

ROLLING CODE
Morpheus uses a highly reliable encoding system guaranteed by the use of dynamic codes. The code is changed for each encoding transmission through the use of an encoding algorithm which only the receiver is able to recognise and therefore decide whether or not the code transmitted corresponds to the original code. The generated carrier code is based on identification code with 28 bits, unique to each mobile transceiver and already loaded into the micro-controller.

MEMORY MODULE
During memorisation the codes are transferred into a non-volatile memory module which can be transferred into another receiver, where necessary, without having to reprogram the codes.

PROGRAMMABLE CHANNEL MODULES
The fixed transceiver unit **MORPH433RC** can take up to four interchangeable channel modules (relays) **MCCMORPHM0** while the fixed transceiver unit **MORPH433AL** is supplied with four relays soldered to the mother board.

MORPHKEYSW MANAGEMENT SOFTWARE
The battery charger **MORPHKEY** also allows you, by means of a PC using the software **MORPHKEYSW**, (to be downloaded from the website www.cardin.it) to manage the various functions available in the mobile units:
- programming keys; setting the answer time; enabling/disabling the buzzer; enabling/disabling leds.

AERIAL
The installation of the antenna is fundamental, connected to the receiver it represents the reception point for the radio control. A tuned antenna must be connected to the receiver and should be positioned out of doors in the highest possible point, visible and away from metal structures.



**DIGITAL RADIO CONTROL TRANSCEIVER
WITH ROLLING CODES 433,92 MHz, FM,
(with signal reception confirmation)**



Morpheus
CARDIN



| |
|--------------------------------|
| Number of code combinations |
| 2 ¹²⁸ |
| Available channels |
| 1-4 |
| Transmission range |
| 100 - 200 m |
| Mobile transceiver with aerial |
| 700 m |

SPECIFICATIONS

TECHNICAL SPECIFICATIONS



MOBILE TRANSCEIVER

MOBILE TRANSCEIVER

- transmission frequency 433,92 MHz
- modulation FM/FSK
- power supply (rechargeable battery) Polymer Li-ion
- power consumption 60 mA
- automatic shut down max. 3 seconds
- operating temperature -10...+55 °C

STATIONARY TRANSCEIVER

STATIONARY TRANSCEIVER

- reception frequency 433,92 MHz
- sensitivity (finely tuned signal) -110 dBm 0,7 µV
- receiver power supply 12/24 Vac-dc
- maximum power consumption at rest/with activated relay 60 VA / 24 W
- maximum voltage 30 Vac-dc
- operating temperature -20...+75 °C

MORPHEUS

MORPHEUS

The system maintains the radio-electric characteristics of the latest generation of Cardin Elettronica appliances whilst sharpening the reception capacity and increasing the number of possible uses thanks to the implementation of the "Transceiver" bidirectional signal exchange. These and other characteristics make "Morpheus Cardin" an excellent system that distinguishes itself in the specialist sector of radio control devices. The fruit of Cardin Elettronica's experience, and realised following a philosophy of work that sees us continuously occupied in the creation of coherent projects that are aimed at the creation of professional products.

Our work is a continuing task that requires investment, technological updating and lots of passion, Energy burnt with enthusiasm "not to be first but to be the best". Compact and well designed both in the "command" as well as the "selection and reply" part, the basic model and the more evolved, performance-enhanced versions foreseen in the project make Morpheus a high technology, top-quality product that fulfils the requirements of professional and well-prepared technicians. The Morpheus system works off a frequency of 433 MHz and is protected by Rolling Code.

USE

USE

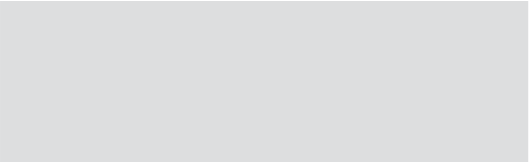
The Morpheus system allows the remote activation of electrical and electronic appliances and sends a reception confirmation signal back to the transceiver. The radio control system consists of one or more mobile transceivers and one or more stationary transceivers which can be combined to meet the specific needs of the system. The codes in the mobile units are transferred during the memorization stage in to the non-volatile memory of the fixed unit; a maximum of 1000 different codes may be memorized.

The Morpheus system is best used for the activation and deactivation of security systems, the command of automatic opening systems and in all systems which require:

- remote control activation (without wires) using secret codes
- confirmation control of the sent command signal without direct visual contact with the system.

During operation each successful activation will receive a confirmation signal sent from the receiver to the transmitter allowing you to control an operation from a remote location.

| | | | | |
|----------------------------|--|----------------------|------------------------------|-------------------------|
| operation indicator LED | rechargeable batteries charger connection | power supply via USB | battery charge status LED | battery charger via USB |
|----------------------------|--|----------------------|------------------------------|-------------------------|



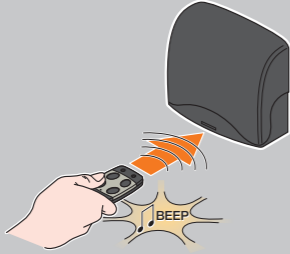
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OPERATING THE **MORPH433RC** TRANSCIVER SYSTEM

STAGE 1

Press the desired channel on the mobile unit: The unit will emit one "beep" and send the signal to the fixed-position unit.



STAGE 1 - NOTE

If the mobile unit is not memorized on the fixed-position unit or you are out of radio signal range, the mobile unit will emit a single long beep after a few seconds has passed.



STAGE 2

The fixed-position unit receives the signal and activates the relay (in the set mode impulsive or ON/OFF) that corresponds to the transmitted channel. The fixed-position unit sends a confirmation signal to the mobile unit as well as a relay status signal (open / closed).

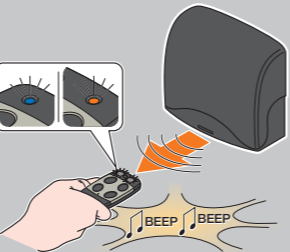


STAGE 3

The mobile unit emits two confirmation beeps and displays the relay contact status as follows:

| contact | lit led |
|---------|---------|
| closed | blue |
| open | orange |

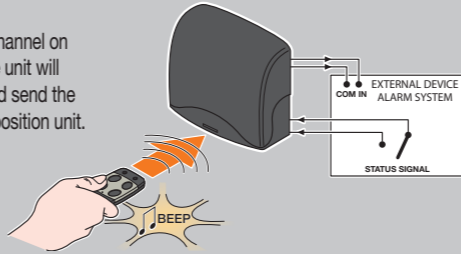
If the relay module is not inserted or is damaged: no Leds will light up.



OPERATING THE **MORPH433AL** TRANSCIVER SYSTEM

STAGE 1

Press the desired channel on the mobile unit: The unit will emit one "beep" and send the signal to the fixed-position unit.



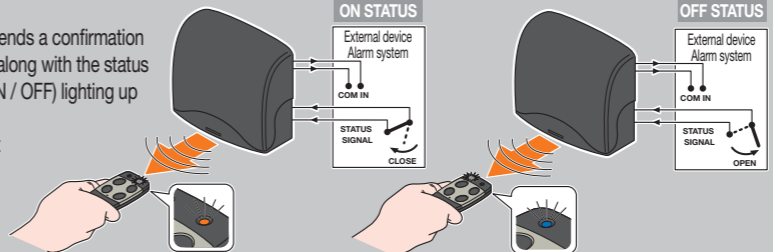
STAGE 2

The fixed-position unit receives the signal and activates the relay that corresponds to the transmitted channel. The external device (eg. an alarm system) connected to the output contact changes its status.

STAGE 3

The fixed-position unit sends a confirmation signal to the mobile unit along with the status if the external device (ON / OFF) lighting up one of the two LEDs:

- Orange closed contact (device ON)
- Blue open contact (device OFF)



MORPH433W00



MULTI-PROTOCOL INTERFACE

The interface is able to decode a radio frequency signal coming from a Morpheus transceiver and output a Wiegand/ISO-3554 digital signal, containing the transmitter code, in 13 different formats. It is fitted with USB for connection to a PC and an input that can be connected to a timer or a switch with the aim of enabling or disabling the interface over different time periods. Rolling Code management with transmitter memorization on the interface. Box in ABS IP20. Overall dimensions 120 x 85 x 20.



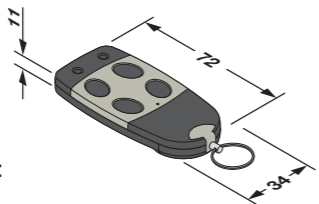
MOBILE TRANSCIVER UNITS

- Container in shockproof plastic material
- 3,7 V power supply with Li-Poly rechargeable battery.
- The mobile units are fitted with rechargeable batteries. If during the transceiver operating stage three the blue and orange Leds light up alternatively accompanied by the sounding of the buzzer the battery will have to be charged.
- Indications on the mobile units Led + Buzzer
- Blue left-hand LED
- Orange right-hand LED
- Buzzer giving off variable length sounds

The three indicators combine together to indicate:

The sending of the signal, activation of the device, the status of the relays (only MORPH433AL), insufficient battery charge. During the system set up stage they indicate the successful memorisation or cancellation of the codes.

- MORPH433T1** 1-channel mobile transceiver
- MORPH433T2** 2-channel mobile transceiver
- MORPH433T3** 3-channel mobile transceiver
- MORPH433T4** 4-channel mobile transceiver
- MORPH433T4A** 4-channel mobile transceiver plus aerial



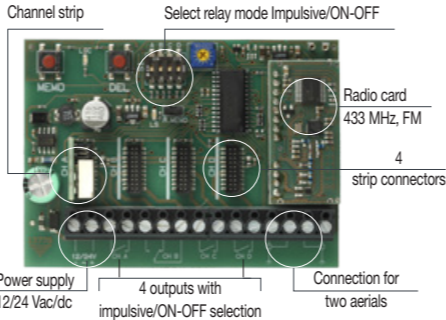
External dimensions:

MORPH433RC

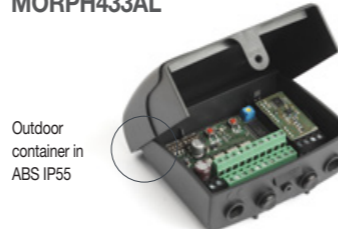


Outdoor container in ABS IP55

External dimensions 110 x 110 x 33

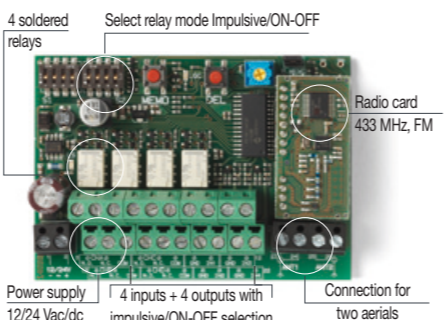


MORPH433AL



Outdoor container in ABS IP55

External dimensions 110 x 110 x 33



THE TRANSCIVER SYSTEM MORPH433RC

- Outdoor stationary transceiver fitted with a 15-way terminal board and 1-4 channels. All weather box in ABS - IP55.
- Power supply 12/24 Vac-dc.
- Possibility of memorising up to 1000 codes.
- It is possible to connect two aerials in order to improve the signal and consequently the range.
- The outdoor receiver is fitted using "fast-fitting" brackets. After connecting the wiring the case should be slid onto the bracket therefore fixing it to the wall. If any repair work is necessary the case can be easily extracted by pushing upwards the action of which will separate it from the bracket.
- The unit can be fitted with up to 4 interchangeable relays strips - MCCMORPHM0 . 1 relay is supplied. The relay strips are set via dip-switches to one of the following:
 - Impulsive mode = corresponding dip-switch set to 'OFF'
 - ON/OFF mode = corresponding dip-switch set to 'ON'In the impulsive modules the activation time can be set by means of a trimmer from 200 ms to 3 s.

THE TRANSCIVER SYSTEM MORPH433AL

- Outdoor stationary transceiver fitted with a 26-way terminal board and 1-4 channels. All weather box ABS - IP55.
- Power supply 12/24 Vac-dc.
- Possibility of memorising up to 1000 codes.
- It is possible to connect two aerials in order to improve the signal and consequently the range.
- The outdoor receiver is fitted using "fast-fitting" brackets. After connecting the wiring the case should be slid onto the bracket therefore fixing it to the wall. If any repair work is necessary the case can be easily extracted by pushing upwards the action of which will separate it from the bracket.
- The transceiver unit is fitted with four soldered relays that can be set via dip-switches to one of the following:
 - Impulsive mode = corresponding dip-switch set to 'OFF'
 - ON/OFF mode = corresponding dip-switch set to 'ON'In the impulsive modules the activation time can be set by means of a trimmer from 200 ms to 3 s.
- For every output there is a corresponding input through which it is possible to read the (ON/OFF) status of the device connected to the respective outputs. See 'operating the MORPH433AL transceiver system'.

MORPH433RS



External dimensions 70 x 52 x 20

MORPH433RM



External dimensions 95 x 75 x 25

SLOT-IN STATIONARY TRANSCIVER CARD

- Transceiver card for direct insertion into a Cardin host appliance designed to receive it.
- Power supply 24 Vac-dc.
- Possibility of memorising up to 1000 codes.
- The unit has two relays soldered to the mother board. The relays are set by means of jumpers to one of the following:
 - ON/OFF mode = jumper inserted
 - Impulsive mode = jumper not insertedIn the impulsive modules the activation time can be set by means of a trimmer from 200 ms to 3 s.

MINI STATIONARY TRANSCIVER

- 2-channel mini stationary transceiver with a 10-way terminal block and an IP20 box.
- Power supply 12/24 Vac-dc.
- Possibility of memorising up to 1000 codes.
- The unit has two relays soldered to the mother board. The relays are set by means of jumpers to one of the following:
 - ON/OFF mode = jumper inserted
 - Impulsive mode = jumper not insertedIn the impulsive modules the activation time can be set by means of a trimmer from 200 ms to 3 s.

RF MODULE FOR STATIONARY TRANSCIVERS 433 MHz

- Superheterodyne in FM with antenna SAW filter. RF module without decoder suitable for receiving and transmitting digital signals.
- Voltage: 3 Vdc - Electrical input: 15 mA



External dimensions 40 x 20 x 15

YRFMORPH43300

MCCMORPHM0



with the following functions:

- Impulsive
- ON/OFF

The relay can be set to one of the functions by configuring it on the stationary transceiver.

ANS400



AERIAL 433 MHz

Connect the tuned aerial to the receiver using coaxial cable RG58 (impedance 50 Ω) with a maximum length of 15 m.



BATTERY CHARGER KEY MORPHKEY

The battery can be recharged either by connecting the transmitter to the battery charger using the supplied cable or by connecting it to the USB interface on a PC. The battery charger MORPHKEY also allows you, by means of a PC using the software MORPHKEYSW, (to be downloaded from the website www.cardin.it) to manage the various functions available in the mobile units.

BATTERY CHARGER KIT MORPHKEYCB

- The battery charger kit is composed of:
- battery charger Cardin MORPHKEY
- mains power transformer
- USB cable

