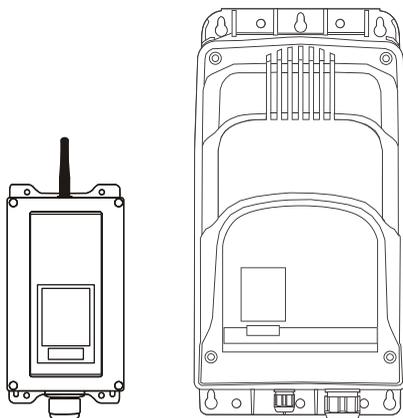




AC Receiver System
Manuale d'uso
User Manual
Betriebsanleitung
Manuel de l'utilisateur
Manual de usuario

LIE&LAU7-00



INDEX

1	Introduction to the user manual	24
1.1	General instructions	24
1.2	Conventions	24
1.3	Documentation	25
2	Radio remote controls	26
2.1	General description	26
2.2	Safety functions.....	26
2.3	Conformity.....	27
2.4	Risk analysis	27
2.5	Working conditions.....	28
2.6	General technical data	28
2.7	Identification plate and technical data plate	29
2.8	Storage.....	29
3	Receiving units.....	30
3.1	Receiving unit Type R202.....	30
3.2	Receiving unit Type R502.....	32
4	Warnings for installation	34
5	Light signals	37
5.1	External signals.....	37
5.2	Internal signals.....	37
6	Programming	38
6.1	Programming the E16SRXEU_ radio module.....	38
6.2	Programming the mother board	39
7	Warnings for maintenance	40
7.1	Routine maintenance	40
7.2	Special maintenance (AUTEC SERVICE)	41
8	Receiving unit diagnostics	42
9	Disposal	43

1.1 GENERAL INSTRUCTIONS

This manual is an integral part of the radio remote control and its safety functions and, in particular, of the radio remote control part consisting of the receiving unit, for which it provides information for its installation, use and maintenance.

This manual shall complete the instructions provided by the producer of the remote controlled machine and/or by those who install the radio remote control on the machine.

It refers to the receiving unit only: instructions regarding the use of the radio remote control are included in the transmitting unit manual.

All receiving unit installation, usage and maintenance operations can only be carried out by qualified technicians who are suitably trained with respect to the relevant norms and laws.

The radio remote control owner, installer, user, the person in charge of its maintenance and the responsible for the safety on the workplace where the radio remote control is used must therefore read and understand each part of this manual and of the transmitting unit manual.

As for instructions and warnings regarding the machine where the radio remote control is installed, follow the instructions given in the machine's manual.

No part of this manual may be reproduced, in any form or by any means, without written permission of Autec (including recording and photocopying).

Always remember that:

1. the documentation must be kept for the whole life of the radio remote control: after reading, keep it on hand for future reference
2. photos in this manual are useful examples that help understand the instructions and warnings of each radio remote control configuration
3. if necessary, contact Autec if any of the instructions and/or warnings given in this manual are not clear
4. if this manual is lost or damaged, ask Autec for a copy. Please specify the serial number of the related radio remote control.

1.2 CONVENTIONS

In this manual, all important information is highlighted through the following symbols and conventions:



abcd... : WARNINGS

abcd... : IMPORTANT TEXTS

1.3 DOCUMENTATION

Documentation enclosed with each radio remote control includes at least the following:

- transmitting unit manual
- receiving unit manual
- battery charger manual
- EC Declaration of Conformity (see paragraph 2.3)
- certificate of guarantee
- technical data sheet
- enclosure "Limitations & Authorisations" (see paragraph 2.3).

When purchasing a radio remote control, always make sure that all such documents have been supplied: if they are not, please ask for them to Autec specifying the radio remote control serial number.

Certificate of guarantee

Guarantee terms and conditions for the radio remote control are stated in the "Certificate of guarantee".

Technical data sheet

The technical data sheet shows the wiring diagram between the receiving unit and the machine. The technical data sheet must be filled in, checked and kept updated by the installer, who is responsible for correct wiring. Once the necessary checks have been carried out, the installer must undersign the technical data sheet, which must be kept with the user manual (always keep a copy of this data sheet for administrative purposes).

2 RADIO REMOTE CONTROLS

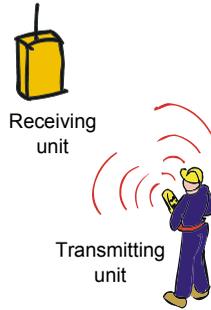
2.1 GENERAL DESCRIPTION

Autec industrial radio remote controls are used to control machines from a distance, without physical connection between the user and the machine (i.e. wires or connecting cables). Each industrial radio remote control consists of a portable transmitting unit, from which the user can remotely control the machine, and a receiving unit installed on board the machine itself.

The transmitting unit, through a radio transmission, sends coded messages that contain commands that will be carried out by the machine. Each message contains an address that is: unique (Autec produces it only once), univocal (specific for each radio remote control) and not reproducible. The receiving unit can only decode the messages coming from its own transmitting unit with the same address.

If the radio transmission is disturbed, incorrect or interrupted, the receiving unit autonomously stops the whole system thanks to the passive stop feature.

These features of the radio remote control avoid the possibility of an interference from another radio equipment (e.g. a radio remote control) activating any system function.



2.2 SAFETY FUNCTIONS

Autec radio remote controls are equipped with some functions that provide high safety levels, in order to safeguard the safety of people and things.

Active stop

“Active stop” is a command that is activated by the STOP pushbutton (see transmitting unit manual) and is sent by the transmitting unit to the receiving unit in order to immediately stop the machine if the machine needs to be stopped to avoid possible hazards of damage to people and/or properties.

This function boosts the machine safety, so that the machine stops in less time than the time needed for stopping with the “passive stop” (see paragraph 2.6).

Passive stop

The “passive stop” is a function that will cut in should a fault occur during operation. Should the radio link be disturbed, incorrect or interrupted, the receiving unit autonomously and automatically stops the radio remote control features.

The activation time (see paragraph 2.6) of such function can be set (see paragraph 6.1).

Protection against unintended movements from the standstill position (UMFS)

This safety function protects the system “machine+radio remote control” from unintended movements, namely machine movements not activated intentionally by the user, but resulting from possible electrical and mechanical failure of the radio remote control.

Such safety function constantly checks the neutral (rest) position of those actuators that drive the machine’s movements. Each time one of those actuators is operated, the transmitting unit sends not only the movement command but also the “SAFETY” movement command. This command activates the SAFETY relay in the receiving unit; such relay must be wired as explained in the wiring instructions provided on the technical data sheet (see paragraph 1.3) and the instructions for correct installation and maintenance provided in this manual.

2.3 CONFORMITY

Each radio remote control is in conformity with the R&TTE Directive 99/05/CE and its essential safety requirements.

Each radio remote control is also in conformity with the standards given in the EC Declaration of Conformity that is enclosed with this manual.

Limitations & Authorisations



The radio remote control shall be used in compliance with the laws and regulations in force in the Country where it is used. In particular, when installing and using the radio remote control, national laws that regulate the following aspects must be respected:

- the use and/or possession of a radio remote control
- the use of working frequencies that are not yet harmonised in some European countries, that is, frequencies that are not used uniformly within the European Union.

All the indications regarding the use and possession of a radio remote control and the permitted frequencies can be found in the document “Limitations & Authorisations”, which is included in the product’s documentation.

2.4 RISK ANALYSIS

Autec industrial radio remote controls are intended to be used on hoisting and material handling machines (i.e. cranes, overhead cranes).

As provided by the Machinery Directive and its subsequent amendments and additions, when installing the radio remote control the machine producer or those who install the radio remote control on the machine must carry out a specific risk analysis. Such analysis aims at deciding if the machine, for its structural and/or functional features, can be operated by means of a radio remote control system.

In particular, the developer and/or the machine producer that plans to equip it with a radio remote control, or the installer of the radio remote control on the machine, are responsible for evaluating if installing a radio remote control may generate risks for the safety of people and/or properties, and shall evaluate in advance whether the machine may be remote controlled.

All instructions and warnings provided in this manual must be taken into account when carrying out the risk analysis and when setting out protection measures and safety systems for the controlled machine.

The machine producer and/or the person who decides upon radio remote control use and installation is responsible for this analysis.

Autec shall not be held liable if this risk analysis is not carried out correctly.

Forbidden uses



Forbidden applications are:

- machines installed in areas where equipment with explosion-proof characteristics is required and/or
- machines for moving, raising and transporting people.

Autec shall not be held liable if the radio remote control is installed on forbidden applications.

2.5 WORKING CONDITIONS

To guarantee correct radio remote control operation, all current regulations regarding safety at work and accident prevention should be respected. All applicable standards and regulations valid in the user country regarding the use of both the machine and the radio remote control must always be respected.

In particular, users of the remote controlled machine must be preventively and properly trained about the use of the machine, the radio remote control and the implemented safety and emergency features.

Autec shall not be held liable if the radio remote control is used in working conditions that do not meet the legislative provisions in force in the country where the device is used.

2.6 GENERAL TECHNICAL DATA

Frequency band with radio module E16SRXEU1 ^a	434.040 - 434.790 MHz
.....	or 433.050 - 434.790 MHz
Frequency band with radio module E16SRXEU2.....	869.700 - 870.000 MHz
Available radio channels.....	16 (434.040 - 434.790 MHz)
.....	32 (433.050 - 434.790 MHz)
.....	12 (869.700 - 870.000 MHz)
Channel spacing.....	25 kHz
Hamming distance.....	≥ 8
Probability of undetected error	< 10 exp-11
Typical working range.....	100 m
Command response time	~ 100 ms
Active stop time ^b	~ 100 ms
Passive stop time ^c	0.35/1 s

a. Refer to the enclosure "Limitations & Authorisations" to select the permitted working band and to chapter 6 if setting is necessary.

b. Valid when the radio link between transmitting and receiving unit is not disturbed.

c. Refer to paragraph 6.1, DIP No. 1 setting.



Due to the characteristics of radio propagation (i.e.: EM interferences, near out-of-range condition), a delay up to one second may occasionally occur from the moment a command in the transmitting unit is released to the moment its corresponding output in the receiving unit is deactivated. Those who decide upon the installation of the radio remote control must make sure that this delay never leads to a dangerous situation in the specific uses.

2.7 IDENTIFICATION PLATE AND TECHNICAL DATA PLATE

Autec radio remote controls' identification and approval data are given on plates that are on both the transmitting unit and the receiving unit.

These two plates are on the cover of the transmitting unit.

These plates must not be:

- removed from their position (removal will invalidate the guarantee)
- altered or damaged (contact Autec for replacement).

2.8 STORAGE

Radio remote controls must be stored inside their original packing until they are installed on the machine.

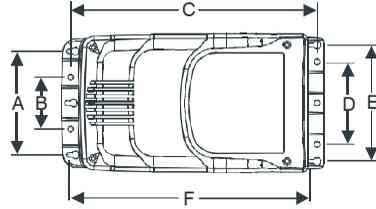
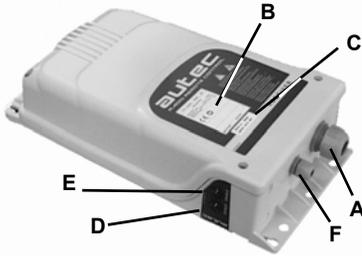
Environmental storage conditions are given in the relevant table (see chapter 3).

3 RECEIVING UNITS

The receiving units Type R202 and Type R502 can be used with the transmitting units of the following series:

- E16 series
- Light series
- Modular series

3.1 RECEIVING UNIT TYPE R202



A	cable gland (<i>opt. plug</i>)
B	technical data plate
C	identification plate
D	POWER light
E	ENABLE light
F	output for the antenna coaxial cable or for the blinker (<i>if present</i>)

Drilling template

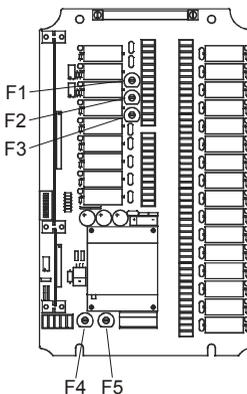
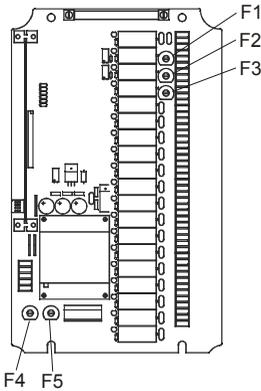
- A=150 mm
- B=75 mm
- C=357.5 mm
- D=118.5 mm
- E=167 mm
- F=350.5 mm

The mother boards on this type of receiving unit may be:

- E16B16AC for configurations up to 16 commands
- E16B22AC for configurations up to 22 commands (and extension card).

E16B16AC

E16B22AC



F1	STOP circuit protection fuse
F2	SAFETY circuit protection fuses
F3	
F4	POWER SUPPLY protection fuses
F5	

Receiving unit type R202 technical data
Power supply

	MIN.	NOM.	MAX.
Voltage (Vac)	19	24	29
	38	48	58
	44	55	66
	88	110	132
	184	230	250
Frequency (Hz)	50		60
Absorbed power (VA)		15	

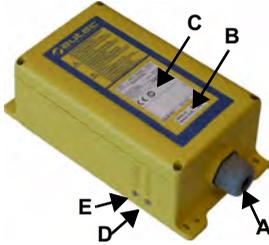
Antenna	integral or dedicated
STOP contact rated current.....	4 A (250 Vac)
SAFETY contact rated current.....	4 A (250 Vac)
Command contact rated current ^a	10 A (250 Vac) ^b
Fuse F1 (STOP circuit).....	4 A T 250 V (5x20 mm)
Fuse F2 and F3 (SAFETY circuit)	4 A T 250 V (5x20 mm)
Fuse F4 and F5 (POWER SUPPLY)	1 A T 250 V (5x20 mm)
Housing	nylon (20% fg)
Protection degree	IP65
Dimensions.....	202 x 381 x 91 mm
Weight	3.5 kg

- a. The rated current of commands contacts for the optional modules that may be present is indicated in the technical data sheet.
- b. This rated current is only valid if both terminals are used for each contact. If the radio remote control outputs have been cabled by Autec, please see technical data sheet.

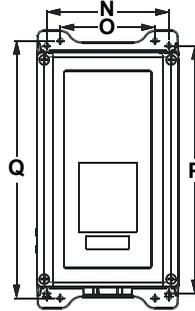
Climatic conditions

	Temperature	Relative Humidity	Air Pressure
Working	Class 4K4H -20°C to +70°C	Class 4K4H 4% to 100%	Class 4K4H 86 kPa to 106 kPa
Storage	Class 1K5 -40°C to +70°C	Class 1K3 5% to 95%	Class 1K4 86 kPa to 106 kPa
Transportation	Class 2K3 -25°C to +70°C	Class 2K3 95%	Class 2K3 70 kPa to 106 kPa

3.2 RECEIVING UNIT TYPE R502



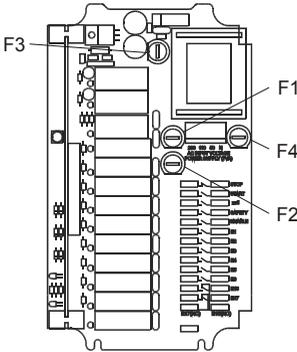
A	cable gland (<i>opt. plug</i>)
B	identification plate
C	technical data plate
D	POWER light
E	ENABLE light



Drilling template

- N=106 mm
- O=82 mm
- P=213.5 mm
- Q=222 mm

The mother board in this receiving unit is the E16B10AC.



F1	STOP circuit protection fuse
F2	SAFETY circuit protection fuse
F3	POWER SUPPLY protection fuses
F4	

Receiving unit type R502 technical data

Power supply

	MIN.	NOM.	MAX.
Voltage (Vac)	40	50	60
	88	110	132
	184	230	250
Frequency (Hz)	50		60
Absorbed power (VA)		7	

Antenna	dedicated
STOP contact rated current	4 A (250 Vac)
SAFETY contact rated current	4 A (250 Vac)
Command contact rated current	6 A (250 Vac) ^a
Fuse F1 (STOP circuit)	4 A T 250 V (5x20 mm)
Fuse F2 (SAFETY circuit)	4 A T 250V (5x20 mm)
Fuses F3 and F4 (POWER SUPPLY)	0.5 A T 250 V (5x20 mm)
Housing	PA 6 (20% fg)
Protection degree	IP65
Dimensions	123 x 202 x 83 mm
Weight	2 kg

a. If the radio remote control outputs have been cabled by Autec, please see technical data sheet.

Climatic conditions

	TEMPERATURE	RELATIVE HUMIDITY	AIR PRESSURE
WORKING	Class 4K4H -20°C to +70°C	Class 4K4H 4% to 100%	Class 4K4H 86 kPa to 106 kPa
STORAGE	Class 1K5 -40°C to +70°C	Class 1K3 5% to 95%	Class 1K4 86 kPa to 106 kPa
TRANSPORTATION	Class 2K3 -25°C to +70°C	Class 2K3 95%	Class 2K3 70 kPa to 106 kPa

4 WARNINGS FOR INSTALLATION



The radio remote control can only be installed and tested by competent staff, that masters the technical knowledge required to carry out such procedure and are qualified according to the regulation of the country where the radio remote control is mounted.

The installer must always respect the following warnings:



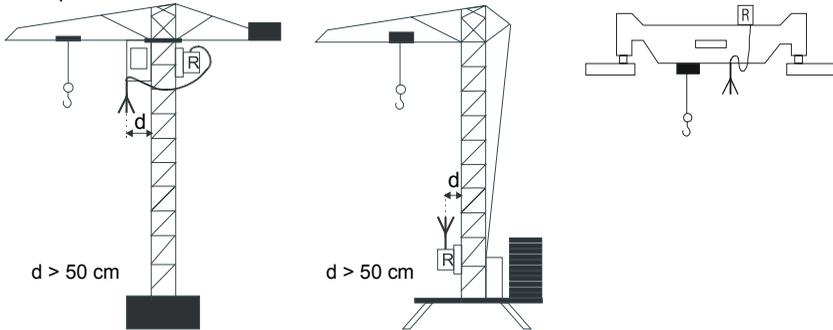
Place the receiving unit vertically, with the cable gland (or plug) facing down.



Install the receiving units so that shields, structures or materials do not obstruct the radio link; in particular:

- the receiving unit must not be shielded by metal objects
- the antenna stylus must in any case be placed at least 50 cm far from metal objects or structures.

Examples



WARNING: If the receiving unit is covered by metal structures or installed inside metal cabinets, use the appropriate extension kit for the antenna. In this case, install the antenna in a vertical position, and possibly place it near the work area.

If this warning is disregarded, the typical working range of the radio remote control may be reduced.

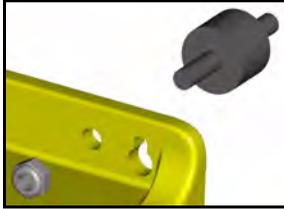


Place the receiving unit so that it can be easily reached in case of need.



Fix the receiving unit in four points, using the specific holes in the housing.

When installing on machines that vibrate, it is recommended to fix the receiving unit to the machine with the appropriate vibration dampers.



Fix the receiving unit Type R502 to the machine with its appropriate vibration dampers.



Do not modify or tamper with the radio remote control, the machine or its electrical panel. Do not perforate the receiving unit in any case.



Check that the receiving unit power supply is within the voltage limits given in the technical data, and that voltages and currents being used when working with the radio remote control do not exceed the values provided in the technical data (see chapter 3).

Pay special attention to the currents flowing in the contacts of Stop and Safety relays: they shall not exceed the maximum permitted values. Do not in any case modify the values of the corresponding protection fuses.



Make sure that during installation the safety mechanisms on the radio remote control and/or in the machine have not been made ineffective by possible procedures carried out.



Respect and enforce the provisions of the EN60204-32 (for hoisting machines) and/or EN60204-1 regulations (for machines).

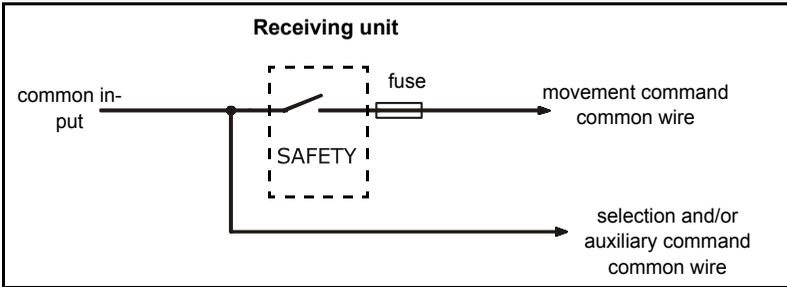


The power supply of the receiving unit must have a switch that allows power supply disconnection during installation, wiring and/or maintenance operations. Connect the receiving unit immediately downstream of the machine main switch or of the electrical panel main switch.



Remember to carefully wire the contact of the SAFETY relay inside the receiving unit in series with the common of all and only the movement commands, but not with the common for all other functions (i.e. selection, auxiliary commands).

Wiring example



Group the wiring away from the radio modules in order to avoid interferences and hazards related to electrical safety.



The receiving unit relay outputs are designed to control high current loads. Contacts of these outputs are protected through overvoltage suppressors (varistors) in order to ensure the longest lifetime in most applications.

In case an inductive load is driven through a DC source (i.e. solenoid valves, relays) it is recommended to add a diode connected in anti-parallel with the load, to further reduce effects of overvoltage.

Mother board's suppressors connected in parallel with the relay contacts may conflict with the connection to a high impedance load (i.e. some PLCs). Please contact Autec to carry out the installation correctly.



After installation and wiring, test the system "machine+radio remote control", and check that the operations carried out correspond exactly to the commands sent (in particular check the STOP command).



In case of malfunction, disable the system "machine+radio remote control" until the problem has been completely solved.



At the end of installation, correctly close the receiving unit so that the protection degree from dust and water is not jeopardised: check that the gasket is intact, correctly put the housing parts one over the other so that they overlap, and screw in the screws.



In order to close the receiving unit, first tighten the two upper screws and then the two lower ones.

The installer must check and complete the "Technical Data Sheet" in all its parts, adding the date the system has been put into service, his stamp and signature.

5 LIGHT SIGNALS

5.1 EXTERNAL SIGNALS

Each receiving unit has some light signals indicating its working status:

Type R202



Type R502

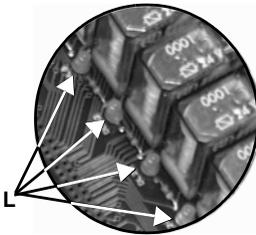


Signal type	Meaning
POWER light (A) switched off	Receiving unit is not powered
POWER light (A) switched on	Receiving unit is powered (POWER ON)
ENABLE light (B) switched on	Radio link between transmitting and receiving unit is present (ENABLE ON)

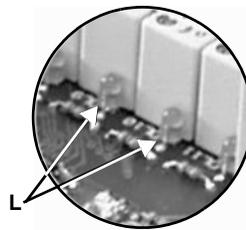
5.2 INTERNAL SIGNALS

The activation of each relay on the mother board is signalled by an LED (L) near the relay.

Type R202



Type R502



Three LEDs are present on the E16SRXEU_ radio receiving module that indicate:

1. power supply on
2. radio link on
3. frequency scanning search



6 PROGRAMMING

The DIP switches must be programmed when the receiving unit is not powered. Programming can only be carried out by authorised personnel.

For the correct functioning, the group of 8 DIP switches (excluding DIP 1) for the radio module E16STXEU_ in the transmitting unit and E16SRXEU_ in the receiving unit must be set in the same way.

At the end of programming, correctly close the receiving unit so that the protection degree from dust and water is not jeopardised: check that the gasket is intact, correctly put the housing parts one over the other so that they overlap, and screw in the screws.

6.1 PROGRAMMING THE E16SRXEU_ RADIO MODULE

The group of eight DIP switches located on the radio module are used to program some functions and set the working frequency.



DIP	MODULE	STATUS	FUNCTION
1	E16SRXEU_	ON	Stop after 0.35 seconds with invalid radio signal
		OFF	Stop after 1 second with invalid radio signal
2 ^a	E16SRXEU_	ON	Deactivation of low battery warning from horn on machine
		OFF	Activation of low battery warning from horn on machine
3	E16SRXEU1	ON	If DIP 8 is OFF, automatic scan of the frequencies in the band 433.05 - 434.04 MHz
		OFF	If DIP 8 is OFF, automatic scan of the frequencies in the band 434.04 - 434.79 MHz
	E16SRXEU2	ON	DO NOT USE
		OFF	If DIP 8 is OFF, automatic scan of the frequencies in the band 869.70 - 870.00 MHz
3-7	E16SRXEU_	ON/OFF	If DIP 8 is ON see "Appendix: Frequency Table"
8	E16SRXEU_	ON	Manual selection mode of the frequencies using DIP 3 - DIP 7 (refer to "Appendix: Frequency Table")
		OFF	Automatic scan mode of the frequencies in the band selected by DIP 3 (DIP 4 - DIP 7 indifferent)

a. For the MK12 transmitting unit this DIP switch must be in the ON position.

All DIP switches in the group of four shall always be set to the OFF position.

6.2 PROGRAMMING THE MOTHER BOARD

DIP switch programming has to correspond to that indicated in the technical data sheet. DIP switches on the mother boards E16B16AC and E16B22AC program some functions of the radio remote control, as explained in the following tables.

PROGRAMMING THE E16B16AC MOTHER BOARD

DIP SWITCH	SEL. POS.	FUNCTION
1	ON	E8 activates also E7
	OFF	disabled function
2	ON	E10 activates also E9
	OFF	disabled function
3	ON	E3 held by E2 (or E1) and E4 by E3 ^a
	OFF	disabled function
4	ON	E7 held by E5 (or E6) and E8 by E7 ^a
	OFF	disabled function

- a. Once E4 and E3 have been activated after E2 or E1 (and therefore held by E2 or E1), they can be easily disabled by activating them in the reverse order. The same applies for E8 and E7 with E5 (or E6).

PROGRAMMING THE E16B22AC MOTHER BOARD

DIP SWITCH	SEL. POS.	FUNCTION
1	ON	E10 activates also E9
	OFF	disabled function
2	ON	E12 activates also E11
	OFF	disabled function
3	ON	E14 activates also E13
	OFF	disabled function
4	ON	E16 activates also E15
	OFF	disabled function
5	ON	E18 activates also E17
	OFF	disabled function
6	ON	E20 activates also E19
	OFF	disabled function
7	ON	E3 held by E2 (or E1) and E4 by E3 ^a
	OFF	disabled function
8	ON	E7 held by E5 (or E6) and E8 by E7 ^a
	OFF	disabled function

- a. Once E4 and E3 have been activated after E2 or E1 (and therefore held by E2 or E1), they can be easily disabled by activating them in the reverse order. The same applies for E8 and E7 with E5 (or E6).

7 WARNINGS FOR MAINTENANCE

The following instructions provide information to safely carry out routine and special maintenance operations for the radio remote control.

They shall be completed by:

- instructions provided by the machine producer
- directions provided by the installer of the radio remote control on the machine
- regulations regarding safety at work and accident prevention in force in the country where the radio remote control is used.

All fine-tuning, checking and maintenance actions carried out on the radio remote control shall be verified and recorded by the person in charge of carrying out maintenance on the machine.



In case of failure, emergencies or damaged parts, disable the system “radio remote control+machine” until the problem has been completely solved.



At the end of maintenance, correctly close the receiving unit so that the protection degree from dust and water is not jeopardised: check that the gasket is intact, correctly put the housing parts one over the other so that they overlap, and screw in the screws.



In order to close the receiving unit, first tighten the two upper screws and then the two lower ones.



When maintenance is carried out on the machine (i.e. when soldering), disconnect the power supply by disconnecting all electric connections (both during installation and during normal operation).

7.1 ROUTINE MAINTENANCE

Routine maintenance consists of operations needed to preserve the radio remote control normal usage conditions, thus implementing fine-tuning, checks, planned replacement actions that necessarily arise from the normal use of the product.

All given instructions must be followed correctly at each commissioning, that is:

- whenever the radio remote control and/or the machine is installed or assembled,
- whenever the machine location/position changes (i.e. when the building site of a crane moves)
- after special maintenance.



Routine maintenance carried out as described in this manual is fundamental for using the radio remote control safely.

Special applications may need more specific routine maintenance actions to be carried out at different periods (i.e. if the working environment is particularly dirt, or in case of heavy application or if it is used very frequently, some maintenance actions may be required more frequently, depending on the decision of the person in charge for safety).

Three-month maintenance

1. Remove dust or accumulations of other material from the receiving unit: never use solvents or flammable/corrosive materials for cleaning, and do not use high-pressure water cleaners or steam cleaners
2. Check structural integrity of the receiving unit.

3. Check that the wiring of the receiving unit is intact and connected.
4. Make sure that the panel symbols can be easily recognised and replace the panel if necessary
5. Check that the identification plate and the technical data plate are readable and not damaged.

Half yearly maintenance

1. Make sure that all the relay contacts of the receiving unit operate correctly, and check that the contact closes when the corresponding manoeuvre is enabled and opens when the manoeuvre is disabled
2. Check the correct correspondence between the commands that are sent and the manoeuvres that are carried out by the machine.
3. Check that the contact of the Safety relay is open when no movement command has been sent. This is safety critical maintenance: it is necessary to keep a record (date, signature, comments) showing that this check has been regularly carried out. Keep the record together with other installation documents.

7.2 SPECIAL MAINTENANCE (AUTEC SERVICE)

Special maintenance consists of repairs needed due to radio remote control failure, damage or malfunction, carried out with the aim of restoring the original usage and working conditions.



Always ensure that the receiving unit has been disconnected from the power source before carrying out any special maintenance work.



Any fault should be repaired by authorised personnel (contact Autec Service), using original Autec spare parts only.



After each special maintenance action, always make sure that commands sent by the transmitting unit only activate the corresponding expected operations.

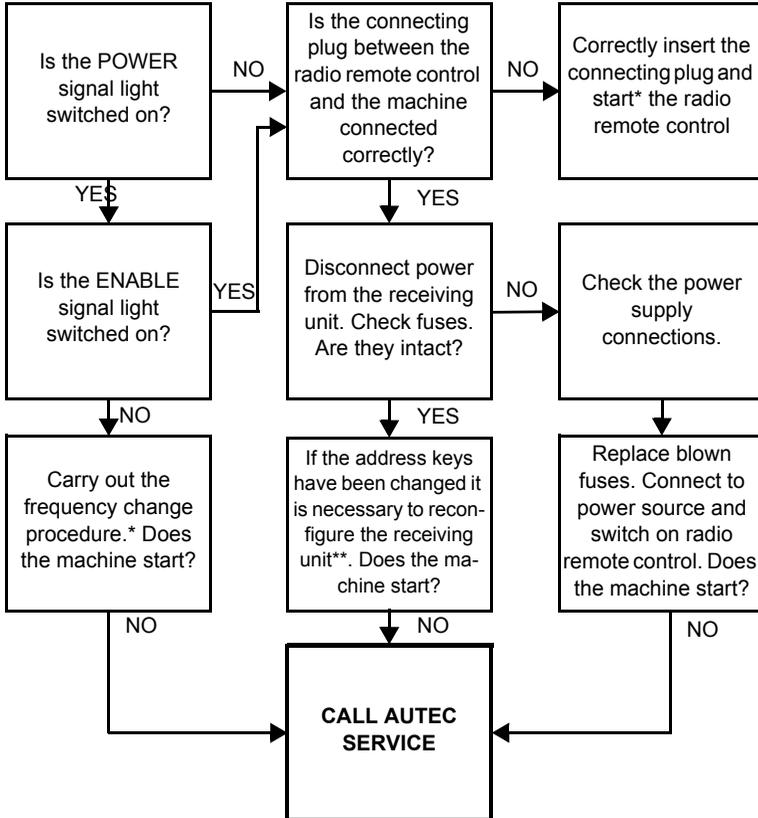
It is recommended to read and understand all parts of this manual, and make sure that all the instructions it contains have been followed correctly before contacting the Autec Service.

The following radio remote control data must be communicated in order to make interventions faster and more reliable:

- serial number
- purchase date (given on the certificate of guarantee)
- description of the problem found
- address and telephone number of the place where the device is being used (with the name of the person to contact)
- local supplier.

8 RECEIVING UNIT DIAGNOSTICS

Diagnostics aims at checking that the radio remote control works properly. These procedures can only be carried out with the transmitting unit close to the receiving unit. If the system “machine+radio remote control” does not start, check if the problem is caused by the radio remote control or the machine. Therefore, before carrying out any verification connect the cable control unit: if the machine does not start, the problem lies with the machine. If, on the other hand, the machine only starts using the cable control unit, the problem lies with the radio remote control. In this case, follow the diagnostics procedure of the transmitting unit and then proceed as follows:



* See the transmitting unit manual.

** If the address keys (E16SCHEU_) have been replaced, do the following:

1. check that the transmitting unit is off and the receiving unit is powered
2. switch on and start up the transmitting unit
3. press the START pushbutton and do not release it for at least 5 seconds.

9 DISPOSAL

When disposing of a radio remote control, give it to the waste separate collecting services in the user's country.

Please pay particular attention when recycling the batteries, applying local rules. Do not throw them away with domestic trash.

Appendix: FREQUENCY TABLE

433.050 - 434.790 MHz

MHz	DIP SWITCH						MHz	DIP SWITCH					
	3	4	5	6	7	8		3	4	5	6	7	8
433.125	ON	OFF	OFF	OFF	OFF	ON	434.100	OFF	OFF	OFF	OFF	OFF	ON
433.200	ON	OFF	OFF	ON	OFF	ON	434.125	OFF	OFF	OFF	ON	OFF	ON
433.250	ON	OFF	OFF	OFF	ON	ON	434.150	OFF	ON	ON	ON	OFF	ON
433.325	ON	ON	ON	OFF	ON	ON	434.225	OFF	OFF	ON	OFF	ON	ON
433.400	ON	ON	OFF	OFF	OFF	ON	434.300	OFF	ON	OFF	ON	ON	ON
433.425	ON	ON	OFF	ON	OFF	ON	434.325	OFF	ON	OFF	OFF	OFF	ON
433.475	ON	ON	OFF	OFF	ON	ON	434.350	OFF	ON	OFF	ON	OFF	ON
433.500	ON	ON	ON	ON	ON	ON	434.375	OFF	OFF	OFF	OFF	ON	ON
433.575	ON	OFF	OFF	ON	ON	ON	434.400	OFF	ON	ON	OFF	ON	ON
433.625	ON	OFF	ON	OFF	OFF	ON	434.475	OFF	OFF	ON	ON	ON	ON
433.700	ON	OFF	ON	ON	OFF	ON	434.500	OFF	OFF	ON	OFF	OFF	ON
433.775	ON	ON	OFF	ON	ON	ON	434.525	OFF	OFF	ON	ON	OFF	ON
433.825	ON	OFF	ON	OFF	ON	ON	434.600	OFF	ON	OFF	OFF	ON	ON
433.900	ON	ON	ON	OFF	OFF	ON	434.675	OFF	OFF	OFF	ON	ON	ON
433.950	ON	OFF	ON	ON	ON	ON	434.700	OFF	ON	ON	OFF	OFF	ON
434.025	ON	ON	ON	ON	OFF	ON	434.725	OFF	ON	ON	ON	ON	ON

869.700 - 870.000 MHz

MHz	DIP SWITCH					
	3	4	5	6	7	8
869.7125	OFF	OFF	OFF	OFF	OFF	ON
869.7375	OFF	OFF	OFF	ON	OFF	ON
869.7375	OFF	OFF	OFF	ON	ON	ON
869.7625	OFF	OFF	OFF	OFF	ON	ON
869.7875	OFF	ON	OFF	OFF	OFF	ON
869.8125	OFF	ON	OFF	ON	ON	ON
869.8125	OFF	ON	OFF	ON	OFF	ON
869.8375	OFF	ON	OFF	OFF	ON	ON
869.8625	OFF	OFF	ON	OFF	OFF	ON
869.8875	OFF	OFF	ON	ON	ON	ON
869.8875	OFF	OFF	ON	ON	OFF	ON
869.9125	OFF	OFF	ON	OFF	ON	ON
869.9375	OFF	ON	ON	OFF	OFF	ON
869.9625	OFF	ON	ON	ON	ON	ON
869.9625	OFF	ON	ON	ON	OFF	ON
869.9875	OFF	ON	ON	OFF	ON	ON



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