

# Operational Description for Type R202 Model 153D receiving unit

## 1 Identification of the unit

Type	R202
Model	153D
Configuration	B29
Equipment	remote control receiving unit
Receiving radio module	E16SRXUS1
Used frequency band	902 - 928 MHz
FCC Identifier	OQA-R202153D
Manufacturer	AUTECH 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: refersto 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 B01:

- embedded antenna
- converter d/a extension interface (card) E16RIV15

Configuration B02:

- dedicated antenna with a cable 1 - 5 metres
- converter d/a extension interface (card) E16RIV15

Configuration B03:

- embedded antenna
- 1-axis with 4 steps potentiometer extension interface (card) E16RIV4A

Configuration B04:

- dedicated antenna with a cable 1 - 5 metres
- 1-axis with 4 steps potentiometer extension interface (card) E16RIV4A

Configuration B05:

- embedded antenna
- 2-axis with 4 steps potentiometer extension interface (card) E16RIV4B

Configuration B06:

- dedicated antenna with a cable 1 - 5 metres
- 2-axis with 4 steps potentiometer extension interface (card) E16RIV4B

Configuration B07:

- embedded antenna
- concrete extension interface (card) E16RIV1A

Configuration B08:

- dedicated antenna with a cable 1 - 5 metres
- concrete extension interface (card) E16RIV1A

Configuration B09:

- embedded antenna
- 4 programmable relais extension interface (card) E16RIR4A

Configuration B10:

- dedicated antenna with a cable 1 - 5 metres
- 4 programmable relais extension interface (card) E16RIR4A

Configuration B11:

- embedded antenna
- 1-axis with 13 steps potentiometer output extension interface (card) E16RI01A

Configuration B12:

- dedicated antenna with a cable 1 - 5 metres
- 1-axis with 13 steps potentiometer output extension interface (card) E16RI01A

Configuration B13:

- embedded antenna
- 2 programmable relais extension interface (card) E16RIR2A (24Vdc)

Configuration B14:

- dedicated antenna with a cable 1 - 5 metres
- 2 programmable relais extension interface (card) E16RIR2A (24Vdc)

Configuration B19:

- embedded antenna
- Comedil block extension interface (card) E16RIREA (24/48 Vac/dc)

Configuration B20:

- dedicated antenna with a cable 1 - 5 metres
- Comedil block extension interface (card) E16RIREA (24/48 Vac/dc)

Configuration B21:

- embedded antenna
- Comedil block extension interface (card) E16RIREB (24 Vdc)

Configuration B22:

- dedicated antenna with a cable 1 - 5 metres
- Comedil block extension interface (card) E16RIREB (24 Vdc)

Configuration B25:

- embedded antenna
- cmd held programmable extension interface (card) E16RIMEA

Configuration B26:

- dedicated antenna with a cable 1 - 5 metres
- cmd held programmable extension interface (card) E16RIMEA

Configuration B27:

- embedded antenna

Configuration B28:

- dedicated antenna with a cable 1 - 5 metres

Configuration B29:

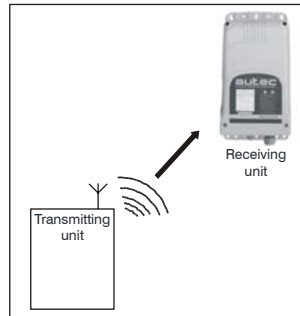
- embedded antenna
- 8 additional relais programmable extension interface (card) E16RIR8A

Configuration B30:

- dedicated antenna with a cable 1 - 5 metres
- 8 additional relais programmable extension interface (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.

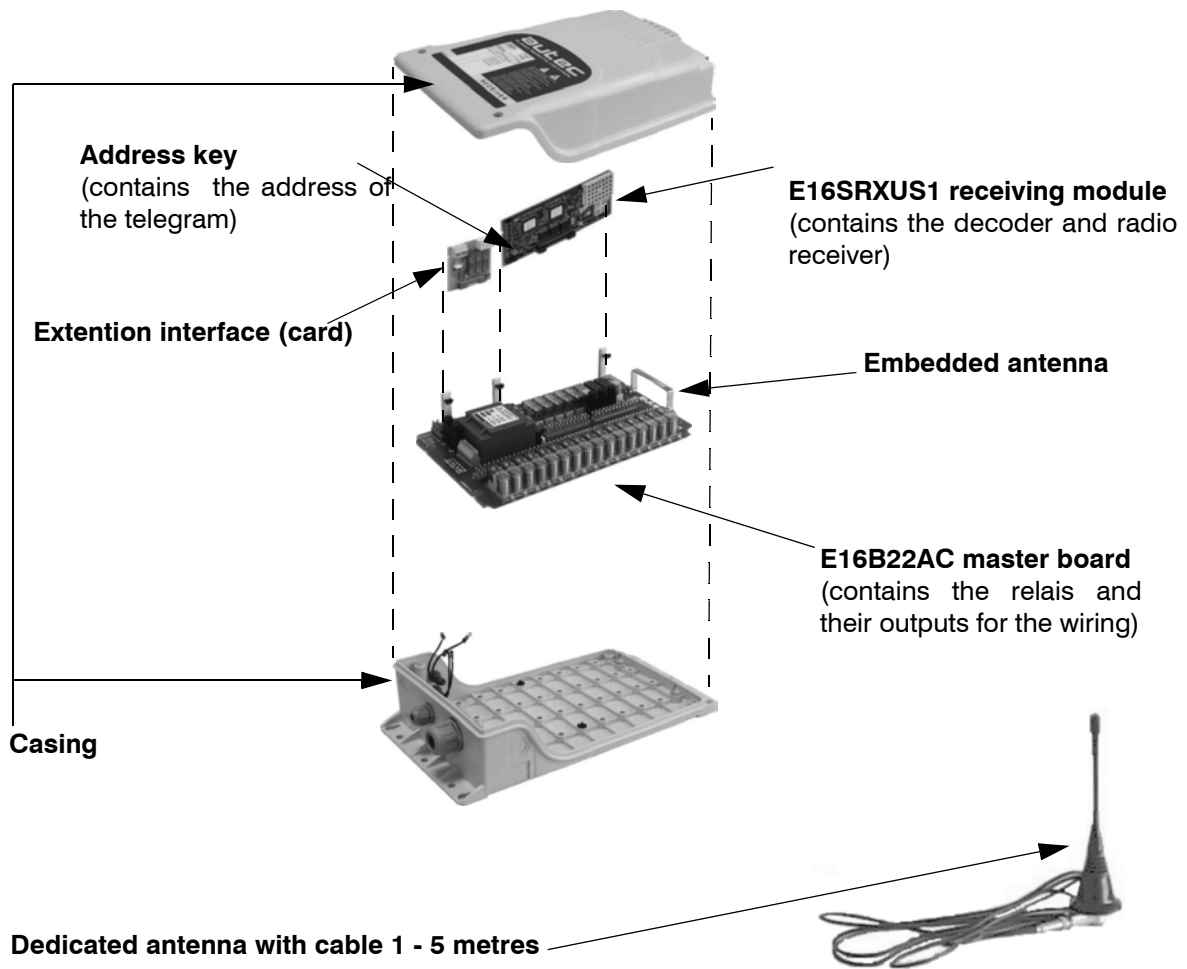


The receiving unit contains E16SRXUS1. It is the radio receiving module.

A double conversion superheterodyne 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 E16B22AC 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	<b>902 - 928 MHz</b>
Type of modulation	<b>2200 - 2600 Baud GFSK</b>
Channel spacing	<b>25 kHz</b>
Sensitivity	<b>-116 dBm (SINAD &gt; 12 dB)</b>
Type	<b>superheterodine (double conversion)</b>
Duty cycle	<b>up to 100 % (continuous duty), depends on user's need</b>
Duplex direction	<b>simplex</b>
Antenna type	<b>embedded *</b>
Data telegram	<b>132 bit</b>
Hamming distance	<b>&gt; 8</b>
Probability of non-recognition of error	<b>&lt;10 exp-11</b>

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

