
EL35.009



GSM Remote Control

USER'S GUIDE

Safety Information

- The EL35.009 device incorporates a latest-generation Quad Band GSM engine. To install and use it correctly, the indications given in this manual are to be strictly respected.
- The EL35.009 device is a low-power radio trans-receiving device. When it is operating, it sends and receives radio frequency energy. Operating the EL35.009 device close to radios, televisions, telephones or electronic devices in general may cause interference. The EL35.009 device may be subject to interference that affects its performance.
- Do not install the EL35.009 device close to pacemakers, auditory prostheses or medical devices in general as the EL35.009 device may interfere with the operation of these devices.
- The EL35.009 device must be turned off on aeroplanes. Make sure that the device cannot be turned on accidentally.
- Do not use the EL35.009 device in the presence of inflammable gases or fumes. Turn off the device when close to petrol stations, fuel deposits and chemical plants.
- The EL35.009 device operates by means of a radio signal, no mobile telephone operator is capable of ensuring a connection at all times. For this reason, the EL35.009 device cannot be used in life support systems.

Notes

- All information contained in this manual is subject to change without prior notice.
- No part of this manual may be reproduced, in any form or by any means, electronic or physical, or otherwise, including photocopying or storage, for needs other than the personal use of the user, without the prior written permission by ElettroTERM S.r.l.
- The use, copying, modification, disassembly or transmission of the EL35.915CS software is forbidden, except for needs specifically authorized under this licence. Unless specifically authorized, all rights are held by ElettroTERM S.r.l. and/or its suppliers.
- For any other trademark or product cited reference is made to relative owner.

INDEX

FOREWORD	4
INSTALLATION	5
Environmental conditions.....	5
Degree of Protection.....	5
Power supply	5
Signalling Inputs	5
Relay Output.....	5
Description of the EL35.009 Device	6
Network LED.....	7
Multifunction LED	7
Push button	7
RUN\PROG toggle switch	7
Programming Port	7
Input and Output lines.....	7
Installation of the EL35.915CS Software	8
Configuration of the EL35.009 device	8
1. PROG mode	8
2. Connection to the device.....	9
3. Configuration parameters.....	9
PIN code	9
System Password.....	9
Control Panel.....	9
Signalling Inputs.....	9
User List.....	10
4. RUN mode	10
Command SMS	11
Notification SMS	11
Error Notification SMS	11
Voice Call (without reply)	12
Display of Reception Level of the GSM network	12
Nameplate Data	13
EL35.009 device.....	13
Software (Requirements).....	14
Declaration of Conformity	14

FOREWORD

The EL35.009 device is a latest generation stand-alone GSM remote control provided with two signalling inputs and an SPDT relay output.

Up to five SMS messages for opening and closing the contact can be associated with each signalling input line.

The EL35.009 device is able to receive commands sent via SMS messages or else through a simple voice call with zero cost.

The EL35.009 device is provided with specific configuration software that allows considerable simplification of the installation procedure, namely EL35.915CS software.

The EL35.915CS software features a user-friendly graphic interface which guides the user step-by-step through the installation procedure of the EL35.009 device.

INSTALLATION

In order to ensure the operator's safety and the correct operation of the EL35.009 device, the device should be installed exclusively by qualified staff. The rules listed below should also be strictly observed.

Environmental conditions

The EL35.009 device (the instrument and all cables connected to it) should be installed in places either free or far from:

- Dust, humidity, great heat;
- Direct exposure to sunlight;
- Objects radiating heat;
- Objects generating a strong electromagnetic field;
- Liquids or corrosive chemical substances.

The EL35.009 device has been designed to operate at a temperature of between -5°C and $+45^{\circ}\text{C}$ (standard working temperature).

Avoid sudden changes in temperature and/or humidity.

Degree of Protection

During the installation of the EL35.009 device, the following degree of protection is to be ensured:

- IP40: minimum degree of protection, which must always be guaranteed;
- IP54: protection to be guaranteed when using the device outdoors.

Power supply

Observe the following rules:

- Do not use cables longer than 3 m;
- The external power supply unit (e.g. mains charger), must comply with the EN 60950 Directive (electrical safety);
- Do not invert the polarity of the power supply cables.

Antenna

Screw the antenna at the proper connector. In case of use of a “L” shape antenna, the top must be in the direction of the power supply relay.

Signaling Inputs

During the installation of the device, strictly observe the indications given in this manual.

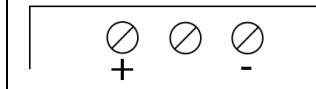
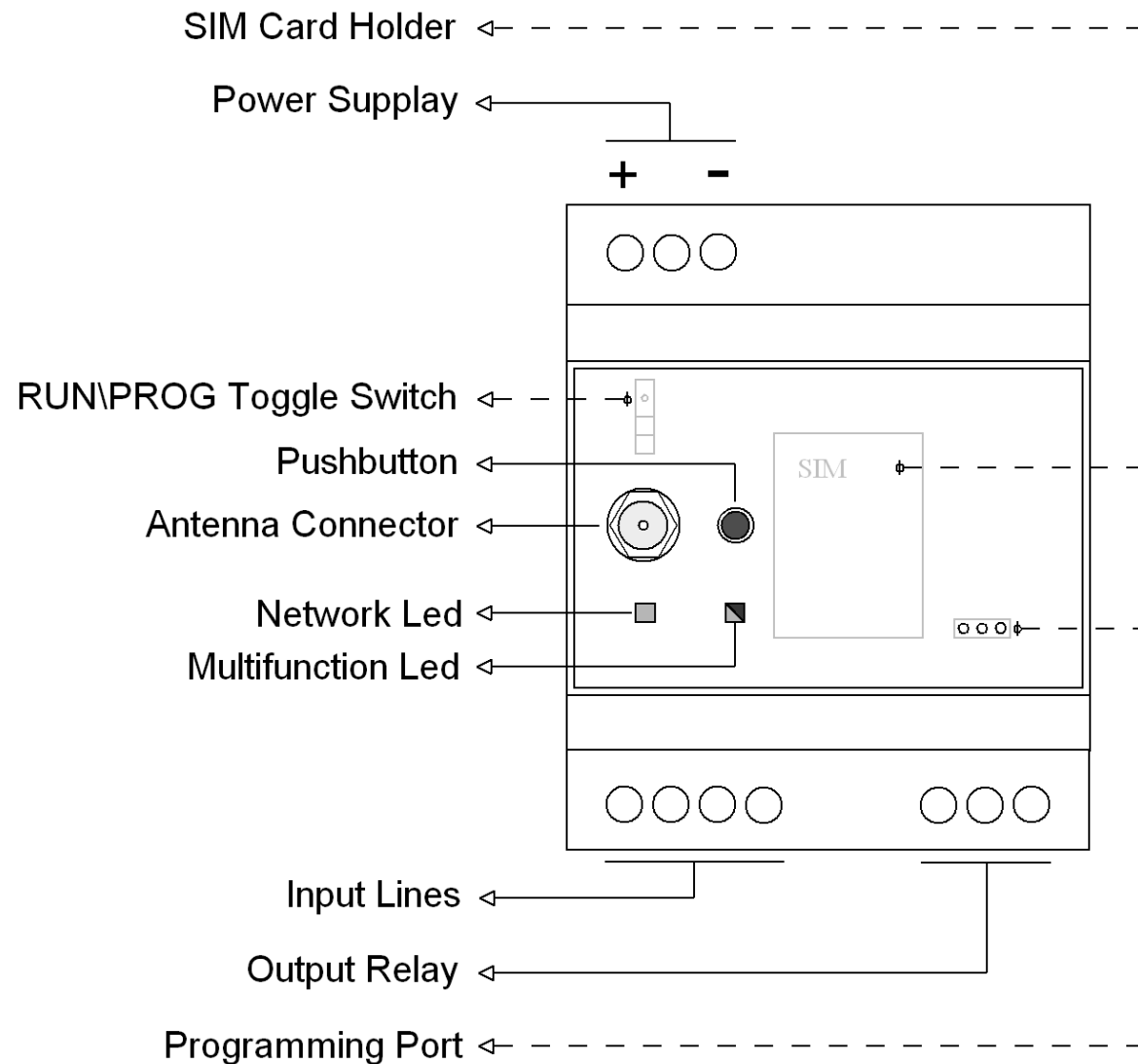
Observe the polarities and nameplate data indicated in the manual.

Relay Output

During the installation of the device, strictly observe the indications given in this manual.

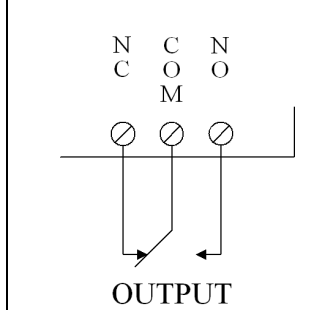
Install the external equipment correctly and observe the nameplate data indicated in this manual. Under no circumstances, exceed the nameplate data

Description of the EL35.009 Device



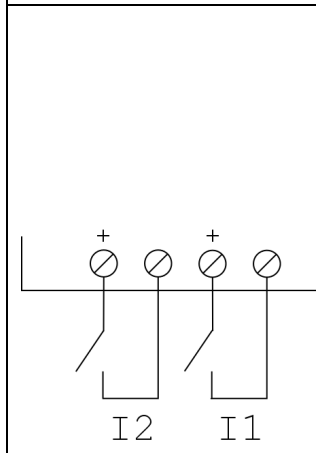
POWER SUPPLY

- 12 to 24V DC [Nominal Range];
- 9 to 30V DC [Extended Range]
- $I_{max} = 500mA$;
- Never use cables with length exceeding 3m;



BISTABLE RELAY OUTPUT

- Rest position: NC-COM [red Multifunction LED];
- Rated switching capacity: 10A, 250V AC;
- Never use cables with length exceeding 3m.



VOLTAGE-FREE CONTACT INPUTS

- It is possible to connect switches such as:
 - Mechanical and electromechanical with suitable nameplate data: 5V DC min. 50 μ A;
 - Electronic with suitable nameplate data: 5V DC min. 50 μ A. Observe the polarity given alongside.
- Status:
 - ON : Closed;
 - OFF : Open.
- Each input can be associated with up to five SMS for both ON-OFF transition and OFF-ON transition.

Network LED

The Network LED is able to provide the following information:

LED STATUS	DEVICE STATUS
Unlit	The device is off
Solid green light	<ul style="list-style-type: none">• the SIM card has not been inserted correctly;• the SIM card is protected by a PIN code;• the device is not linked to the GSM network and is in the network search phase.
Green flashing light	The device is linked to the GSM network and is ready to receive commands

Multifunction LED

The multifunction LED is able to provide the following information:

- relay output status:
 - Red LED: contacts on COM-NC,
 - Green LED: contacts on COM-NO.
- Reception Level of the GSM network measured by the device;
- Device in PROG. Mode.

Push button

The push button located on the front panel can be used for:

- Changing the output status of the device;
- Displaying the reception level of the GSM network measured by the device.

RUN\PROG toggle switch

The RUN\PROG switch allows:

- Starting the PROG mode for programming the EL35.009 device;
- Ending the PROG mode and starting the RUN mode after programming the EL35.009 device.

Programming Port

The programming port is used during installation, for connecting the EL35.009 device to a PC and for setting the configuration parameters via the EL35.915CS software.

Input and Output lines

After the programming procedure has ended, the status of the signaling inputs is considered as current status of the signalling lines.

The device memorizes each variation of the input and output lines. In case of a black-out, when the power supply is restored, the device gives the output at the last known status and handles any new requests for forwarding signalling SMS messages.

Installation of the EL35.915CS Software

EL35.915CS is a software package designed for very easy presetting of the EL35.009 device. EL35.915CS features a user-friendly graphic interface, allowing easy approach even for the less expert users.

The following material (contained in the kit) is required for programming the EL35.009 device:

- One cable for RS232 proprietary programming.
- Configuration CD.

Before proceeding to install the software, it is advisable to upgrade your own operating system.

The EL35.915CS installation procedure is as follows:

1. Switch on the computer and start Windows;
2. Insert the Mini-CD in the CD-ROM drive;
3. Wait for the automatic starting of the CD-ROM. If the automatic starting has been disabled, open **Computer Resources (My Computer)** and click on the CD-ROM icon with the **right** mouse button, then click on **Autoplay**.
4. Click on the setup icon "*Install EL35.915CS*"

Caution: during installation of the EL35.915CS software it could be necessary to install Microsoft .NET Framework 1.1 and required an internet connection.

Before running the program, read the chapters regarding the programming procedure of the EL35.009 device.

Configuration of the EL35.009 device

For correct operation of the EL35.009 device, proceed as follows:

1. start the EL35.009 device in PROG mode;
2. start the EL35.915CS program and connect to the device;
3. enter the configuration parameters through the EL35.915CS software;
4. upload data and start the RUN mode of the EL35.009 device.

1. PROG mode

To configure EL35.009 with EL35.915CS software, start the device in programming mode. Proceed as follows:

1. switch off the EL35.009 device;
2. insert the SIM Card in relative slot;
3. connect the RS232 proprietary data cable to the programming port of the device;
4. connect the RS232 data cable to relative port on the PC.
5. turn the RUN\PROG toggle switch to PROG;
6. switch on the device;

The programming mode is indicated by the green flashing of the multifunction LED.

2. Connection to the device

- Start the EL35.915CS software;
- Select the communication (COM) port where to connect the EL35.009 device;
- From the “*Connection*” menu, select “*Connect*”;

In order to ensure correct operation of the EL35.009 device, connection should be made to the device only and exclusively during the programming mode.

3. Configuration parameters

After connection it is possible to enter the parameters described below.

PIN code

If your SIM card is protected by a PIN code, the EL35.915CS software automatically opens a mask for entering the PIN code. After entering the code, the mask will be disabled permanently.

Caution: If an incorrect PIN number is entered for 3 times, the SIM card will be blocked.

System Password

The EL35.009 device is protected by a four-digit password, defined as “system password”. The system password can be selected freely by the end user; it must be used each time a command SMS message is sent.

Enter the password in the appropriate field.

Control Panel

The “Control Panel” of the program has three buttons as follows:

- Download Data: serves for importing data from an already programmed device [the device must be in programming mode];
- Upload Data: allows sending configuration parameters to the device connected to the PC [after entering the configuration parameters, press this button to make the settings definitive];
- Cancel Data: Allows deleting all the data contained in the device connected to the PC [the device must be in programming mode];

Signalling Inputs

The device is provided with two signalling inputs.

Two events can be associated with each input, namely:

- “closing” event: corresponds to closing the contacts of the signalling line;
- “opening” event: corresponds to opening the contacts of the signalling line.

The end user can associate from a minimum of zero (0) up to a maximum of five (5) SMS messages with each event.

The end user can choose freely the text of a signalling SMS message (max. length 160 characters) and the destination.

User List

During programming, it is possible to define the users enabled for the voice call (see Voice call chapter). It is possible to select, whether the device, after carrying out the command via a voice call, whether to send or not to send a notification SMS to the enabled user generating the command.

WARNING: the “Relay Settings” window, that can be used only with EL35.015 devices, must keep the selection “Switching”.

4. RUN mode

To make the settings operative, after uploading the parameters in the device (*Upload data* button), proceed to terminate the programming mode, then start the RUN mode.

To terminate the programming mode and to be able to use the device, proceed as follows:

1. press the ***Upload data button in the Control Panel*** and wait for the confirmation window;
2. select *Connection* → *Disconnect*;
3. disconnect the proprietary data cable from the device;
4. turn the RUN\PROG switch to RUN [the multifunction LED will stop flashing and will show the output status of the device];
5. put the front panel.

After starting the RUN mode, the device is ready to receive commands.

Command SMS

The EL35.009 device has been especially designed to receive commands via SMS messages. The commands should be sent to the phone number of the SIM Card inserted in the device.

Format of a command SMS is as follows:

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

where:

- **PASSWORD** : is the password set during the installation phase;
- **#** : is a separator;
- **COMMAND** : is one of the commands listed below;
- **Reply** : can be blank or assume the values #, *.

The commands which can be sent are as follows:

- **1** : Activates Output [multifunction LED Green → contacts on COM and NO];
- **0** : Disactivates Output [multifunction LED Red → contacts on COM and NC];
- **?** : Status request [no effect on the output].

The EL35.009 device, after receiving a command SMS message, carries out its contents (if correct), and sends a notification SMS to the mobile phone number of the user if the Reply field is blank (it is omitted).

To not receive a reply SMS you must write # or * in the Reply field.

Notification SMS

Format of a notification SMS is as follows:

GSM Remote Control: Output: X. Inputs: Y₁Y₂.

Where:

- **X**: represents the output status:
 - 0 :contacts on COM-NC;
 - 1 :contacts on COM-NO.
- **Y_i**: represents status of inlet line n^oi:
 - 0 :signalling input n^oi open;
 - 1 :signalling input n^oi closed.

Sending of a notification SMS after receiving a command SMS message depends on the omission or non omission of the Reply parameter (see Command SMS).

Error Notification SMS

The EL35.009 device sends an error SMS message if the content of a command SMS is not valid (SMS with an incorrect command after the right password followed by #) or if the password is wrong (SMS starting with 4 digits followed by #).

Voice Call (without reply)

An Enabled User can switch the status of the relay output line of the device by making a simple voice call (to the phone number of the SIM Card inserted in the device) and, depending on the device settings, to receive a notification SMS.

The voice call has zero cost. After recognizing the caller, the device does not accept the call and it performs the command received.

Display of Reception Level of the GSM network

When the push button is held down for more than five seconds it is possible to display, via the multifunction LED, the reception level of the GSM network measured by the device.

Indications supplied by the LED are as follows:

- LED red: bad reception, reposition the antenna;
- LED flashing (red\green): insufficient reception, reposition the antenna if possible;
- LED green: sufficient reception

After displaying the reception level measured, the multifunction LED will display the current status of the output.

The Network LED combined with the multifunction LED is able to supply information regarding the current status of connection of the device to the GSM network.

Nameplate Data

EL35.009 device

GSM selection	<ul style="list-style-type: none"> • Quad Band 850/900/1800/1900 MHz • Certified for GSM Phase 2/2+
Power supply	<ul style="list-style-type: none"> • Supply voltage: 9V to 30V DC [Extended range] • Current: I_{max} = 500mA • Power terminals: max. conductor size 2.5mm² • Power supply protected against short circuit through internal fuse • Power supply protected against reversed polarity
Relay output	<ul style="list-style-type: none"> • Bistable SPDT relay; • Contact load capacity.: <ul style="list-style-type: none"> ○ 10A, 220V AC (Resistive); ○ 8A, 30V DC.
Main characteristics	<ul style="list-style-type: none"> • Enclosure for EN-50022 rail, 4 modules • Degree of flammability: UL94V-0 • Degree of protection: IP40 (if installed correctly) • Standard operating temperature: from -5°C to +45°C • Approx. weight: 200g • 1 bistable relay output • 2 inputs with no-voltage contacts • Network LED and multifunction LED • Push button for manual switching of the output • SMA antenna connector • max. conductor size which can be held in the terminals: 2.5mm² • programming port
Certifications	<ul style="list-style-type: none"> • EN 301 489-7 V1. 1.1 (2000-09) • EN 301 511 V7. 0.1 (2000-12) • EN 60950 (2000)
Configuration	<ul style="list-style-type: none"> • Device protected by password • Provision for customizing the signalling SMS messages to be sent • Provision for enabling or not enabling sending of error SMS • Sending of notification SMS upon request • Provision for defining “Enabled Users” for remote control of relay output at zero cost
Protection	Device protected by system password preset by the end user.
Control	<ul style="list-style-type: none"> • Provision for sending command SMS messages to the device for: <ul style="list-style-type: none"> ○ Changing output status ○ Status request • Provision for remote control of the relay output of the device

Current drawn (typical values)		Voltage=9V	Voltage=30V
	Standby	40mA	18mA
	Sending\Receiving SMS	100mA	35mA

Software (Requirements)

- **Supported systems:** Windows Server 2003; Windows Server 2008; Windows XP; Windows Vista; Windows 7
- **CPU:** Pentium 400 MHz or equivalent (minimum); Pentium 1 GHz or equivalent (suggested)
- **RAM:** 96 MB (minimum); 256 MB (suggested)
- **Hard Disk:** could be required up to 500 MB on the hard disk
- **CD o DVD Unit:** required
- **Screen resolution:** 800x600, 256 colours (minimum); 1024x768, 65.536 colours, 32 bit (suggested)

Declaration of Conformity

Hereby, **ELETTROTERM Srl**, declares that the device **EL35.009** is in compliance with the essential requirements and other relevant provision of Directive 199/5/EC; as having been designed in conformity with the requirements of following Reference Standards:

- EN 301 489-7 V1.1.1 (2000-09)
- EN 301 511 V7.0.1 (2000-12)
- EN 60950 (2000)