

Instruction Manual for the use and the maintenance of the Radio Remote Control

Original instructions

**Part B: Conformity and frequencies
(915-928MHz)**

DYNAMIC SERIES

WARNING

THIS PART OF THE MANUAL CONSISTS OF Part B - Information, instructions and warnings for the Conformity and frequencies (915-928MHz). The Manual consists of Part A – General, Part B – Conformity and Frequencies, Part C – Transmitting Unit, Part D – Receiving Unit, Part E – Battery and Battery Charger, plus the Technical Data Sheet.

THIS MANUAL, INCLUDING ALL PARTS THEREOF, AND ALL INSTRUCTIONS CONTAINED HEREIN, MUST BE READ CAREFULLY AND UNDERSTOOD BEFORE INSTALLING, USING, MAINTAINING OR REPAIRING THE AUTEC RADIO REMOTE CONTROL.

FAILURE TO READ AND COMPLY WITH ALL APPLICABLE WARNINGS AND INSTRUCTIONS OR ANY ONE OF THE LIMITATIONS NOTED IN THIS MANUAL CAN RESULT IN SERIOUS BODILY INJURY OR DEATH, AND/OR PROPERTY DAMAGE.

THE AUTEC RADIO REMOTE CONTROL IS NOT A STANDALONE PRODUCT AND IS INTENDED ONLY AS A COMPONENT ON A MACHINE:

- **ON WHICH AND WHERE THE USE OF A RADIO REMOTE CONTROL IS APPROPRIATE,**
- **THAT CAN BE OPERATED SAFELY AND IN ACCORDANCE WITH ALL APPLICABLE LAWS, REGULATIONS AND STANDARDS BY SUCH REMOTE CONTROL.**

ACCORDINGLY, IT IS THE RESPONSIBILITY OF THE MACHINE MANUFACTURER ON WHICH THE AUTEC RADIO REMOTE CONTROL IS INTENDED TO BE INSTALLED, to perform an in-depth and accurate risk assessment to determine if the Autec Radio Remote Control is suitable for operating a Machine in conditions of safety and operational effectiveness, taking into account the conditions of use, the intended uses and the reasonably foreseeable incorrect ones, so that the installation, maintenance and use of the Autec Radio Remote Control, and all its components, are performed only and entirely in compliance with this Manual and in accordance with all local regulations, safety standards and regulations (referred to herein as "Laws, Regulations and Standards").

With reference to the USA market the Laws, Regulations and Standards include all safety rules and regulations of the Occupational Safety & Health Administration (OSHA) (<http://www.osha.gov>), all federal, state and local laws, regulations and building and electrical codes, and all applicable standards, including but not limited to ANSI Standards.

It is also the responsibility of the Manufacturer and of the design professionals of the Machine on which the Autec Radio Remote Control is to be installed and used to be certain that the structure, condition, organization and markings of the Machine as installed at the facility is appropriate for and will allow for the safe and reliable use and control of the Machine through the Autec Radio Remote Control interface.

IT IS THE RESPONSIBILITY OF THE OWNER AND FACILITY OPERATOR, AND THEIR DESIGN PROFESSIONALS, that the installation, maintenance and operation of the Autec Radio Remote Control and all of its components are done solely and completely in accordance with this Manual, and with all applicable Laws, Regulations and Standards, even local. It is also the responsibility of the Manufacturer of the Machine on which the Autec Radio Remote Control is to be installed and used, and their design professionals, to be certain that the structure, condition, organization and markings of the Machine as installed at the facility is appropriate for and will allow for the safe and reliable use and control of the Machine through the Autec Radio Remote Control interface.

ONLY QUALIFIED AND PROPERLY TRAINED PERSONNEL SHOULD BE PERMITTED TO OPERATE OR USE THE AUTEC RADIO REMOTE CONTROL AND THE MACHINE OPERATED BY OR THROUGH THE AUTEC RADIO REMOTE CONTROL. ONLY QUALIFIED AND PROPERLY TRAINED PERSONNEL SHOULD BE PERMITTED TO BE IN THE VICINITY OF MACHINE OPERATED BY OR THROUGH THE AUTEC RADIO REMOTE CONTROL.

FAILURE TO PROPERLY INSTALL, OPERATE, MAINTAIN AND SERVICE THE AUTEC RADIO REMOTE CONTROL CAN RESULT IN SERIOUS BODILY INJURY OR DEATH AND/OR PROPERTY DAMAGE. Refer to this Manual and each of its Parts for further assistance or contact Autec. Autec is not responsible for and shall not be held liable for any installation of the Autec Radio Remote Control not performed by Autec or for any use of the Autec Radio Remote Control not in complete compliance with, and/or not maintained in complete compliance with, all Autec instructions and warnings and all applicable Laws, Regulations and Standards, even local.

Autec is not responsible for and shall not be held liable for any alteration or modification of the Autec Radio Remote Control, or the use of non-Autec components or products used with or incorporated into the Autec Radio Remote Control.

IT IS THE RESPONSIBILITY OF THE OWNER AND FACILITY OPERATOR, AND THEIR DESIGN PROFESSIONALS, to be certain that the Autec Radio Remote Control is properly maintained and serviced at all times in compliance with all Autec instructions and warnings, and with all applicable Laws, Regulations and Standards, even local.

IT IS THE RESPONSIBILITY OF THE OWNER AND FACILITY OPERATOR, AND THEIR OFFICERS, MANAGERS AND SUPERVISORS, to be certain that all Users of the Autec Radio Remote Control and that all Persons who are or will be working with or near the Machine operated by or through the Autec Radio Remote Control are fully and properly educated and trained by qualified Personnel in the proper and safe use of the Autec Radio Remote Control and of the Machine, including without limitation complete familiarity with and understanding of Autec warnings and instructions, and all applicable Laws, Regulations and Standards, even local, and that such Users and other Persons do in fact at all times operate or work with the Autec Radio Remote Control safely and ONLY in compliance with Autec instructions and warnings and with all applicable Laws, Regulations and Standards, even local. FAILURE TO DO SO CAN RESULT IN SERIOUS BODILY INJURY OR DEATH AND/OR PROPERTY DAMAGE.

IT IS THE RESPONSIBILITY OF THE OWNER AND FACILITY OPERATOR, AND THEIR OFFICERS, MANAGERS AND SUPERVISORS, to be certain that the areas in which the Machine operated by or through the Autec Radio Remote Control is located and operates are clearly delineated and marked in accordance with all Autec warnings and instructions, and all applicable Laws, Regulations and Standards, even local, and otherwise sufficient to alert and warn ALL PERSONS that the Machine is operated by or through a Radio Remote Control, and prohibiting any unauthorized access thereto. FAILURE TO DO SO CAN RESULT IN SERIOUS BODILY INJURY OR DEATH AND/OR PROPERTY DAMAGE.

FAILURE TO OPERATE THE AUTEC RADIO REMOTE CONTROL SAFELY AND IN COMPLIANCE WITH AUTEC INSTRUCTIONS AND WARNINGS AND WITH APPLICABLE LAWS, REGULATIONS AND STANDARDS, EVEN LOCAL, AND/OR PERMITTING USERS OR OTHER PERSONS NOT PROPERLY TRAINED IN THE SAFE AND PROPER USE OF THE SYSTEM, OR THE MACHINE ON WHICH IT IS INSTALLED, CAN RESULT IN SERIOUS BODILY INJURY OR DEATH AND/OR PROPERTY DAMAGE.

INDEX

1	Information on the use of instructions	8
1.1	Structure of the Instruction Manual	8
1.2	Caption and terminology	10
1.3	Symbols	11
1.4	To whom the instructions are addressed	11
1.5	Instruction storage	11
1.6	Intellectual property	11
2	Brief product presentation	12
2.1	Series, Radio Remote Control and Unit	12
2.2	Conformity with standards	12
2.3	Contacts and useful addresses	12
2.4	Warranty	12
2.5	Technical assistance and spare parts	12
3	Conformity	13
3.1	FCC conformity	13
3.2	IC conformity	15
4	Frequencies	17
4.1	Frequency band 915-928MHz	17

1 Information on the use of instructions



Before reading this part of the Manual, you must read and understand the general part (Part A) of the Manual provided with the Radio Remote Control.

1.1 Structure of the Instruction Manual

The Manual for the use and maintenance of Autec Radio Remote Controls consists of different parts, that altogether form the Manual; the Manual must be read carefully, understood and applied by the Radio Remote Control's Owner, User and by all those Persons that, for any reasons, may operate with the Radio Remote Control or with the Machine where it is installed. The following table describes the structure of the Instruction Manual for the use and the maintenance of the Radio Remote Control.

Part	Title	Contents
A	General part	- General information regarding the series, - directions for risk assessment of the "Machine+Radio Remote Control" system, - warnings for installation of the Radio Remote Control, - warnings for use and maintenance of the Radio Remote Control, - instructions for correct transportation and storage of Radio Remote Control.
B	Conformity and frequencies	- Operating frequency bands of the Radio Remote Control, - conformity and law references of the Radio Remote Control.
C	Transmitting Unit	Description and instructions concerning the Transmitting Unit, including: - description of operation, - commands, - light signals, - malfunctions, - additional instructions to the general part.
D	Receiving Unit	Description and instructions concerning the Receiving Unit, including: - description of operation, - light signals, - malfunctions, - additional instructions to the general part.
E	Battery and battery charger	Description, warnings and instructions concerning batteries and battery chargers, including: - description of operation, - light signals, - malfunctions, - instructions for the User.

Usage and maintenance instructions are supplemented by the Radio Remote Control's Technical Data Sheet, that:

- Describes the Transmitting Unit's configuration
- Indicates the relation between commands sent by the Transmitting Unit and those available on the Receiving Unit.

Usage and maintenance instruction as a whole are to be considered as an integral part both of the Autec Radio Remote Control and of the Machine, system, device or Machinery system where the Radio Remote Control is installed.

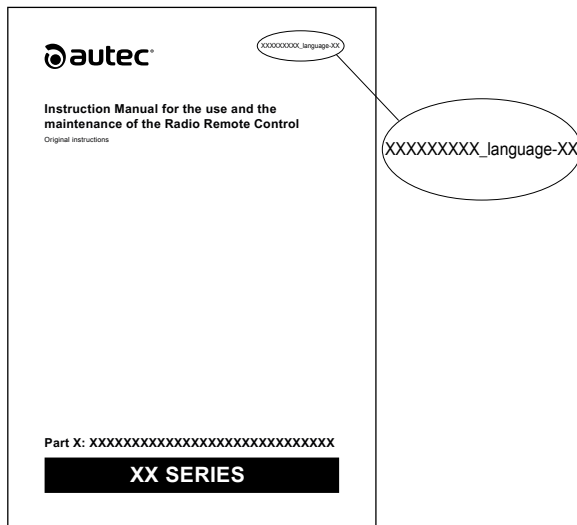
The Manufacturer of the Machine on which the Autec Radio Remote Control is installed, and the Owner and User of the Machine, must make sure that the Instruction Manual and all of its parts are included in the Instruction Manual of the Machine.



The CD attached to each Instruction Manual includes the translations of the Manual.

Act as follows to identify the single Manual parts in the relevant language in the CD:

- Choose the desired language
- Select the single parts of the Manual: refer to the code name provided on the cover of each part.



1.2 Caption and terminology



Contact Autec if any of the instructions, symbols, warnings or images are not clear and understandable.

In this part of the Manual, the terms listed below have the same meaning explained in the corresponding paragraph of the general part (Part A):

- **Unit**
- **Radio Remote Control**
- **Transmitting Unit**
- **Receiving Unit**
- **Radio link**
- **Active stop**
- **Automatic stop**
- **Manual stop**
- **Passive stop**
- **Machine**
- **Manufacturer**
- **Installer**
- **User**
- **Maintenance Technician**
- **Manual or Instruction Manual**
- **Installation manual**
- **Person**
- **Owner**

Functions indicated for the Manufacturer, the Installer, the User and the Maintenance Technician may be performed by a single Person, if he/she has the needed competence and undertakes the resulting responsibilities. Each Person must be aware of the instructions contained in the Manual, depending on the activity they carry out.

For example, if a Manufacturer is also the Installer, and/or Maintenance Technician, he/she must also know and follow the instructions specifically addressed to those Persons. The same applies, for example, if a User is also the Manufacturer and/or the Installer.

1.3 Symbols



This symbol identifies the parts of text in the Manual that must be read with special attention.



WARNING

This symbol identifies the parts of text in the Manual containing warnings, information and/or instructions that are particularly relevant with regards to safety; failure in understanding them or in complying with them may cause hazards for People and/or property.

1.4 To whom the instructions are addressed

Addressees of instructions are listed in the paragraph with the same title in the general part: please refer to that part.

1.5 Instruction storage

Regulation for the storage of instructions are described in the paragraph with the same title in the general part: please refer to that part.

1.6 Intellectual property

Restrictions connected to intellectual property are described in the paragraph with the same title in the general part: please refer to that part.

2 Brief product presentation

2.1 Series, Radio Remote Control and Unit

Autec Dynamic series' Radio Remote Controls are designed to be used on Machines and provide a command interface to their command and control system, to be used from an appropriate distance and position.

2.2 Conformity with standards

This part of the Manual describes:

- the Dynamic series' Radio Remote Control compliance with the standards, the requirements and conditions of use in each Country and
- the different frequency bands, in which the Radio Remote Control is able to operate.

2.3 Contacts and useful addresses

The Radio Remote Controls are produced by Autec Srl – Via Pomaroli, 65 - 36030 Caldogno (VI) - Italy.

You can find contacts for Autec, its distributors, dealers and authorized service centres on the website www.autecsafety.com.

2.4 Warranty

General warranty conditions are indicated both in the relevant sheet provided together with this documentation, and in the specific page on the website www.autecsafety.com.

2.5 Technical assistance and spare parts

If you need technical services and/or spare parts, please refer to contacts provided in the website www.autecsafety.com.

When applying for technical service to Autec, its distributors, dealers and authorized service centres, the Radio Remote Control's serial number is required; you can find it on the identification plate on the Transmitting Unit and/or on the Receiving Unit.

3 Conformity

Addressees of instructions must:

- Make sure that the Radio Remote Control works within the frequency band permitted in the country where it is used.
- Make sure that the Radio Remote Control works correctly, in compliance with the applicable standards in the relevant country.
- Not modify the Radio Remote Control conformity, by performing modifications or technical operations that change its operation.

During training on or usage of Autec Radio Remote Controls, local provisions imposing the conservation of product conformity with local standards must be respected, as well as specific standards related to safety in the use of Radio Remote Controls or electrical devices, both in the working environment or outside of it.

3.1 FCC conformity

A Dynamic series' Radio Remote Control working in the 915-928MHz frequency band, whose Units are listed in the following table, complies with the requirements of the standards FCC (Federal Communication Commission) Part 15.

Unit		FCC ID
ADD Receiving Unit	Model ADD Type NE022	OQA-ADDNE022
ARM Receiving Unit	Model ARM Type NC022	OQA-ARMNC022
ARM Receiving Unit	Model ARM Type NB022	OQA-ARMNB022
ARS Receiving Unit	Model ARS Type ND022	OQA-ARSND022
ARX Receiving Unit	Model ARX Type NG022	OQA-ARXNG022
CRS Receiving Unit	Model CRS Type NA022	OQA-CRSNA022
CRX Receiving Unit	Model CRX Type NH022	OQA-CRXNH022
FJB Transmitting Unit	Model FJB Type NZ422	OQA-FJBZN422
FJC Transmitting Unit	Model J2F Type NZ322	OQA-J2FNZ322
FJE Transmitting Unit	Model J7F Type NZ222	OQA-J7FNZ222
FJE Transmitting Unit	Model J7F Type NZM22	OQA-J7FNZ222
FJL Transmitting Unit	Model FJL Type NF022	OQA-FJLNF022
FJM Transmitting Unit	Model FJM Type NF022	OQA-FJMNf022
FJM Transmitting Unit	Model FJM Type NZ422	OQA-FJMNZ422
FJN Transmitting Unit	Model J2F Type NZ322	OQA-J2FNZ322
FJQ Transmitting Unit	Model J2F Type NZ322	OQA-J2FNZ322
FJQ Transmitting Unit	Model J2F Type NZ222	OQA-J2FNZ222
FJR Transmitting Unit	Model FJR Type NF022	OQA-FJRNf022
FJR Transmitting Unit	Model FJR Type NZ422	OQA-FJRNZ422
FJS Transmitting Unit	Model FJS Type NF022	OQA-FJSNF022
PCR	-	OQA-PCRNKZ22



Place the antenna of the Receiving Unit in a position that ensures a minimum separation distance of 20cm from all the people that can be in the working area.

Read carefully the section of the Manual where the antenna position is described, both in the general part and in the specific part referring to the Receiving Unit.



Autec allows you to use only the dedicated antenna supplied either with the remote control or as original spare part. The use of any other type of antenna is prohibited and will invalidate the warranty.

As required by standard FCC Part 15, the following indication is valid for all the Units listed in the previous table.

This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the User's authority to operate the equipment.

As required by standard FCC Part 15, the following indication is valid for all the Units listed in the previous table.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

3.2 IC conformity

A Dynamic series' Radio Remote Control working in the 915-928MHz frequency band, whose Units are listed in the following table, complies with the requirements of the standards IC (Industry Canada) RSS-247.

Unit		IC
ADD Receiving Unit	Model ADD Type NE022	9061A-ADDNE022
ARM Receiving Unit	Model ARM Type NC022	9061A-ARMNC022
ARM Receiving Unit	Model ARM Type NB022	9061A-ARMNB022
ARS Receiving Unit	Model ARS Type ND022	9061A-ARSND022
ARX Receiving Unit	Model ARX Type NG022	9061A-ARXNG022
CRS Receiving Unit	Model CRS Type NA022	9061A-CRSNA022
CRX Receiving Unit	Model CRX Type NH022	9061A-CRXNH022
FJB Transmitting Unit	Model FJB Type NZ422	9061A-FJBNZ422
FJC Transmitting Unit	Model J2F Type NZ322	9061A-J2FNZ322
FJE Transmitting Unit	Model J7F Type NZ222	9061A-J7FNZ222
FJE Transmitting Unit	Model J7F Type NZM22	9061A-J7FNZ222
FJL Transmitting Unit	Model FJL Type NF022	9061A-FJLNF022
FJM Transmitting Unit	Model FJM Type NF022	9061A-FJMNf022
FJM Transmitting Unit	Model FJM Type NZ422	9061A-FJMNZ422
FJN Transmitting Unit	Model J2F Type NZ322	9061A-J2FNZ322
FJQ Transmitting Unit	Model J2F Type NZ322	9061A-J2FNZ322
FJQ Transmitting Unit	Model J2F Type NZ222	9061A-J2FNZ222
FJR Transmitting Unit	Model FJR Type NF022	9061A-FJRNf022
FJR Transmitting Unit	Model FJR Type NZ422	9061A-FJRNZ422
FJS Transmitting Unit	Model FJS Type NF022	9061A-FJSNF022



Place the antenna of the Receiving Unit in a position that ensures a minimum separation distance of 20cm from all the people that can be in the working area.

Read carefully the section of the Manual where the antenna position is described, both in the general part and in the specific part referring to the Receiving Unit.



Autec allows you to use only the dedicated antenna supplied either with the remote control or as original spare part. The use of any other type of antenna is prohibited and will invalidate the warranty.

As required by the document "RSS-Gen — General Requirements and Information for the Certification of Radio Apparatus", the following indication is valid for all the Units listed in the previous table.

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

As required by the document "RSS-Gen — General Requirements and Information for the Certification of Radio Apparatus", the following indications are valid for all the Receiving Units listed in the previous table.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

This radio transmitter has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Antenna type	Antenna gain	Antenna impedance
Autec stylus $\lambda/4$	<2dBi	50 Ohm
Autec stylus $\lambda/4$ with 5m RG58	<2dBi	50 Ohm
Autec stylus $\lambda/4$ with 20m RG213/U	<2dBi	50 Ohm

4 Frequencies

Dynamic series' Radio Remote Controls can work in the 915-928MHz frequency band.



The Radio Remote Controls' working frequency is defined by market-specific laws and standards. In order for the system "Machine+Radio Remote Control" to be compliant and therefore to be used, these laws and standards must be respected: if they are not, the Radio Remote Control cannot and must not be used.

Autec cannot be held responsible if the Radio Remote Control is set with frequencies that are forbidden in the country of use.

4.1 Frequency band 915-928MHz

4.1.1 Frequencies

The radio link between the Units of Autec Dynamic series Radio Remote Controls is established at one of the frequencies permitted by the USA, Canadian and Australian standards in force when the system is put on the market.

Frequencies used	256
RF power	meets FCC and IC requirements
Channel spacing	50kHz

The Units communicate with one another in dynamic mode, that is:

- They use a working frequency in the 915-928MHz band
- They check that the frequency is free before using it
- They continuously change the working frequency in order to guarantee the radio link even in the presence of interference.

4.1.2 Countries of usage

Dynamic series' Radio Remote Controls working in the frequency band 915-928MHz can be used in the USA, Canadian and Australian markets.

Check on the technical data plate of the Units in which markets the Radio Remote Control can be used.



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