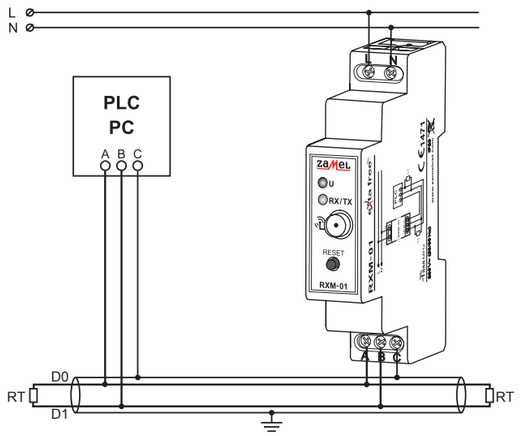
MOUNTING

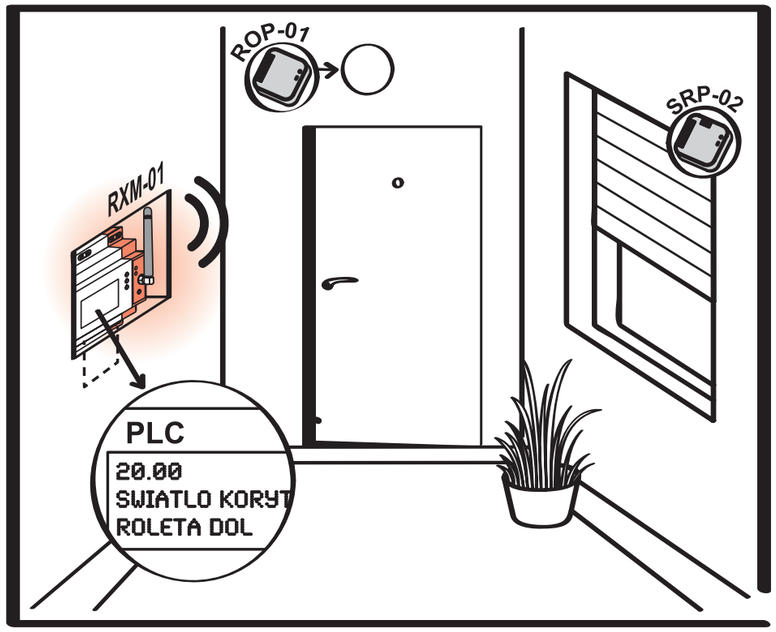
1. Disconnect power supply by the phase fuse, the circuit-breaker or the switch-disconnector combined to the proper circuit.
2. **Check if there is no voltage on connection cables by means of a special measure equipment.**
3. Instal RXM-01 device on a TH-35 rail in a distribution board.
4. Connect the cables with the terminals in accordance with the installing diagram.
5. Switch on the power supply from the mains.

Transmission line between the controller and RXM-01 device is a shielded twisted pair (wire) - it is required to ground the line shield at one point. Resistors (terminators) of 120 Ω should be placed at the beginning and at the end of the line.

CONNECTION



APPLICATION



RS485/EXTA FREE transceiver RXM-01 allows to transmit control signals from PLC controller (which is installed in a distribution board) to wireless EXTA FREE control system devices (ROP-01 radio receiver, SRP-02 radio roller blinds controller).

SERIA F

The ZAMEL company devices which are characterised with this sign can cooperate with each other.

WARRANTY CARD

There is 24 months guarantee on the product

1. ZAMEL provides a two-year warranty for its products.
2. The ZAMEL warranty does not cover: a) mechanical defects resulting from transport, loading / unloading or other circumstances b) defects resulting from incorrect installation or operation of ZAMEL products; c) defects resulting from any changes made by CUSTOMERS or third parties, to products sold or equipment necessary for the correct operation of products sold; d) defects resulting from force majeure or other aleatory events for which ZAMEL is not liable; e) power supply (batteries) to be equipped with a device in the moment of sale (if they appear);
3. All complaints in relation to the warranty must be provided by the CUSTOMER in writing to the retailer after discovering a defect.;
4. ZAMEL will review complaints in accordance with existing regulations.;
5. The way a complaint is settled, e.g. replacement of the product, repair or refund, is left to the discretion of ZAMEL.
6. Guarantee does not exclude, does not limit, nor does it suspend the rights of the PURCHASER resulting from the discrepancy between the goods and the contract.

Salesman stamp and signature, date of sale

RS485/EXTA FREE TRANSCEIVER RXM-01

INSTRUCTION MANUAL

ZAMEL Sp. z o.o.

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tel. +48 (32) 210 46 65, fax +48 (32) 210 80 04
www.zamelcet.com, e-mail: marketing@zamel.pl

DESCRIPTION

RXM device is used to control receivers of wireless EXTA FREE system by means of an industrial controller or a PC computer, equipped with RS-485 interface network, which use Modbus protocol to communicate. This device allows to add EXTA FREE devices to the already existing wired installation (controlled by RS-485 network) to increase range and possibilities of the system without additional wires. RXM-01 device in connection with an industrial controller allows to control automatically wireless receivers (creating lighting stages, automatic switch on or switch of devices at the adjusted time).

FEATURES

- cooperation with wireless EXTA FREE system transmitters and receivers,
- cooperation with devices operating in MODBUS standard (e.g. PLC programmable controllers, PC computers),
- possibility of independent control up to 127 receivers,
- mounting in a distribution board on a TH-35 rail,
- wide range of operation (up to 300 m),
- sending information and power supply are optically signalled,
- connection possibility of external antenna ANT-01 not mounted in a distribution board,
- possibility of increasing operation range by means of RTN-01 retransmitter.

CAUTION!

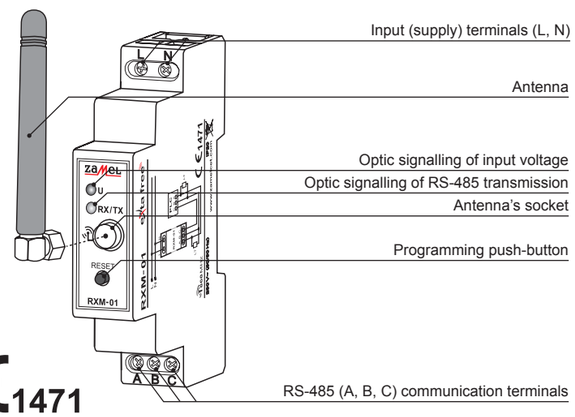
The device is designed for single-phase installation and must be installed in accordance with standards valid in a particular country. The device should be connected according to the details included in this operating manual. Installation, connection and control should be carried out by a qualified electrician staff, who act in accordance with the service manual and the device functions.
In case of casing dismantling an electric shock may occur, and the guarantee is lost then. Before installation make sure the connection cables are not under voltage. The cruciform head screwdriver 3,5 mm should be used to instal the device. Improper transport, storage, and use of the device influence its wrong functioning. It is not advisable to instal the device in the following cases: if any device part is missing or the device is damaged or deformed. In case of improper functioning of the device contact the producer.

The symbol means selective collecting of electrical and electronic equipment.
It is forbidden to put the used equipment together with other waste.

TECHNICAL DATA

RXM-01	
Input (supply) terminals:	L, N
Input rated voltage:	230 V AC
Input voltage tolerance:	-15 ÷ +10 %
Nominal frequency:	50 / 60 Hz
Nominal power consumption:	0,49 W
Optic signalling of input (supply):	LED green diode
RS-485 communication terminals:	A (D0), B (D1), C (common)
Communication protocols:	Modbus RTU, Modbus ASCII
Transmission speed:	2400, 4800, 9600, 19200 bit/s
Parity:	none, parity test, odd parity
Network address:	0 (broadcast), 1 ÷ 247
Optic sugnalling of RS-485 transmission:	LED yellow diode
Number of channels:	127
Transmission:	radio 868,32 MHz
Coding way:	unidirectional
Coding:	addressing transmission
Range:	up to 300 m in the open area
Ambient temperature range:	-10 ÷ +55 °C
Section of connecting cables:	do 2,5 mm^2
Operating position:	free
Casing mounting:	TH-35 rail (EN 60715)
Casing protection degree:	IP20 (EN 60529)
Protection level:	II
Overvoltage category:	II
Pollution degree:	2
Surge voltage:	1 kV (EN 61000-4-5)
Dimensions:	monomodular casing (17,5 mm) 90 x 17,5 x 66 mm
Weight:	0,070 kg
Reference standard:	ETSI EN 300 220-1, ETSI EN 300 220-2, EN 60950, EN 61000

APPEARANCE



CE 1471

VER. 004_11.07.2011

OPERATION

RS-485 communication default parameters (default settings):
Protocol: RTU Modbus (8 bits)
Transmission speed: 9600 bps
Parity: parity test (parity bit + stop bit)
Network address: 1
Codes of Modbus function:
FC03 - configuration register readout (transmission parameters, etc.)
FC05 - output status setting (frame transmission with suitable push-button code)
FC16 - (10 hex) - configuration registers record (transmission parameters record, etc.)

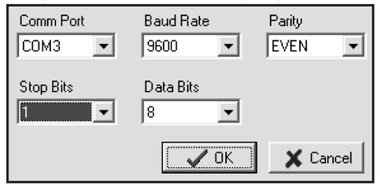
FC05 - output status setting

Register address		Output value	Push-button code
Base 0 std addressing	**Base 1** PLC addressing		
00 00	00 01	FF 00	Push-button1 pressing
00 00	00 01	00 00	Push-button 1 release
00 01	00 02	FF 00	Push-button 2 pressing
00 01	00 02	00 00	Push-button 2 release
00 7E	00 7E	FF 00	Push-button 127 pressing
00 7E	00 7E	00 00	Push-button 127 release

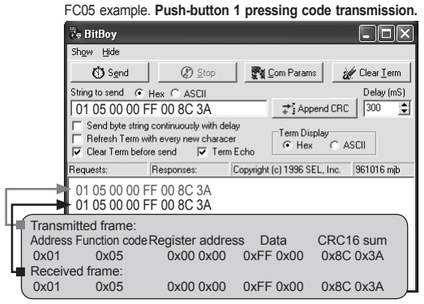
FC03 and FC16 - register configuration readout/record

Register address		Register content	Push-button code
Base 0 std addressing	**Base 1** PLC addressing		
00 00	00 01	Wired transmission parameters	Bits 1:0: Bits 1:0 Transmission speed (bit/sec.) 00=2400 01=4800 10=9600 11=19200 Bits 3:2 sign error control 00 and 11 = none 01=odd parity test 10=parity test Bit 4 Transmission mode 0=RTU Modbus 1=ASCII Mosdbus
00 01	00 02	Modbus address	Bits 7:0 Values from 1 to 247
00 02	00 03	Register record blockade	0=unblocking, 1=blocking Bit 0 Blocking of wired transmission parameters record Bit 1 Blocking of Modbus address record

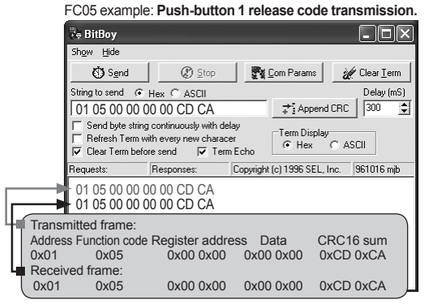
Setting window (Com Params) of BitBoy programme



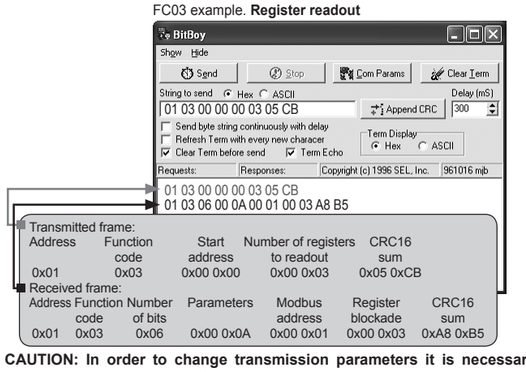
FC05 example. **Push-button 1 pressing code transmission.**



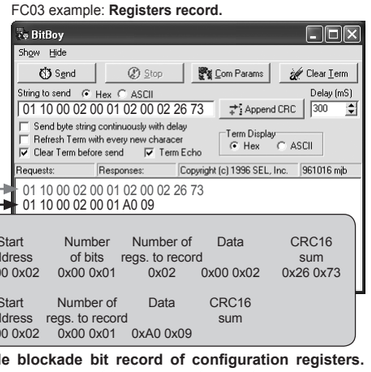
FC05 example: **Push-button 1 release code transmission.**



FC03 example. **Register readout**



FC03 example: **Registers record.**



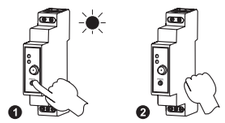
CAUTION: In order to change transmission parameters it is necessary to delete a suitable blockade bit record of configuration registers. After content change in configuration registers, transmission parameters are updated just after a reply is sent (in broadcast mode the device does not send replies).

PC computer equipped in RS-485 interface card can take place of a controller (it is possible to use a converter RS-485 instead of RS-23 or USB) or a suitable software (e.g. BitBoy application).

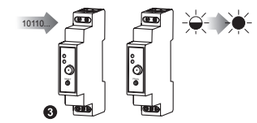
RESET PUSH-BUTTON

1 short pressing (<2 sec.): radio transmission of push-button 1 pressing code.
2 short pressings (<2 sec each): radio transmission of push-button 1 release code.
1 long pressing (>2 sec.): device RESET.
2 short pressings (<2 sec. each) + 1 long pressing (>2 sec.): device RESET - return to default settings (Modbus address, transmission parameters).
LED green diode flashing - chosen pressing combination has been confirmed.

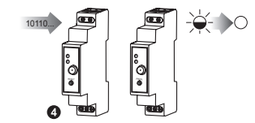
TRANSMITTERS' PROGRAMMING



Press PROG push-button of ROM-01 device for a longer time until LED red diode switches on (constant signal). Next release PROG push-button.



Type push-button 1 pressing code in RXM-01 device. LED red diode of ROM-01 switches on (first signal pulsates, next the signal is constant).



Type push-button 1 release code in RXM-01 device. LED red diode of ROM-01 switches on (signal pulsates) and then switches off
- THE TRANSMITTER IS ADDED.

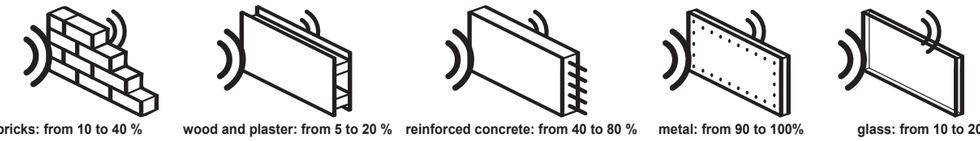
COOPERATION AND OPERATING RANGE

Symbol	ROP-01	ROP-02	ROB-01	SRP-02	SRP-03	RWG-01	RWL-01	ROM-01	ROM-10	RDP-01	RTN-01
RNK-02	180 m	200 m	200 m	200 m	200 m	250 m	180 m	250 m	250 m	180 m	250 m
RNK-04	180 m	200 m	200 m	200 m	200 m	250 m	180 m	250 m	250 m	180 m	250 m
P-256/8	230 m	250 m	250 m	250 m	250 m	300 m	200 m	300 m	300 m	230 m	300 m
P-257/4 (2)	180 m	200 m	200 m	200 m	200 m	250 m	180 m	250 m	250 m	180 m	250 m
RNM-10	230 m	250 m	250 m	250 m	250 m	300 m	200 m	300 m	300 m	230 m	300 m
RNP-01	160 m	180 m	180 m	180 m	180 m	200 m	160 m	200 m	200 m	160 m	200 m
RNP-02	160 m	180 m	180 m	180 m	180 m	200 m	160 m	200 m	200 m	160 m	200 m
RNL-01	160 m	180 m	180 m	lack*	lack*	200 m	160 m	200 m	200 m	160 m	200 m
RTN-01	200 m	200 m	200 m	200 m	200 m	250 m	200 m	250 m	250 m	200 m	250 m
RCR-01	160 m	180 m	180 m	lack*	lack*	200 m	160 m	200 m	200 m	160 m	200 m
RTI-01	160 m	180 m	180 m	180 m	180 m	200 m	160 m	200 m	200 m	160 m	200 m
RXM-01	230 m	250 m	250 m	250 m	250 m	300 m	200 m	300 m	300 m	230 m	300 m

* - 1-channel transmitters do not cooperate with roller blind controllers..

CAUTION: The given range concerns open area - an ideal condition without any natural or artificial obstacles. If there are some obstacles between a transmitter and a receiver, it is advisable to decrease the range according to: wood and plaster: from 5 to 20 %, bricks: from 10 to 40 %, reinforced concrete: from 40 to 80 %, metal: from 90 to 100 % , glass: from 10 to 20 %, Over- and underground medium and high electrical power lines, radio and television transmitters, GSM transmitters set close to a device system have also a negative influence on the range.

RANGE LOSS CONCERNING RADIO SIGNALS GOING THROUGH OBSTACLES



bricks: from 10 to 40 % | **wood and plaster: from 5 to 20 %** | **reinforced concrete: from 40 to 80 %** | **metal: from 90 to 100%** | **glass: from 10 to 20 %**

TRANSMITTERS

RNK-02
2–channel button radio transmitter

RNK-04
4-channel button radio transmitter

P-256/8
8-channel remote control

P-257/4
4-channel remote control

P-257/2
2-channel remote control

RCR-01
Radio motion sensor

RNL-01
Radio foot transmitter

RTI-01
IR/EXTA FREE transceiver

RNM-10
4-channel radio modular transmitter

RNP-01
4-channel radio transmitter

RNP-02
4-channel radio transmitter

RXM-01
RS-485/EXTA FREE Transceiver

RECEIVERS

ROP-01
1-channel radio receiver

ROP-02
2-channel radio receiver

RDP-01
1-channel radio dimmer

ROB-01/12-24V
Radio gate controller

ROM-01
1-channel radio modular receiver

RWL-01
Radio lighting switch

RWG-01
Remote control socket

SRP-02
Radio roller blinds controller

SRP-03
Central radio roller blinds controller

ROM-10
2-channel radio modular receiver

ACCESSORIES

ANT-01
External antenna

RTN-01
Retransmitter