Operational Description for Type R402 Model 156D receiving unit

1 Identification of the unit

Type	**R402**
Model	**156D**
Configurations	**C02 and C12**
Equipment	**remote control receiving unit**
Receiving radio module	**E16SRXUS1**
Used frequency band	**902 - 928 MHz**
FCC Identifier	**OQA-R402156D**
Manufacturer	**AUTEC srl Via Pomaroli, 65 I-36030 CALDOGNO (VI)**

where:
TYPE: identifies type of unit (transmitting, receiving or transceiving), type of casing and used electronic modules.
MODEL: differentiates power supply, type of actuators and radio frequency band
CONFIGURATION: refers to the specific set of components and accessories of the unit

2 Difference between the units

There are some Configurations which differ each other for the used extension interface (card) and for the used antenna:

Configuration C01:
- embedded antenna

Configuration C02:
- antenna with stylus and with a cable 1 - 5 metres

Configuration C03:
- E16RI02A bus board
- embedded antenna
- no extension interface (card)

Configuration C04:
- E16RI02A bus board
- antenna with stylus and with a cable 1 - 5 metres
- no extension interface (card)

Configuration C05:
- E16RI02A bus board
- embedded antenna
- converter d/a extension interface (card) E16RIV15

Configuration C06:
- E16RI02A bus board
- antenna with stylus and with a cable 1 - 5 metres
- converter d/a extension interface (card) E16RIV15

Configuration C07:
- E16RI02A bus board
- embedded antenna

- converter d/a extension interface (card) E16RIV4A

Configuration C08:
- E16RI02A bus board
- antenna with stylus and with a cable 1 - 5 metres
- converter d/a extension interface (card) E16RIV4A

Configuration C09:
- E16RI02A bus board
- embedded antenna
- converter d/a extension interface (card) E16RIV1A

Configuration C10:
- E16RI02A bus board
- antenna with stylus and with a cable 1 - 5 metres
- converter d/a extension interface (card) E16RIV1A

Configuration C11:
- E16RI02A bus board
- embedded antenna
- converter d/a extension interface (card) E16RIR4A

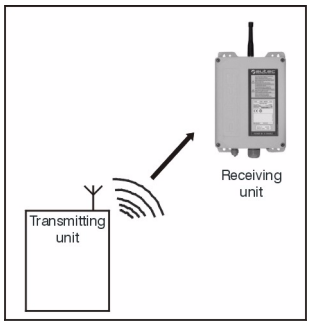
Configuration C12:
- E16RI02A bus board
- antenna with stylus and with a cable 1 - 5 metres
- converter d/a extension interface (card) E16RIR4A

Configuration C13:
- E16RI02A bus board
- embedded antenna
- converter d/a extension interface (card) E16RI01A

Configuration C14:
- E16RI02A bus board
- antenna with stylus and with a cable 1 - 5 metres
- converter d/a extension interface (card) E16RI01A (card) E16RIR8A

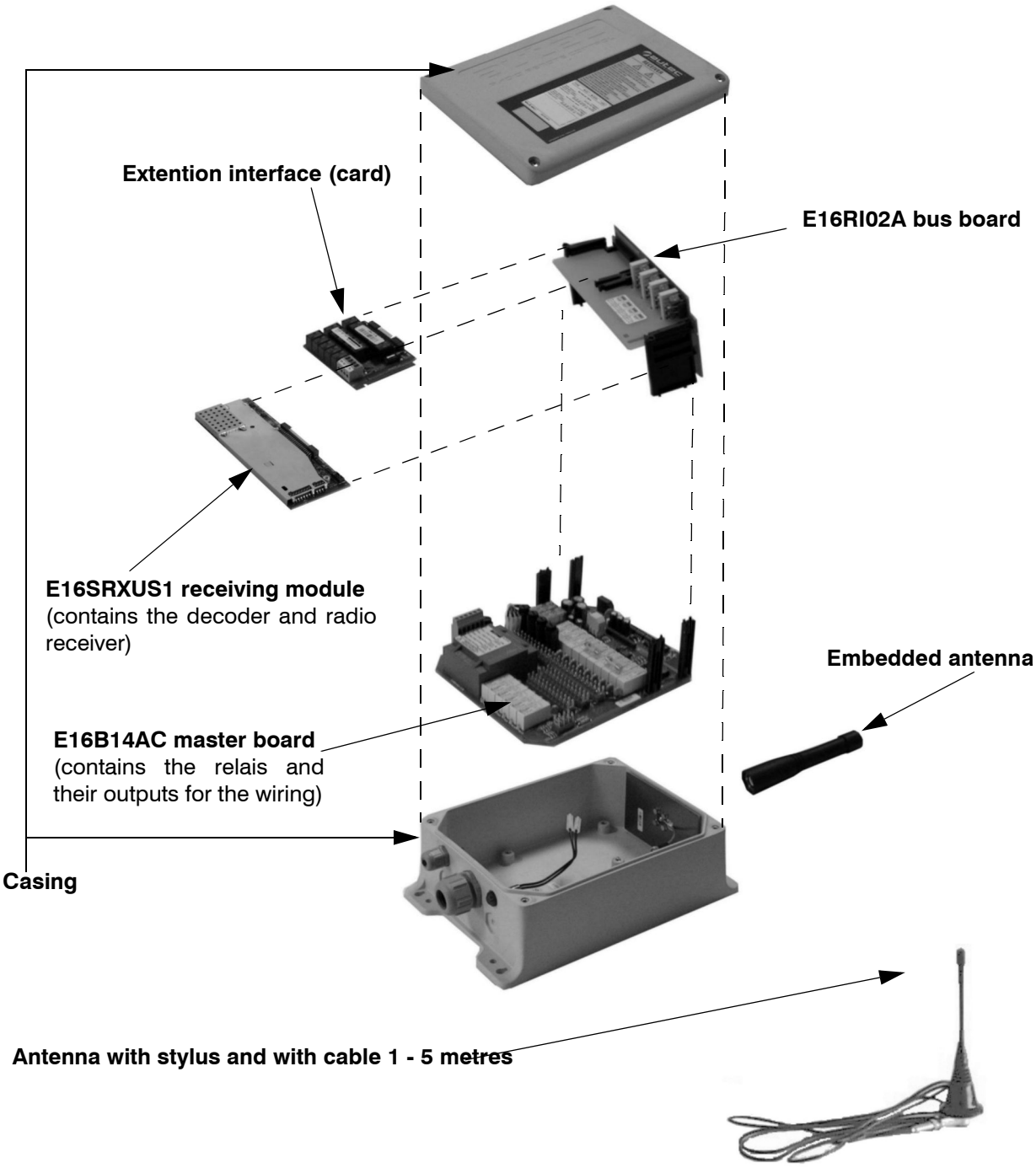
3 Operational description

Industrial radio remote controls are used to command machines from a distance.
Each industrial radio remote control is made up 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 receiving unit contains E16SRXUS1. It is the radio receiving module.
A double conversion supeheterodyne radio circuit demodulates the tuned carrier (32 different frequencies in the 902-928 MHz band, channel spacing 25 kHz) and so recovers the data telegram to be decoded by a following logic section. Decoding is performed with two-channel redundancy, so as to achieve protection against single faults; if both channels recognize a telegram containing the same address stored in the "address key" EEPROM, then commands encoded on the telegram are output to be used for relay driving. Relays are housed on E16B14AC master board, together with a suitable power supply section *(for details see relative block diagrams).*
Telegrams coming from a transmitter with address different from that stored in the "address key", as well as any other radio noise, will be discarded; the receiver will automatically bring the system to safe state (no command output) if no valid signal is received for more than 0.35 or 1 sec (user selectable).

4 Exploded view



5 Technical data E16SRXUS1 receiving radio module

Used frequency band	**902 - 928 MHz**
Type of modulation	**2200 - 2600 Baud GFSK**
Channel spacing	**25 kHz**
Sensitivity	**-116 dBm (SINAD > 12 dB)**
Type	**superheterodine (double conversion)**
Duty cycle	**up to 100 % (continuous duty), depends on user's need**
Duplex direction	**simplex**
Antenna type	**embedded ***
Data telegram	**132 bit**
Hamming distance	**> 8**
Probability of non-recognition of error	**<10 exp-11**

* if the antenna is dedicated, it is $\lambda/4$ monopole antenna with cable 1-5 metres (see exploded view).