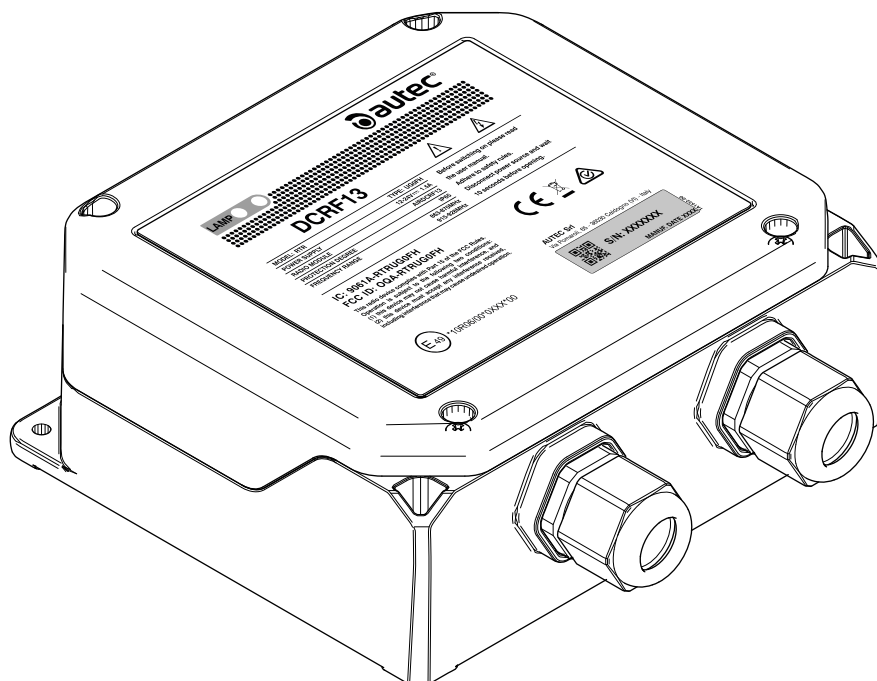


Instruction Manual for the use and the maintenance of the Radio Remote Control

Original instructions



Part D: DCRF13 (Model RTR) Receiving Unit

AIR SERIES



WARNING

THIS PART OF THE MANUAL CONSISTS OF Part D - Information, instructions and warnings for the DCRF13 (Model RTR) Receiving Unit. 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.

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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.

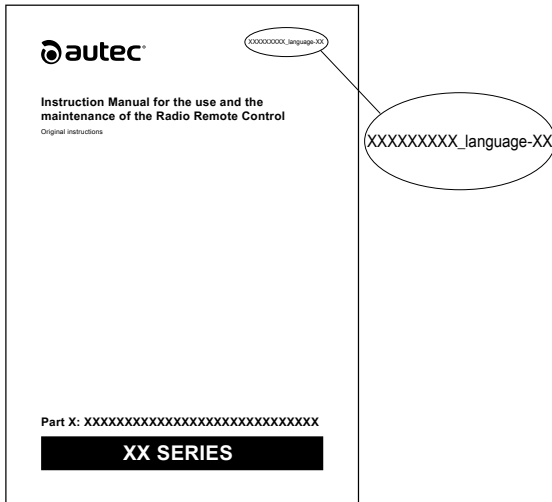
The Manufacturer of the Machine on which the Autec Radio Remote Control is installed, and the Owner and User of the Machine, must make sure that the Instruction Manual and all of its parts are included in the Instruction Manual of the Machine.



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:

- Identify the correct section depending on the Radio Remote Control serial number
- 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, or if you have doubts or questions.

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.



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 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

The object of this part of the Manual is the DCRF13 (Model RTR) Receiving Unit of an Autec Air series' Radio Remote Control.

Autec Air 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

The conformity of Radio Remote Controls with standards and with working requirements and conditions in the single Countries is provided in the related specific part "Conformity and frequencies" (Part B) of the Manual.

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

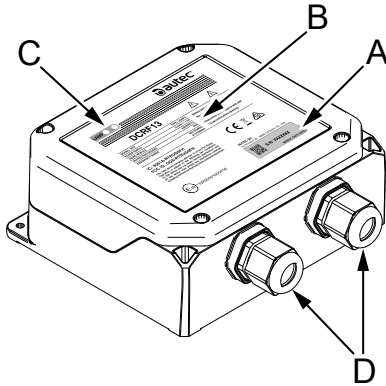
General warranty conditions are indicated both in the relevant sheet provided together with this documentation, and in the specific page on the website www.autecsafety.com.

2.5 Technical assistance and spare parts

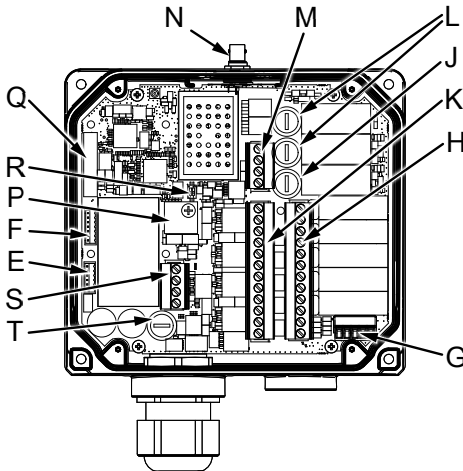
If you need technical services and/or spare parts, please refer to contacts provided in the website www.autecsafety.com.

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 Description of the Receiving Unit



A	Identification plate
B	Technical data plate
C	LAMP LED
D	Cable Gland or Plug

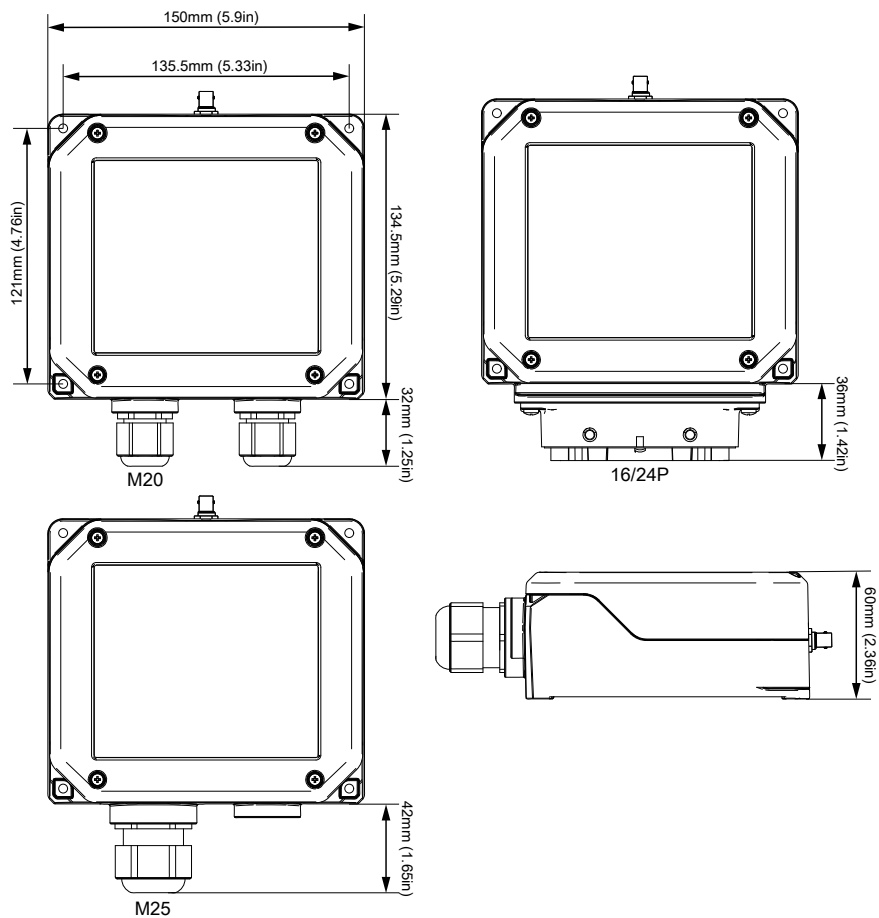


E	Connector for the cable control's wiring
F	Connector for programming
G	Digital inputs
H	Outputs of relay commands and SAFETY
J	SAFETY contact protection fuse
K	Power supply inputs and solid state commands' outputs
L	STOP contacts protection fuses
M	STOP outputs
N	TNC connector for external antenna
P	Address key (ID internal rx memory)
Q	Connector for optional card
R	DIP switches
S	Connector for power supply
T	Power supply protection fuse

4 **Technical data**

Power supply voltage	12-24V=--- (1.5A)
Power supply protection fuse	2A 250V (5x20mm T)
Digital inputs voltage	12-24V=---
External antenna	dedicated, dipole-type with RP-TNC connector
STOP contacts rated current	6A (30V=---
STOP contacts protection fuses	6A 250V (5x20mm T)
SAFETY contacts rated current	6A (30V=---
SAFETY contacts protection fuse	6A 250V (5x20mm T)
Rated current of relay commands' outputs	5A (30V=---
Rated current of solid state commands' outputs	4A (30V=---
Housing material	PA6 (30% fg)
Protection degree	IP65 (NEMA 4)
Weight	1kg (2.2lb)

	Refer to Technical Data Sheet for voltage and current rating of relay commands' outputs in the optional cards. Refer to Technical Data Sheet for voltage and current rating of solid state commands' outputs in the optional cards.
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5 Technical Data Sheet

The Radio Remote Control 's Technical Data Sheet:

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

The Technical Data Sheet must be filled in, checked and signed by the Installer, who is responsible for correct wiring.

A Technical Data Sheet must always be kept together with this Manual: if you need to use the Technical Data Sheet for administrative purposes (tests, check, etc.), make a copy of it.

	The wiring of the Receiving Unit's outputs must always reflect the wiring indicated in the Technical Data Sheet.
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6 Plates

Plate	Position	Content
Radio Remote Control identification plate	Receiving Unit's cover	Radio Remote Control serial number (S/N), QR code and manufacturing year.
Technical data plate	Receiving Unit's cover	MODEL, TYPE and main Receiving Unit technical data, marking and possible Radio Remote Control marks.

7 Light signals

The meaning of light signals illumination is described in the following paragraphs; possible actions to perform are given in chapter 11.

	Optional cards' light signals are described in the corresponding manuals.
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Signals	Meaning
The signalling LAMP LED is off.	The Receiving Unit is off.
The signalling LAMP LED blinks once every 5 seconds.	The Receiving and Transmitting Unit do not communicate.
The signalling LAMP LED blinks fast.	The Receiving Unit is ready to receive commands sent by the Transmitting Unit.

8 Operation

8.1 DIP switches

DIP switch 1 is used to set the frequency band.

DIP switch 2 shall always be set in the OFF position.



The normal position of DIP switch 2 is OFF. This position must not be modified.

8.2 Internal light signals

The activation of each output on the mother board is signalled by an LED near the output.

8.3 Command outputs

The relation between the command sent by the Transmitting Unit and the output activated on the Receiving Unit is provided in the Technical Data Sheet.

9 Installing the Receiving Unit

The chapter "Installation" in "Part A" of the Instruction Manual contains the warnings for the installation that add to those provided in this chapter. Therefore, please refer to that part of the Manual.

9.1 Warnings for the Installer

The Installer must:

- Observe and comply with all instructions and warnings provided by the Machine Manufacturer.
- Observe and comply with all instructions and warnings provided by the Person responsible for the Machine commissioning or making the Machine available for work.
- Observe and comply with all instructions and warnings provided in the Radio Remote Control Manual.
- Observe and comply with all applicable Laws, Regulations and Standards, even local.
- Operate the Autec Radio Remote Control only in accordance with this Manual and all of its Parts, and with all Autec warnings and instructions, and with applicable Laws, Regulations and Standards, even local.
- Operate the Machine operated by or through the Autec Radio Remote Control only in accordance with the Machine Manufacturer's instructions and warnings, and with applicable Laws, Regulations and Standards, even local.

- Operate the Machine operated by or through the Autec Radio Remote Control only when he is in a safe condition and can perfectly see the whole Machine's working area.
- Immediately inform his supervisors and/or the people in charge for the working place and/or for the Machine about any possible failure, damage, loosening, anomalous wear, detachment and/or any other anomaly that may cause malfunction to the Radio Remote Control and/or to the Machine, or that may cause damage to people and/or property.
- Keep the Transmitting Unit secure and out of reach of unauthorized and unqualified Personnel.



ADDITIONAL WARNINGS AND INSTRUCTIONS THAT ARE CONTAINED IN THE OTHER PARTS OF THIS MANUAL MUST BE FOLLOWED.

9.2 Positioning the antenna



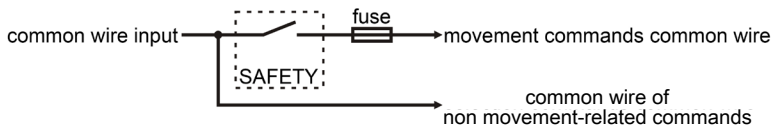
WARNING

The Receiving Unit is set up with an external antenna. The antenna is to be installed directly on the Receiving Unit's casing or using the antenna extension kit (see "Part A" in the Instruction manual).

9.3 Wiring

Pay special attention to the currents and voltages in the **SAFETY** and **STOP** outputs: they shall not exceed the maximum permitted values (see rated current of **STOP** and **SAFETY** contacts in chapter 4).

To obtain the protection from unintended movements from the rest position, connect the contact of the **SAFETY** output in series with the common of movement commands.



The **STOP** circuit in the Receiving Unit has two contacts connected in series through a wire jumper (Autec standard wiring). If the Machine needs a **STOP** circuit with two separate contacts (four wires), this bridge can be removed. In any case, the Installer is responsible for wiring in such a way as to ensure the required safety level.

If the Receiving Unit is powered with direct current, the power supply must come:

- from a power supply unit with a safety isolating transformer, or
- from a 12/24V battery.

9.4 At end of installation

Correctly close the Receiving Unit in order to maintain the protection from dust, contaminants and water:

- Make sure that the gasket is intact and correctly seated.
- Check that the housing parts correctly fit so that they overlap.
- Tighten the existing screws with a 70N·cm (6.2lbf·in) tightening torque.



10 Maintenance

Instructions for correct Radio Remote Control maintenance are described in the chapter "Maintenance" included in "Part A" of the Instruction Manual. Therefore, please refer to that part of the Manual.

11 Malfunction signalled by the Receiving Unit

The table below lists malfunctions that are signalled by LEDs on the Receiving Unit and the solution to those malfunctions.

If the problem persists after attempting the suggested solution, contact the support service of the Machine Manufacturer.

Signals	Possible reasons	Solutions
The signalling LAMP LED is off.	Wrong or no power supply.	Correctly plug in the connecting plug between the Radio Remote Control and the Machine.
		Make sure that power supply wires are correctly connected and that the power supply value is within the limits specified in the technical data.
		Check the power supply protection fuse and, if needed, replace it.
The signalling LAMP LED blinks once every 5 seconds.	The Transmitting and Receiving Unit do not communicate.	Start up the Radio Remote Control.
The signalling LAMP LED blinks fast.	The Receiving Unit does not activate the outputs of the commands sent.	Check that the outputs are correctly wired and that the commands sent activate the corresponding outputs.
		Check the protection fuse of the STOP contacts and, if needed, replace it.

12 Decommissioning and disposal

Instructions for correct decommissioning and disposal of Radio Remote Controls are described in chapter "Decommissioning and disposal" in "Part A" of the Instruction Manual. Therefore, please refer to that part of the Manual.



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