INSTALLATION MANUAL

Z-AIR-1

RADIOMODEM 868-870 MHz with RS485 interface and integrated antenna. Complies with Directive 2014/53/UE (RED)



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INSTRUCTIONS IN ENGLISH LANGUAGE

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WARNINGS



Before performing any operation, it is mandatory to read all the contents of this manual.
The module may only be used by qualified technicians in the field of electrical installations. Specific documentation is available at www.seneca.it



Repair of the module or replacement of damaged components must be carried out by the manufacturer. The product is sensitive to electrostatic discharge, take appropriate countermeasures during any operation.



The warranty void in case of improper use or tampering with the module or devices supplied by the Manufacturer, necessary for its correct functioning, and in any case, if the instructions contained in this manual have not been followed.



Disposal of electrical and electronic waste (applicable in the European Union and other countries with separate collection).
The symbol on the product or on the packaging indicates that the product must be handed over to the authorised collection centre for the recycling of electrical and electronic waste.

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PRODUCT DESCRIPTION

Z-AIR-1 is a radiomodem (IP65) compliant with the RED Directive, equipped with RS485 serial interface and integrated coaxial dipole antenna. The different operating modes supported such as point-to-point, point-to-multipoint, broadcasting and ModBUS/ModBUS low energy, make Z-AIR-1 a flexible product for multiple industrial applications.
The device is fully configurable via software.

WARNING! Z-AIR-1 is not compatible with industrial radio networks configured with radiomodems of the previous generation such as Z-AIR.

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INSTALLATION RULES

The Z-AIR-1 can be wall-mounted by means of two holes in the supplied stainless steel bracket. The holes are designed to accommodate dowels with a diameter of 6 mm.
The product is supplied with a multipolar serial cable, suitable also for outdoor installations.

MODULE DIMENSIONS



Dimension (L×Ø)	42 x 4 cm
Cable length	5 m (*)
Weight	750 g
Housing	Fiberglass IP65
Mounting	Stainless steel wall mounting bracket (supplied)

(*) 5 m is the standard length. For longer lengths, contact the SENECA offices.

GENERAL DATA	
Power supply	9 – 32 Vdc
Power consumption	30 mA (Rx) / 200 mA (Tx)@12 Vdc
Operating band	868 – 870 MHz
Numer of channels	1@CH50kHz; 3@CH25kHz

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Chanalization	25-50 kHz
Modulation	9K00F1D (@25 kHz channeling); 18K00F1D (@ 50kHz channeling)
Data speed (radio)	9.600 bps (@ 25 kHz channeling); 19.200 bps (@50kHz channeling)
Antenna	λ/2 embedded
Connector	9 PIN connector for VCC/GND/RTX/RS 485/On air/GND and PWR ON
Operating modes	Point-to-point, Point-to-multipoint, broadcasting, digirepetear; routing chart support for addressing
Operating temperature	-30..+60 °C
Serial interface	RS485
Protocol	Transparent (max 1.024 bytes buffer size)
Data speed	From 1,2 up to 57,6 kbps
Output power	25/150/500 mW depending on operating sub-band
Receiver and input sensitivity	CLASS 2 - LBT and AGILITY; BER BER <10^-2 <-105dBm@50 kHz; <-107dBm@25 Khz
Communication mode / Data format	Half /Full Duplex
Coverage	Up to 7 km in open field with directive antenna in dominant position
Norms	EN 50401, EN 60950-1, EN 301489-1/3, EN 300220-1/2 v 2.3.1, ERC 70-03, Directive RED (Radio Equipment Directive) 2014/53/UE, Directive 1999/5/CE, Directive 2012/19/EU

For further information please refer to the USER MANUAL available on the SENECA website at www.seneca.it/products/z-air-1

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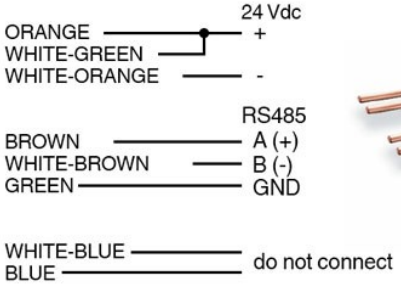
SCHEME FOR ELECTRICAL CONNECTIONS



COMMUNICATION PARAMETERS ON SERIAL PORT

DEFAULT SETTINGS	**9.600 bps with 8,N,1 format.**

If you need to change the communication parameters, you must install the **Z-AIR-1 Setup** software in your workstation and follow the instructions in the guide below.
Z-AIR-1 Setup can be downloaded free of charge from the SENECA website in the software section of the product sheet www.seneca.it/prodotti/z-air-1

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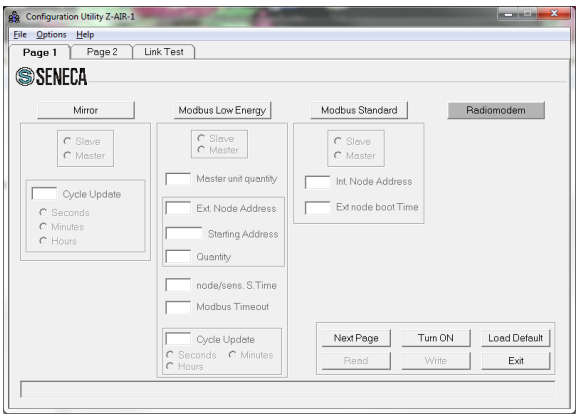
GUIDE TO THE COMMUNICATION PARAMETERS CUSTOMIZATION

NOTE: In order to change the communication parameters, it is mandatory to use an **RS485/USB converter** such as i.e. SENECA converters S117P1 and S107USB.

1)	Prepare connections for 24 Vdc power supply without turning ON the supply. **N.B. Power will be given later in point 6) of this guide.**
2)	Connect the RS485 serial port of the radio-modem to the RS485/USB converter following the instructions in the ELECTRICAL CONNECTIONS SCHEME at page 5.
3)	Connect the RS485/USB converter to your workstation (and install the appropriate drivers if necessary).
4)	Start the Z-AIR-1 Setup software, which will appear with the following window: 

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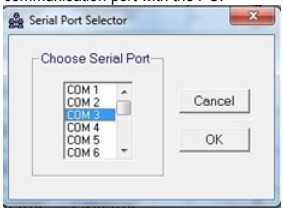
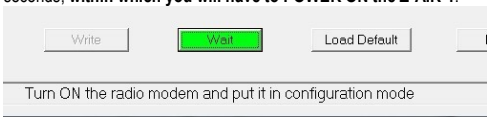
GUIDE TO THE COMMUNICATION PARAMETERS CUSTOMIZATION

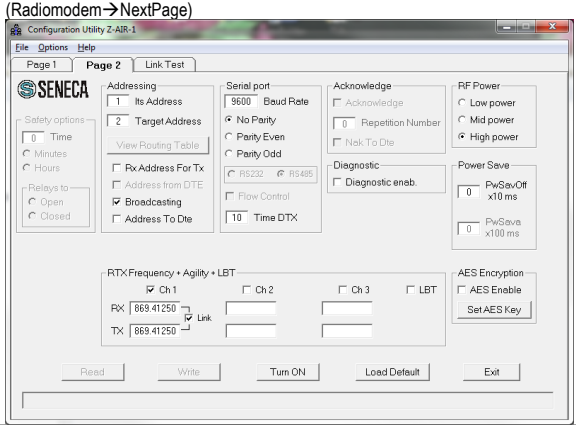
5) Using the top menu **Options → Serial port selector** and set the correct communication port with the PC.



6) Click the **Turn ON** button. The button will start flashing green with **Wait** for about 5 seconds, **within which you will have to POWER ON the Z-AIR-1**.



7) When the Z-AIR-1 will be recognized, click on **Read** button to read the configuration (Radiomodem→NextPage)



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GUIDE TO THE COMMUNICATION PARAMETERS CUSTOMIZATION	
8)	Perform the "Baud R. DTE/Parity" parameter changes to bring them to the desired values.
9)	Once the changes have been completed, press the **Write** button to store the configuration in the Z-AIR-1. The software will indicate the correct programming.

The Z-AIR-1 is now programmed and can be switched off without losing any configuration changes.

For further clarifications and further information on the other modes present in the configuration software (Mirror, Modbus Low Energy, Modbus standard) **please refer to the USER MANUAL** supplied with the instrument or to the reading of the software help. User manual is also available in the DOWNLOAD section of the product datasheet www.seneca.it/products/z-air-1

ORDER CODES

Z-AIR-1 Setup	Free software available online for Z_AIR-1 radiomodem configuration
Z-AIR-1	Radiomodem with RS485 interface and embedded, cable L=5 m
Z-AIR-1-10m	Radiomodem with RS485 interface and embedded, cable L=10 m

CONTACTS

Technical support	support@seneca.it
Product Information	sales@seneca.it

For further information, please consult the online datasheet and the USER MANUAL, which can be downloaded free of charge at www.seneca.it/prodotti/z-air-1 .

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