna	758-910	1
<b>Approvals</b> Also see "Approvals Overview" in Section 1		
Conformity marking RTTE	www.wago.com	
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nL IIC T4	
EN 61241-0, -1		

Technical Data	
Frequency band	868.3 MHz
Transmission range	300 m in open field (typ. in buildings see manual)
Transmission protocol (radio telegram)	EnOcean
Current consumption (internal)	80 mA
Power supply	via system voltage DC/DC
Isolation	500 V antenna connection/system
Internal bit width	1 x 24 bits in/out (3 bytes user data)
	1 x 8 bits control/status
Dimensions (mm) W x H x L	24 x 64* x 100
	* + excess length of the SMA socket
Weight	80 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)

External antenna, GSM 900/1800



External antenna, WLAN/Bluetooth 2.4 GHz



Description	Item No.	Pack. Unit	Technical Data
External antenna	GSM 900/1800	758-910	1
			Frequency band: 870 MHz ... 960 MHz; 1710 MHz ... 1880 MHz
			VSWR: 870 MHz ... 960 MHz < 1.5; 1710 MHz ... 1880 MHz < 1.5
			Gain: 870 MHz ... 960 MHz 0 dB; 1710 MHz ... 1880 MHz 0 dB
			Max. Power: 20 W
			Cable length: 250 cm
			Connector: SMA right angle plug + ferrite bead
External antenna	WLAN/Bluetooth 2.4 GHz	758-912	1
			Frequency band: 2400 MHz ... 2485 MHz
			Gain: 2 dBi
			Cable length: 250 cm
			Connector: SMA right angle plug

Notes on operating the antenna with WAGO EnOcean radio receivers: The antenna is to be mounted on a plate measuring at least 9.8 x 9.8 inches (25 x 25 mm). The distance of interfering sources to the antenna and antenna line must be at least 11.8 inches (30 mm) and the free space between the antenna and the next wall must be at least 13.78 inches (35 mm). The antenna cable should, under no circumstances, be bent sharply, since irreversible damage may result to the antenna (RG 174 bend radius > 0.6 inches/ 15mm)

Radio transmitter, EnOcean easyfit PTM 250



Description	Item No.	Pack. Unit	Technical Data
2-channel light	758-940/001-000	1	Integrated radio transmitter: EnOcean PTM 200
4-channel light	758-940/003-000	1	Energy harvesting source: electrodynamic energy generator, maintenance free
2-channel roller blind	758-940/002-000	1	Radio technology /range: EnOcean 868 MHz, RPS Type 2; 300 m free field, typ. 30 m within buildings
4-channel roller blind	758-940/004-000	1	Total installation height: 14 mm (frame lies directly against the wall)
			Dimensions of rocker /frame cut-out /central plate: 50 x 50 mm / 55 x 55 mm / 71 x 71 mm
			Color: white

The universal switch insert can be integrated into numerous control programmes by different manufacturers, e.g.: BERKER, GIRA, JUNG and MERTEN. Delivery is without frame. Frames of the desired control programm have been orderen separately.

4-channel EnOcean radio receiver  
with 4 make contacts, 16 A

4-channel EnOcean radio receiver  
with 4 changeover contacts, 8 A

The 4-channel radio receiver in DIN-rail mount enclosure is used to switch 4 independent electrical devices or loads.

The radio receiver processes telegrams transmitted by sensors (binary information) using EnOcean radio technology (PTM + STM modules).

The outputs are switched via relay contacts.

- Radio receiver for battery-less and wireless sensors
- LED indication of switch status
- External antenna for optimum transmission range (required)
- Frequency band 868 MHz
- Transmitter-to-receiver assignment via learn mode



Description	Item No.	Pack. Unit	Item No.	Pack. Unit
4-channel EnOcean radio receiver	789-601	1	789-602	1

#### Technical Data

Voltage supply	24 V DC	24 V DC
Voltage range	-15 % ... +20 %	-15 % ... +20 %
Current consumption (internal)	max. 90 mA	max. 90 mA
Number of receive channels	40 (10 per output)	40 (10 per output)
Number of channels	4 (relay outputs)	4 (relay outputs)
Output current (per channel)	max. 16 A, AC1	max. 8 A, AC1
Type of load	resistive / lamp load	resistive / motor load
Switching frequency	max. < 5 Hz	max. < 5 Hz
Delay time transmitter /output command	< 100 ms; 40 ms ... 70 ms typ.	< 100 ms; 40 ms ... 70 ms typ.
Switching voltage	230 V AC	230 V AC
Fuse protection	Loads: wire breaker, max. 16 A	Loads: wire breaker, max. 16 A
Isolation	potential free contacts	potential free contacts
Ambient operating temperature	0 °C ... +55 °C	0 °C ... +55 °C
Storage temperature	-25 °C ... +85 °C	-25 °C ... +85 °C
Relative air humidity (no condensation)	85 %	85 %
Degree of pollution	2	2
Degree of protection	IP20	IP20
Mounting position	any	any
Dimensions (mm) W x H x L	70 x 55 x 90	70 x 55 x 90
	Height from upper-edge of DIN 35 rail	Height from upper-edge of DIN 35 rail
Wire connection	CAGE CLAMP®	CAGE CLAMP®
Cross sections	0.08 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / AWG 28 ... 12 (THHN, THWN)	0.08 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / AWG 28 ... 12 (THHN, THWN)
Stripped lengths	5 ... 6 mm / 0.22 in	5 ... 6 mm / 0.22 in
Standards/Specifications	Vibration and shock resistance acc. to IEC 60068-2-6 and IEC 60068-2-27	Vibration and shock resistance acc. to IEC 60068-2-6 and IEC 60068-2-27
Accessories: RF magnetic antenna incl. 3m connecting cable with SMA connector	758-910	758-910

	<b>4-channel radio receiver with 4 make contacts</b>	<b>2-channel radio receiver with sunblind outputs</b>
--	--	---

The 4-channel radio receiver is used to switch 4 independent electrical devices. The 2-channel radio receiver has 2 sunblind outputs that can be controlled independently from each other. The radio receiver processes telegrams transmitted by switches using EnOcean radio technology (STM modules). The outputs are switched via relay contacts.

- Radio receiver for battery-less and wireless sensors
- LED indication of switch status
- External antenna for optimum transmission range (required)
- Frequency band 868 MHz
- Transmitter-to-receiver assignment via learn mode
- The state of outputs can be predefined for a power failure scenario
- Wire connection using WINSTA connectors

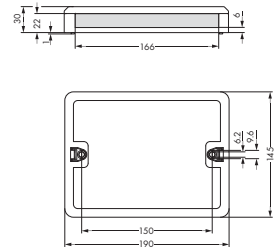
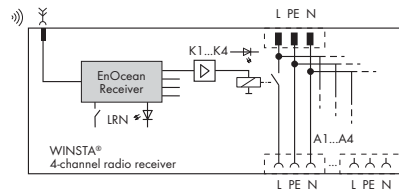


Illustration and block diagram for 770-629/101-000



Description	Item No.	Pack. Unit	Item No.	Pack. Unit
WINSTA® radio receiver	770-629/101-000	1	770-629/102-000	1

### Technical Data

	770-629/101-000	770-629/102-000
Voltage supply	230 V AC, 50 Hz ... 60 Hz, max. 16 A	230 V AC, 50 Hz ... 60 Hz, max. 16 A
Voltage range	± 10 %	± 10 %
Current consumption (internal)	max. 21 mA	max. 21 mA
Number of channels	4	2
Output current (per channel)	max. 16 A / 4 A	2 A motor load
Total current	max. 16 A	max. 4 A
Inrush current	max. 120 A / 50 ms	25 A
Type of load	resistive / lamp load	resistive / inductive
Switching frequency	max. 5 Hz	max. 5 Hz
Isolation	isolated internal voltage supply 2500 V impulse withstand voltage	isolated internal voltage supply 2500 V impulse withstand voltage
Fuse protection	External, 16 A max.	External, 16 A max.
Ambient operating temperature	0 °C ... +55 °C	0 °C ... +55 °C
Storage temperature	-25 °C ... +85 °C	-25 °C ... +85 °C
Relative air humidity (no condensation)	85 %	85 %
Degree of pollution	2	2
Degree of protection	IP20	IP20
Mounting position	any	any
Dimensions (mm) W x H x L	190 x 145 x 30	190 x 145 x 30
Type of mounting	Wall screw adapter	Wall screw adapter
Standards/Specifications	Vibration and shock resistance acc. to IEC 60068-2-6 and IEC 60068-2-27	Vibration and shock resistance acc. to IEC 60068-2-6 and IEC 60068-2-27
Accessories: RF magnetic antenna incl. 3m connecting cable with SMA connector	758-910	758-910
Connection accessories WINSTA connectors	Input: socket, 3 poles, e.g. 770-103; 4-channel output: plug, 3 poles, e.g. 770-113	Input: socket, 3 poles, e.g. 770-103; 2-channel output: plug, 4 poles, e.g. 770-114