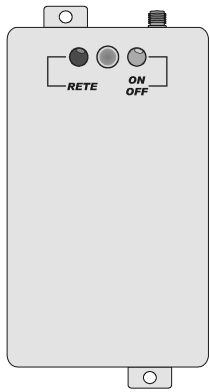


## PRESENTATION



EL35.014 is a GSM instrument designed for remote control of a device connected to it (boilers, air conditioners, chrono-thermostats, fan-coils etc.).

With a simple command sent via SMS it is possible to control an external device, know its status (on or off), or have information concerning about the ambient temperature, or else enable

automatic control of the output in accordance with the ambient temperature.

The device is protected by a password (presettable), which prevents its unauthorized use.

## INDEX

- (1) INSTALLATION
- (2) INTERFACES
- (3) LOCAL ACTIONS
- (4) FUNCTIONS
- (5) DEFAULT SETTING
- (6) COMMANDS
- (7) NOTIFICATION SMS
- (8) AUTOMATIC RESART
- (9) NAMPLATE DATA
- (10) ACCESSORIES
- (11) FAQ
- (12) WIRING DIAGRAMS
- (13) WARRANTY
- (14) CE DECLARATION OF CONFORMITY

## (1) INSTALLATION

For correct operation, the device requires a **Plug-in SIM Card** (not included) enabled to receive and send SMS messages, and **not protected by a PIN code**.

*N.B.: before inserting the SIM Card, remove (if present) the PIN code protection by using a cell phone.*

Please always be careful to remind the expiring date of the SIM Card, if existing.

Install the device on an interior wall sheltered from the sunlight and all sources of heat such as lamps, television sets, and draughts.

The product should be installed within the following temperature range: from  $-5^{\circ}\text{C}$  to  $+45^{\circ}\text{C}$ .

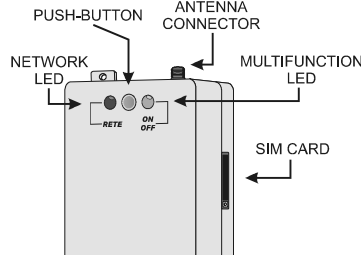
*The EL35.014 device operates by using a radio sign. No mobile telephone operator is able to guarantee connection at any instant. For this reason, the EL35.014 cannot be used in life support systems.*

### Procedure:

- make sure that the device is off;
- locate the SIM Card holder and exert a slight pressure on the yellow release pin of the SIM holder using a pencil;
- insert the SIM Card in its slot making sure of its correct orientation;
- close the SIM holder by pressing it fully home (with great care);
- screw the antenna on relative connector (without applying excessive force);
- place the product on a firm surface making sure that a good signal of the GSM operator is present;
- connect the external instrument with due observance of all necessary regulations;
- power up the device.

When switching on for the first time the settings are those given in section (5).

## (2) INTERFACES



The **Push button** allows:

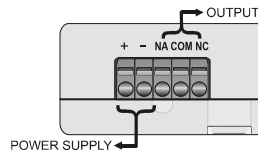
- modifying the output status (manual switching of the output);
- activating\disactivating the Automatic function (see (4) FUNCTIONS - Automatic), (only if  $T_{\text{FUNCTION}}$  is enabled);
- displaying the GSM network field strength detected by the device (see (3)).

The **Multifunction Led** allows:

- displaying the output status;
- displaying the activation\disactivation of the Automatic function (only if  $T_{\text{FUNCTION}}$  is enabled);
- displaying the level of the GSM network field strength detected by the device.

**Network Led:**

- red light indicates that the device is not connected to the GSM network and is searching for network signal, or else the SIM Card is incorrectly inserted, or the SIM card is protected by a PIN code;
- flashing (i.e. the led is almost always unlit): indicates that the device is connected to the GSM network and is ready to receive commands;
- unlit: indicates that the GSM module is off.



### Output:

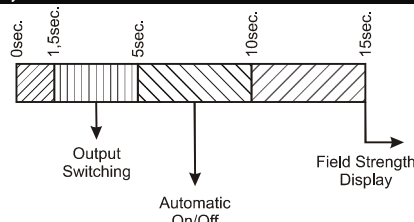
The device is provided with a bistable relay output.

- If the external device to be controlled is switched on when the command line is closed, proceed to connect such line to N.A. and COM terminals.
  - If the external device to be controlled is switched on when the command line is opened, proceed to connect such line to the N.C. and COM terminals.
- If such instructions are followed, the association between status of the device connected and the multifunction led is as follows:
- Green Led : external device On (COM-NA).
  - Red Led : external device Off (COM-NC).

### Power Supply:

The power supply for the device should be from 9 to 24V DC with current lying 1A.

## (3) LOCAL ACTIONS



After start-up of the device it is possible to:

- switch the status of the relay output by pressing the push button for a period of time between 1.5s and 5s.
- activate\disactivate the Automatic function (only if  $T_{\text{FUNCTION}}$  is enabled) by pressing the push button for a period of time between 5sec. and 10sec.:
  - the activation is signalled by rapid flashing (red) of the multifunction led;
  - the disactivation is signalled by slow flashing (red) of the multifunction led.

- Display the GSM network field strength by pressing the push button and holding it down until the multifunction led goes out (about 15sec. after). After the multifunction led goes out, the following visual information is supplied:
  - Red, steady light: critical coverage, reposition the antenna.
  - Red/Green, flashing: poor coverage, reposition the antenna if possible.
  - Green, light: sufficient coverage.

If the push button is pressed for less than 1.5sec or between 10 and 15sec., no action is involved.

## (4) FUNCTIONS

### T<sub>FUNCTION</sub>

This function allows displaying information regarding ambient temperature in each Status Notification SMS; it can only be Activated\Disactivated via SMS (see (6))

### Automatic

This function allows the device to handle the output in accordance with ambient temperature. It is possible to preset a threshold temperature ( $T_s$ ) between  $+10.0^{\circ}\text{C}$  and  $+40^{\circ}\text{C}$ . The Automatic function can be Activated\Disactivated only when  $T_{\text{FUNCTION}}$  is enabled.

The ambient temperature is checked once every eight seconds, and if:

- $T$  exceeds  $T_s+1^{\circ}\text{C}$ : the relay output is deactivated (contacts on COM-NC and multifunction led Red).
- $T$  is below  $T_s-0.5^{\circ}\text{C}$ : the relay output is activated (contacts on COM-NA and multifunction led Green).

If this function is activated, a Status Notification SMS also contains information regarding the preset threshold temperature.

The Automatic function can be activated\disactivated locally (see (3)) or via SMS (see (6)).

## (5) DEFAULT SETTINGS

After the first installation, default settings are as follows:

- Password: 0000
- Output: OFF (COM-NC, multifunction led red)
- $T_{\text{FUNCTION}}$ : OFF
- Automatic: OFF
- Threshold Temp. ( $T_s$ ):  $+20.0^{\circ}\text{C}$

Default settings can be changed via SMS.

The default settings can be restored at any moment by proceeding as follows:

- Switch off the device;
- Press and hold down the push button;
- Power up the device (the multifunction led remains unlit for approx. 5 seconds);
- When the multifunction led lights up, release the push button;

The settings have been restored.

The settings are saved permanently in the internal memory of the device. In the event of a power failure, the memorized settings are not lost and they are restored when switching on.

## (6) COMMANDS

*The command SMS should be sent to the cell phone number corresponding to the SIM card inserted in the device installed.*

The format of a command SMS is:

PASSWORD	#	COMMAND
----------	---	---------

Password for the following examples: 0000 (Default)

## ACTIVATE OUTPUT (1 - ONE)

To activate the output send the following SMS:  
0000#1

Result:

Multifunction led: Green  
Output: COM-NA closed  
COM-NC open

After execution, the device sends a Status Notification SMS to the sender's cell number. If Automatic function is enabled, the sending of command "1" will disable it.

## DISACTIVATE OUTPUT (0 - ZERO)

To deactivate the output send the following SMS:  
0000#0

Result:

Multifunction led: Red  
Output: COM-NA open  
COM-NC closed

After execution, the device sends a Status Notification SMS to the sender's cell number. If Automatic function is enabled, the sending of command "0" will disable it.

## REQUEST STATUS (?)

By sending the following SMS:  
0000#?

the device sends a Status Notification SMS to the sender's cell number containing the output status and information regarding the functions activated (see (4)).

Multifunction led: no modification  
Output: no modification

## ACTIVATE \ DISACTIVATE T<sub>FUNCTION</sub> (T)

To activate the T<sub>FUNCTION</sub> send the following SMS:  
0000#T1

To deactivate the T<sub>FUNCTION</sub> send the following SMS:  
0000#T0

For further information see (4).

If activated, the following wording appears in a Status Notification SMS:  
T: "Temperature Measured"

## ACTIVATE \ DISACTIVATE AUTOMATIC (A)

To activate the Automatic function send the following SMS:  
0000#A1

To deactivate the Automatic function:  
0000#A0

For further information see (4).

When activated, the following wording appears in a Status Notification SMS:  
Ts: "Preset temperature"

**CAUTION:** *disactivation of the function with command A does not modify the output status!*

## SET THRESHOLD TEMPERATURE (Ts)

This Command allows to set the temperature of the Automatic Function.

The temperature could be set only if the Automatic Function is ON and the threshold temperature should lie between 10°C and 30°C.

To set the threshold temperature at xx°C send the following SMS:

0000#Sxx

Example to set the threshold temperature at +22°C:  
0000#S22

## CHANGE PASSWORD (P)

*The password should consist of four digits.*

Example: to set the new password 1234 while the current password is 0000 send the following SMS:

0000#P1234

The device sends the following New password Notification SMS to the sender's cell number:

New Password: 1234

## TEMPERATURE TUNING

*Before tuning the sensor, please wait until the device reaches full operating temperature (30 minutes at least).*

Example of SMS to add two degrees  
0000#T+02 (Added 2°C)

Example of SMS to subtract one degree  
0000#T-01 (Subtract 1°C)

After the execution, the device sends an SMS displaying the new temperature to the sender's phone number

## (7) NOTIFICATION SMS

After receiving a command SMS, the device can send a notification SMS messages to the sender of the command:

### Error Notification SMS

The device sends this SMS if the command sent does not exist or cannot be activated, or if the command parameter is not valid. Content of this notification SMS is:

ERROR!

If the command SMS starts with a wrong password, (4 digit followed by #) the notification SMS is:

Invalid password!

### Status Notification SMS

The device send this SMS after executing any of the command (excluding P). A status Notification SMS contains the information regarding the current status of the output and the function activated.

Examples:

- Output On, no Function Activated:  
ON.
- Output On, and T<sub>FUNCTION</sub> Activated:  
ON. T:+22.0°C
- Output Off, T<sub>FUNCTION</sub> and Automatic Activated:  
OFF. T:+22.0°C. Ts:20.0°C
- Output Off, and all Functions Activated:  
OFF. T:+22.0°C. Ts:20.0°C.

*The device does not send any type of notification SMS if the SMS received is not recognized as valid (ex. do not start with 4 digits).*

## (8) AUTOMATIC RESTART

This function allows simulating the disconnection, and subsequent re-connection of the device from/to GSM network every six hours, in order to maintain a discrete value of priority in the operators' queues. Such function is useful in places where there is the risk of the GSM network signal missing even for several days.

## (9) NAMPLATE DATA

**Power supply:**  
Volts: 9-24V DC  
Amps: 1A

**Average Power Consumption:**  
Standby: 40mA  
Sendig \ Receiving SMS: 100mA

### Output

Type: bistable relay SPDT  
Contact Load Capacity (MAX):

0.25A	250VAC	62.5VA
0.5A	125VAC	62.5VA
2A	30VDC	60W

## (10) ACCESSORIES

- Antenna with magnetic base and cable 2,5m.
- Rod antenna.
- Power supply unit.
- External power Relay.

## (11) FAQ

**Q:** The device does not operate after plugging the power supply unit in the wall mount socket

**A:** Make sure that the power supply cable have been connected as indicated in the manual and that all instructions given in it have been followed.

**Q:** The network led is red and the multifunction led flashes

**A:** The SIM Card could be protected by a PIN Code or it is not correctly positioned. Switch off the device and verify the SIM Card.

**Q:** The network led is red and the multifunction led is off

**A:** There is not enough GSM network signal. Try to place the device in a different position with better GSM signal.

**Q:** After sending a command SMS, the notification SMS messages arrive late or else they are not delivered.

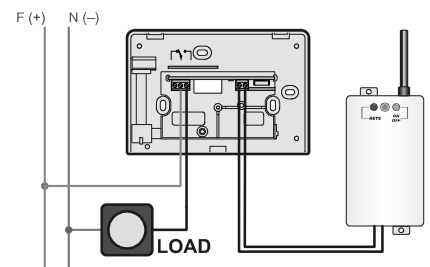
**A:** 1) The EL35.014 device operates by using a radio sign, no mobile telephone operator is able to guarantee connection at any instant. For this reason, the EL35.014 device cannot be used in life support systems.

2) Make sure that there is credit on the SIM card.

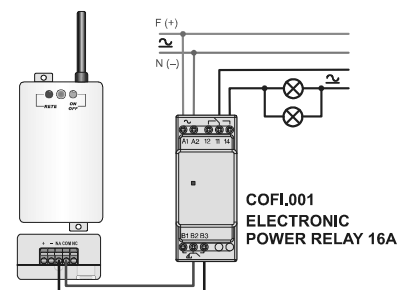
3) Make sure that the device has been installed in a place where the GSM network signal is present.

## (12) WIRING DIAGRAMS

### 1. Connection to chrono-thermostat enabled



### 2. Connection to power relay



## (13) WARRANTY

The product is warranted for 12 months from the date of purchase, as proved by the purchase document.

The company declines all liability for injury or damage which may occur to persons, property or animals, as a result of failure to observe all the instructions given in the user manuals.

## (14) CE DECLARATION OF CONFORMITY

With this document, the manufacture declares that the device conforms with the essential requirements and the other provisions set forth in the directive 1999/5/CE. WEEE Eco-contribution paid where due - WEEE register no.: IT0802000003625

EL35.014 REV. 300 02/10

[www.elettroterm.it](http://www.elettroterm.it)