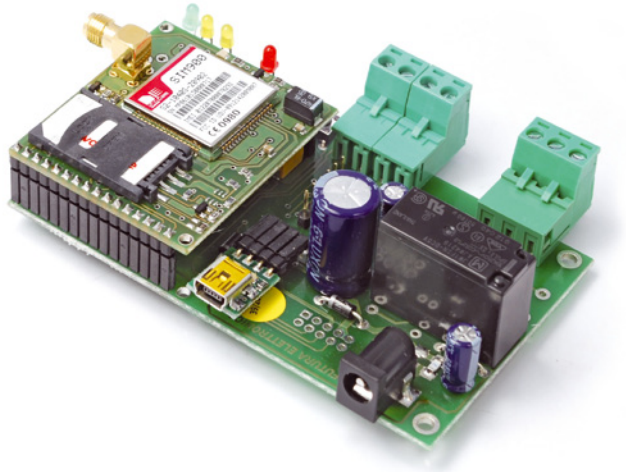
TDG139 - *GSM Temperature control*



Technical data

- GSM / GPRS Module: SIM900 Quad (850/900/1800/1900 MHz)
- GPRS multi-slot class 10/8
- GPRS mobile station class B
- Output power:
  - Class 4 (2 W @ 850-900 MHz)
  - Class 1 (1 W @ 1800-1900 MHz)
- GSM external stylus antenna
- Temperature excursion probe -55 to +99°C (-67 to 210°F); device -10 to +55°C (14 to 131°F).
- 1 input logic level (IN1), controlled by the NO contact of the external thermostat
- 1 alarm input opto-isolated logic level (IN2), (boiler al arm blocked)
- 1 relay output (to control low tension loads, SELV type < 60 Vdc) manageable in Automatic, Manual or Slave to the external thermostat
- Max current relay contacts: 10 A
- Operation setting via SMS, local button and computer
- Power supply: 9 to 32 Vdc stabilized (or with Li-Ion battery 800 ÷ 1,000 mA/h)
- Idle current: 50 mA idle, peak up to 1 A
- Dimensions: 103x67x28 (LxWxH) mm
- Complies with EN 60950-1 (2006), EN 301489-7 V.1.3.1, EN 301511 V9.0.2

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1. Important information

Please, carefully read the information in this manual before attempting to operate the device in order to protect yourself and use the equipment properly. This device shall be exclusively utilized for its intended use. In no event shall the company Futura Elettronica, or its dealers, be held responsible for any damage, either extraordinary, incidental or indirect of any nature (financial, physical, etc.), arising from the possession, use or failure of this product. In case of changes to the device, tampering, or non-compliance with the instructions in this manual the warranty will be null and void.

The device contains highly integrated components that can be damaged by electrostatic discharge. Therefore, do not touch any metal part (tracks, component terminals, etc.) with your hands. Only handle the device by the edges in order to avoid touching the components on the board.

Notice

The user who makes the module operational by adding further components or by putting it into a housing is seen as a manufacturer and is obliged to hand out all the necessary technical documentation as well as place his name and address on the device. Products made with this equipment have to be considered as industrial products from the safety perspective.
The phone costs related to sending SMS generated by the device are charged on the SIM in the device.

2. Safety instructions

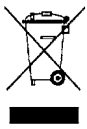
In accordance with the current regulations on safety, whenever using a device under tension all necessary precautions shall be taken. The device must always be installed in absence of tension.

- The device must be placed into a suitable housing before use. During the installation, the device must not be connected to the power source or to other devices.
- Before handling the device or opening the container where it has been placed, unplug the power connector and make sure the circuit is not live.
- Before working with any kind of tool on the device make sure it is disconnected from the power supply and that components that store energy (capacitors) are discharged.
- All cables connected to the device, particularly the power supply ones, have to be checked regularly for fractures or damage of the isolation shield. If cables are visibly damaged, the device has to be switched off immediately until they have been replaced.
- Strictly comply with the technical specifications of components or modules used with this device. If the information contained herein and/or the information on the components or modules used with the device are not clear enough, please contact a

qualified technician.
- Before starting the device, carefully check whether it is suitable for the intended field of application. In case of doubt, please contact a qualified technician or the Manufacturer / Dealer.
- The Manufacturer / Dealer cannot be held responsible for improper handling or wrong connections, therefore it cannot be held responsible for any damage that may result.
- Devices that operate with <35 Volts must be connected by a qualified technician.
- Before starting the device check there is no current leakage in the housing.

3. General information

For EU residents
Environmental information related to this product



This symbol on the device or package indicates it is forbidden to dispose of the product in the environment at the end of its lifecycle as it could be harmful for the environment itself. Do not dispose of the product (or batteries, if used) as unsorted waste.
For more information about the recycling of this product, please contact the city hall, your local waste disposal service, or the shop where it was purchased.

4. Operating conditions

Warning: before making connections to the device, carefully verify that the supply tension and the tension applied to the inputs correspond to those described in this manual!

Important information:

- The device must be installed in compliance with the current safety standards.

- Supply the device only with stabilized DC tension between 9 and 32 Vdc, to be applied to the power plug (see Picture) keeping in mind the polarity (center positive). Use a safety current-limited power supply providing current of at least 500 mA that is also able to cope with absorption peaks of 1A A. The power cable must not exceed 3 meters.

- The relay outputs in the device can only be used to control low tension loads SELV type (<60 Vdc).

- The switching current on the relays must not exceed 10 A (*).

- The container used to house the device must have adequate ventilation holes!
- The device can work in any position.

- Check that the section of the cables used is enough.

•The operating temperature of the device ranges between -10°C and +55°C (14 °F - 131 °F).

•If moisture condensation occurs, wait for at least 2 hours before starting the equipment.

•Keep the device away from flower vases, sinks, water pipes, etc.

•Protect the device from moisture, spray water and heat.

•The device is meant for operation in clean and dry rooms.

•Do not expose the device to heavy vibrations.

•Do not use the device in presence of flammable gases, vapors or dust.

•The device can only be repaired by a qualified technician.

•When repairing the unit, original parts must be used. The use of differing spare parts can cause serious material loss or personal injury.

*the tracks connecting the relay contacts to the terminal are sized considering a load activation which absorbs 10 A for short periods of time.

5. Operation of the device

The TDG139 is a GSM remote control system easy to install and simple to use; the device allows you to remotely manage, via specific SMS, the heating in a home or office and also to control the temperature of the room where it is installed, simply by calling the phone number of the SIM Card in the device.
The unit also functions as a remote alarm, it has an opto-isolated input tension level that can be connected to the boiler malfunction indicator and set to suit different operating conditions (so as to send a warning if it receives more that the threshold voltage); by doing so, if the system gets blocked (due to an obstruction in the chimney, the excessive lowering of fluid pressure in the radiators, the lack of gas, etc.) the system remotely communicates the anomaly via an alarm SMS or a phone call.
The system also includes a thermal alarm triggered when the temperature in the room exceeds the limit set by the user, i.e. it exceeds an upper limit or falls below the minimum one; as the one connected to the boiler indicator, the thermal alarm may cause the sending of SMS or calls. The circuit can store up to eight phone numbers to send alarms in the form of text messages or simple calls, those numbers are also approved to manage certain functions of the device without using a password. In order to quickly set the module, it is also possible to use a computer with the special “TDG Configurator” software, connected via USB (code FT782M) to be installed directly on the board of

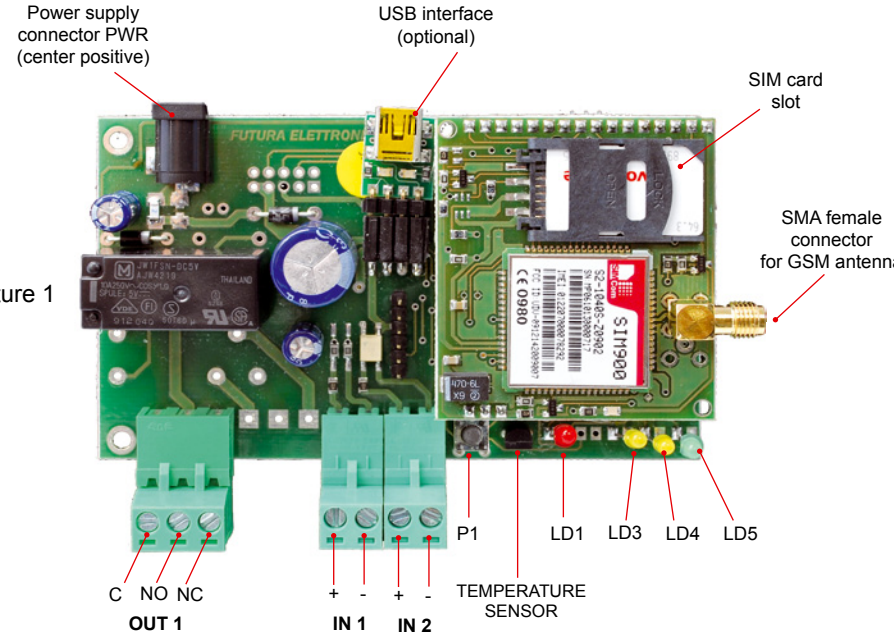
the device.
The device needs an active SIM Card from any GSM network provider using GSM 1800/ MHz networks. When using a prepaid SIM Card always check the available credit so that the device can send a reply message to any possible command (if the function has been enabled).

6. Connectors and LEDs

As shown in figure 1, the TDG139 remote control has a 7-pin terminal to connect contacts NC, NO and C of its relay (OUT1) and input terminals IN1 (RELAY) and IN2 (LED). Connect the supply tension (between 9 and 32 Vdc) of the device to the outlet marked PWR (center positive). Via USB (optional) directly installed on the board you can connect a computer; with the special “TDG Configurator” software it is possible to make all programming and function setting as well as visualize information regarding the connection and the temperature values registered by the device.

Button P1 is used to choose one of the three available modes (T=Thermostat, A=Automatic, M=Manual)

Picture 1



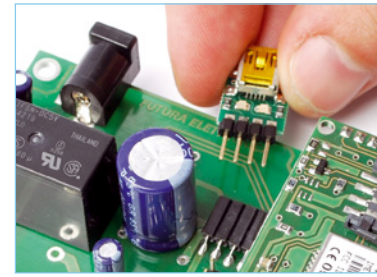
Functions of the LEDs:
LD3 (on): “T” mode, enslaved to the external thermostat (the relay reproduces the state of the room thermostat).
LD4 (on): “A” automatic mode (the relay status depends on the room temperature and on the settings set via SMS).
LD3 and LD4 (both on): “M” manual mode (the relay is always active, disregarding the rest of the settings).
“LD3” and “LD4” also report a CONFIGURATION CALL on hold (both LEDs turn on alternately) after start-up and without phone numbers stored in the list.

LD5: (on) receiving call.
(flashing at 1Hz frequency) relay research.
(quick flash every two seconds) hooked in the network.

LD1: (on) relay excited.
(off) relay unexcited.

7. Installing the USB

A special USB interface (code FT782M), available separately, must be installed on the remote control card as shown in the picture alongside, the mini USB connector must be upwards.



8. Start-up

You must first obtain a valid SIM Card from a GSM network provider. Use a common mobile phone to disable the SIM Card PIN. To do so check the manual of the mobile. **If the SIM Card PIN is not disabled, the device cannot work as it cannot connect to the GSM network.**
Before feeding the TDG139, please insert the SIM Card into the SIM Card holder (mind the orientation) making sure it is correctly blocked, then connect the antenna cable to the connector. Now connect the power supply.

9. Configuration

The device can be set as follows:
- EASY SETUP (Configuration through call)
- PROFESSIONAL SETUP (Configuration through SMS)
- Computer SETUP (Configuration through PC connection: it needs a USB interface, code FT782M available separately)

1) EASY SETUP (Configuration through call made on start-up)
When the device is supplied with power, “LD5” will immediately flash at 1 Hz frequency. The TDG139 will try to connect to the GSM network; when connected, “LD5” will briefly flash every 2 seconds or so. After the system initialization (which may take several seconds), the device alternately illuminates the yellow LEDs “LD3” and “LD4” to indicate

the “configuration call” on hold, which should take place within 3 minutes. If during this time the unit receives a call, it stores the caller’s number (that number will be enabled to manage all the available functions) in the first memory location, it turns the two LEDs off and becomes operative; otherwise, at the end of the interval, it switches off the yellow LEDs and waits for the configuration SMS (“PROFESSIONAL SETUP” mode).

2) PROFESSIONAL SETUP (Configuration through SMS executable at any time)
This mode takes full advantage of the device with operations as output switch, mode and threshold setting, inhibition time setting query, room temperature query, adding supplementary phone numbers to manage the device, reception of alarm messages and ringtones, in general it is used to set the TDG139 with all parameters via simple SMS. A full reset to restore the default settings can also be made via SMS. The syntax for all available commands can be found in **Section 11 (Configuration SMS).**

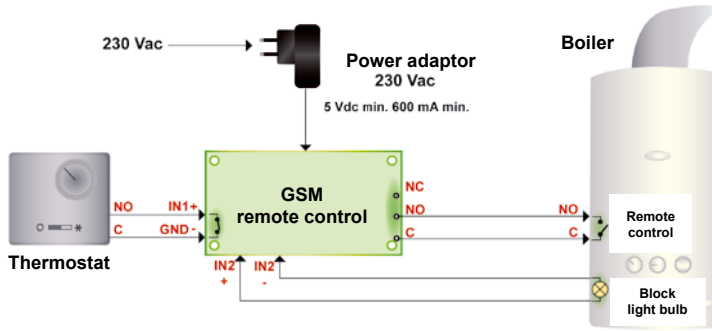
3) Computer SETUP (Configuration through PC connection)
This mode allows you to quickly set up the TDG139 - with no additional cost - through a computer (using a special software) connected via USB code FT782M (optional). **Chapter 13** provides all the necessary information to make the best use of this configuration mode.

Configuration through call
Turn on the device, wait till the yellow LEDs “LD3” and “LD4” start to flash alternately; then, with the mobile used to control the TDG139 call the phone number corresponding to the SIM Card in the remote control. The device will reject the call and store the caller number in the first memory location. “LD3” and “LD4” will flash rapidly to indicate the operation.
Check that the mobile used for the configuration has an active ID, i.e. the “hidden call” or “private call” has not been enabled. To return to the standard configuration with active ID, please refer to the mobile instruction’s manual. To check your own mobile configuration simply call another mobile: The caller ID is active if it displays the number or name of the calling mobile.
NOTE: Yellow LEDs “LD3” and “LD4” lighten up alternately until the TDG133 is set up with a call within the first three minutes of start-up. If time is up and no configuration has been made, the TDG133 turns off the two LEDs and waits for the configuration SMS. The EASY SETUP mode can be restored by disconnecting and reconnecting the power supply: you will have three minutes to set up the device.

10. Connections and operating conditions

The remote must be connected to the heating system as shown on Picture 2. The device can track the status of a power line, as for example, the one corresponding to the boiler alarm indicator, however galvanically isolated from it. Input **IN2** must therefore be connected in parallel to the light bulb of the boiler that indicates the block (when doing the wiring work, make sure the boiler alarm indicator is in low tension and the **positive** is connected

Picture 2



to + in input IN2). In this way, if the system gets blocked (due to an obstruction in the chimney, the excessive lowering of the fluid pressure in the radiators, the lack of gas, etc.) the system remotely communicates the anomaly with an alarm SMS or a call. Please note that the alarm on the opto-isolated input is valid only when the circuit is working in automatic mode (**A**).

The open contact of the relay (**NO** of **OUT1**) must be used to close the remote control of the boiler; if the boiler is connected to its own thermostat, disconnect and make the connections as shown above. Connect the two wires of the thermostat to input **IN1** of the board and outputs **NO** and C of the relay to the control of the boiler. As for the existing thermostat, in presence of a summer/winter element, please only consider the contact related to the boiler control (not the cooling one). If the thermostat only has one contact and it's an electronic one, or if it has a summer/winter selector, it must be placed on winter (snowflake symbol). Once the system is done, feed the unit with a power supply, providing at least 9V/500 mA, but also able to provide current peaks of about 1A. The device can also register the temperature in the room it is installed (with the help of a very precise probe: the DS1820 (useful for the thermal alarm function) that informs the user if the maximum threshold is exceeded or if it lowers beyond the minimum set threshold. As the one connected to the boiler indicator, the thermal alarm can determine the sending of SMS or phone calls. The circuit can store up to eight phone numbers to which send alarms as SMS or simple calls. During the first start-up, unless the unit has been reset, the TDG139 works, by default, in **Automatic** (**A**) **mode**, i.e. it activates the relay when the sensed temperature in the room is under the one set by the user subtracted to the value defined as hysteresis (default is 0,5°C / 32,9 °F). For example, if the temperature to maintain is 22 °C / 71,6 °F and hysteresis is 0,3 °C / 32,54 °F, the relay operates at 21,7 °C / 71,06 °F (22-0,3). This condition is shown by the turning on of the yellow LED (LD4).

10.1 Choosing a mode

Locally, by pressing a button you can sequentially define a different mode:

By pressing P1 till the LEDs flash rapidly, you can enter the functioning mode, then by pressing P1 again, it goes from automatic mode to the **Forced (M)** one, where RL1 is always active until disabled via SMS or mode is changed; the condition is shown by the turning on of "LD3" and "LD4".

By pressing the button one more time, you access the **Enslaved (T)** mode, shown by the

turning on of “LD3” only: here, the circuit follows the pattern of the thermostat connected to input IN1, i.e. the relay clicks (closes C on NO) if the input is shorted or remains idle in the opposite case (open input). Pressing P1 once again takes the unit back to **Automatic (A)** mode. After 10 seconds being inactive, the chosen mode is automatically applied.
Note: If the circuit remotely (through SMS) receives the order to set a mode different from the one set locally with button P1, the order is a priority; i.e. the phone command (as well as he computer one) cancels P1 command.

11. Configuration SMS

Commands and settings can be sent from any mobile via SMS as long as the message includes the password (essential to ensure the setting cannot be made by outsiders).
To speed up certain commands, it is possible for the device to store 8 numbers enabled to send commands without the password. The numbers in the list are the same to which (if enabled) the device will send SMS or ringtones to indicate an alarm situation.
However, there is a series of “sensitive” functions that, no matter who sends the SMS, still need a password. In particular, functions that add or remove other numbers from the list, that change the current password, or request the list of approved numbers. As a result of a command or query, the device replies with an execution confirmation SMS or a SMS with information about the settings.
Please note that all commands that do not require a password are effective only if they come from a recognized phone, that is a phone which number is in the list of those stored in the remote; an outsider needs a password.
The remote accepts multiple SMS, that is SMS with more than one command in order to save money; commands must be separated by a comma. Of course, a multiple command will produce several answer messages, in order to disable this you can disable the reply by adding at the beginning of the multi command SMS the string RISP, (see the description of this command).
Here we present and describe all commands that can be sent to the device via SMS.
Note: every command must be written without spaces.

- Command ***PWDxxxxx;pwd*** changes the password; ***xxxxx*** is the new password (numeric, five digits); ***pwd*** is the current password (the default password is 12345).
  Example: 54321 as the new password and 12345 as the current password
  PWD54321;12345
  Note: The password is required.

- Command ***NUMx+39nnnnnnnnnnn;pwd*** stores a phone number (up to 8 numbers, 19 digits each) in the device; ***x*** is its position in the list; ***nnnnnnnnnn*** is the phone number with country code (+39 for Italy); pwd is the current password.
  Example: How to enter number 3498911512 in the 8th position
  NUM8+393498911512;12345
  Note: The password is required only if you try to save the number in a position already occupied by another one, or when the command is sent from a phone that is not in the list. If the command is sent from an unknown phone, the password is always

required.

- Command ***NUMx;pwd*** removes a phone number from the list; ***x*** is its position in the list; ***pwd*** is the current password.
  Example: How to delete the 4th phone number from the stored list
  NUM4;12345
  Note: The password is required.

- Command ***NUM?;pwd*** requests the list of phone numbers currently stored in the device; ***pwd*** is the current password.
  Example:
  NUM?;12345
  Note: The password is required.

- Command ***RES;pwd*** restores the initial settings (default) of the system (also the stored phone numbers are deleted); ***pwd*** is the current password.
  Example:
  RES;12345
  Note: The password is required.

RL1 can be managed any time no matter the chosen functioning mode:

- Command ***OUT:ON*** activates the output relay (if idle).
  Example: How to activate the output relay
  OUT:ON

- Command ***OUT:OFF*** disables the output relay (if idle).
  Example: How to disable the output relay
  OUT:OFF

- Command ***OUT?*** requests the output relay status of the remote.
  Example:
  OUT?

- In case of black-out, command ***RIPx*** stores the relay status and restores it when power is back on; ***x*** has a value of 1 to enable restoring, 0 to disable it. The default value is 1.
  Example: How to enable the relay status recovery on start-up
  RIP1
  Example: How to disable the relay status recovery on start-up
  RIP0

- Command ***RIP?*** requests the current setting for the relay status recovery.
  Example:
  RIP?

- Command ***FUN:x*** remotely sets the functioning mode of the device; x can have the following values:
  • ***T***, enslaved mode (RL1 follows the external thermostat);
  • ***A***, automatic mode;
  • ***M***, the relay is forced active.
  Example: How to set the enslaved mode
  FUN:T
  Note: The set mode is stored and a possible black-out does not change it. The default setting is A.

- Command ***FUN?*** requests the current functioning mode to the device.
  Example:
  FUN?

The remote control has a function related to the sensed room temperature (CURRENT, MIN and MAX):

- Command ***TEMP*** requests the current value of the room temperature as well as the stored MIN and MAX values.
  Example:
  TEMP
  Note: It is also possible to obtain the temperature without sending any SMS. You just need to call de device with a phone number in the list and then hang up; the unit will send a message with the requested data.

- Command ***TRES*** resets the MIN and MAX temperature values registered.
  Example:
  TRES

- Command ***NOR:xx*** sets the room temperature the remote must maintain when functioning in automatic mode; ***xx*** is the desired temperature value (for instance 24), in Celsius (default 22 °C = 71,6 °F).
  Example: How to set a 25 °C (77 °F)
  NOR:25

- Command ***IST:x*** sets the value of threshold between 0,1 and 0,9 °C (32,18 – 33,62 °F); ***x*** is the desired hysteresis and can have a value between 1 and 9 (1 for 0,1 °C, 9 for 0,9 °C). Note: The default value is 0,5 °C (32,9 °F).
  Example: How to set the relay intervention when the room temperature drops by 0,4 °C (32,72 °F) in relation to the temperature value to be maintained (23 °C / 73,4 °F)
  IST:4

- Command ***IST?*** requests the set hysteresis value to the device.

The alarm can be generated by the presence of tension on the opto-isolated input IN2, as well as when the room temperature is out of the parameters previously set by means

of these commands:

- Command ***ALLMIN:yxx*** defines the minimum threshold of the thermal alarm; in the place of y place the sign + or - for positive or negative temperature; ***xx*** is the absolute value in two digits, keeping in mind it is possible to set values between -10 and +99 °C (14 – 210,2 °F).
  Example: How to set a minimum threshold of -5 °C (23 °F)
  ALLMIN:-05

- Command ***ALLMAX:yxx*** defines the maximum threshold of the thermal alarm; in the place of y place the sign + or- for positive or negative temperature; ***xx*** is the absolute value in two digits, keeping in mind it is possible to set values between -10 and +99 °C (14 – 210,2 °F) .
  Example: How to set a maximum threshold of +30°C
  ALLMAX:+30

Note: In the last two examples the remote will start the alarm sequence for temperatures under -5 °C (23 °F) and over
+30°C (86 °F).
Please note that by default (and also after a full reset) no values are defined and the thermal alarm is disabled; it is
possible to set only one value, but in this case the alarm goes off only when trespassing that threshold.

- Command ***ALL?*** requests the device the values of the thermal alarm temperature.
  Example:
  ALL?

- Command ***ALL:OFF*** disarms the thermal alarm.
  Example:
  ALL:OFF

- Command ***ALL:ON*** sets the thermal alarm.
  Example:
  ALL:ON

It is possible to set an inhibition range for the thermal alarm, useful when the TDG139 is used to control a room which thermal excursion varies slowly; the range is also useful, for instance, when the user, after receiving an alarm that states the room has cooled excessively, remotely forces the heating. In that case, if you do not set an inhibition range enough in order to give the heating system the time to raise the temperature beyond the threshold alarm, the remote continues to send SMS and calls.

- Command ***INT:mm*** sets the inhibition range by thermal alarm detection; mm are the minutes (between 00 and 59).
  Example: How to set a 10-minute range
  INT:10
  Note: The default value is 5 minutes.

- Command ***INC:mm*** sets the inhibition range by boiler block alarm detection (during this intervention the IN2 status is not considered); mm are the minutes (between 00 and 59).
  Example: How to set a 15-minute range
  INC:15
  Note: The default value is 5 minutes.

Below we present the commands used to set the numbers in the list to which the device will send the alarm SMS or calls (in case of tension presence in the opto-isolated input IN2 or when the room temperature is out of the set values).

- Command ***SMSxxxxxxxx:ON;pwd*** defines the numbers to which the device sends a SMS in case of alarm; ***x*** are the positions of the stored phone numbers (from 1 to 8); pwd is the current password.
  Example: How to enable the reception of alarm SMS for numbers 1, 3, 6 and 7 in the list
  SMS1367:ON;12345
  Note: By default, all numbers in the eight positions of the list (if they exist) will receive a SMS in case of alarm.

- Command ***SMSxxxxxxxx:OFF;pwd*** defines the numbers to which the device does not send a SMS in case of alarm; x are the positions of the stored phone numbers (from 1 to 8); ***pwd*** is the current password.
  Example: How to disable the reception of alarm SMS for numbers 2, 4, 8 and in the list
  SMS248:OFF;12345

- Command ***VOCxxxxxxxx:ON;pwd*** defines the numbers to which the device will send a ringtone in case of alarm; ***x*** are the positions of the stored numbers (from 1 to 8); ***pwd*** is the current password.
  Example: How to enable the reception of alarm ringtones for numbers 1, 3, 6 and 7 in the list
  VOC1367:ON;12345

- Command ***VOCxxxxxxxx:OFF***;pwd defines the numbers to which the device does not send a ringtone in case of alarm; ***x*** are the positions of the stored phone numbers (from 1 to 8); ***pwd*** is the current password.
  Example: How to disable the reception of alarm ringtones for numbers 2, 4, 8 and in the list
  VOC248:OFF;12345

Note: Generally, a call is quicker that a SMS, for that reason, this function can be very useful and cheaper (since there is no need to answer the call).

The remote control sends a customizable SMS to the first phone number in the list every time it is supplied:

- Command ***AVVx*** enables or disables the sending of a SMS during start-up; ***x*** has a value of 1 to enable it, 0 to disable it. The default value is 0.
  Example: How to enable the start-up SMS
  AVV1
  Example: How to disable the start-up SMS
  AVV0

- Command ***TSU:xxxxxxxxxxxx*** sets the message of the text the remote sends during start-up; ***xxxxxxxxxxx*** is the text you want to write (100 character max. including spaces).
  The semi colon (;) is not accepted, letters must all be capitalized.
  The default phrase is: SYSTEM STARTUP.
  Example: How to set the start-up message “DEVICE TDG139 ACTIVE”
  TSU:DEVICE TDG139 ACTIVE

Regarding the activity on input IN2, it is possible to set the notification message corresponding to the presence of tension:

- Command ***TIN:xxxx*** defines the message the device sends to the numbers in the list enabled to receive alarm SMS when input IN2 is alerted on the presence of tension; ***xxxx*** is the message you want to write (100 characters max. including spaces.
  The semi colon (;) is not accepted, letters must all be capitalized.
  The default message is: INPUT ALARM!!
  Example: How to set the alarm message “BOILER BLOCKED” (when there is tension on IN2)
  TIN:BOILER BLOCKED

Messages for thermal alarm: It is possible to individually define those that come from exceeding the upper threshold and from the falling of the temperature under the inferior threshold:

- Command ***THI:xxxxxxxxxxxx*** sets the message the remote sends to the numbers in the list enabled to receive alarm SMS in case the maximum temperature threshold is exceeded (ALLMAX); ***xxxxxxxxxxx*** is the message you want to write (100 characters max. including spaces).
  The semi colon (;) is not accepted, letters must all be capitalized.
  The default phrase is: ALARM!! TEMPERATURE THRESHOLD EXCEEDED
  Example: How to set the alarm message “MAXIMUM THRESHOLD EXCEEDED!!”
  THI:MAXIMUM THRESHOLD EXCEEDED!!

- Command ***TLO:xxxxxxxxxxxx*** sets the message the remote sends to the numbers in the list enabled to receive alarm SMS in case the minimum temperature falls under the threshold (ALLMIN); ***xxxxxxxxxxx*** is the message you want to write (100 characters max. including spaces).
  The semi colon (;) is not accepted, letters must all be capitalized.
  The default phrase is: ALARM!! TEMPERATURE THRESHOLD EXCEEDED
  Example: How to set the alarm message “MINIMUM THRESHOLD EXCEEDED!!”

TLO:MINIMUM THRESHOLD EXCEEDED!!

As already mentioned at the beginning of Chapter 11, the system accepts messages with multiple commands separated by a comma, helping the user save time and money. There follows that the system replies to certain commands with more than one SMS. This can be avoided by means of a command placed at the beginning of the SMS sent to the TDG139:

- Command ***RISP***, at the beginning of a multiple message disables all reply messages. Example: How to disable the answer message related to the sent commands: ***RISP,OUT:ON,TRES, INT:10***

12 Table of command and configuration SMS

FUNCTION	SMS COMMAND	DEFAULT VALUE	PWD REQUIRED
PASSWORD (PWD)		12345	
PASSWORD REPLACEMENT	PWDxxxxx; 12345	12345	ALWAYS
STORING A NUMBER IN POSITION "x" (up to 8 numbers, 19 digits max. each)	NUMx+392229876543;12345	-	ONLY IF THE POSITION IS OCCUPIED
DELETE A NUMBER	NUMx;12345	-	ALWAYS
CHECK STORED NUMBERS	NUM?;12345	-	ALWAYS
FULL RESET OF ALL PARAMETERS	RES	-	ALWAYS
RELAY ACTIVATION IN BISTABLE MODE	OUT:ON	Relay idle	
RELAY DEACTIVATION IN BISTABLE MODE	OUT:OFF	Relay idle	
RESET STATUS AFTER BLACK-OUT (x=1: active restoring. x=0: relay disabled after black-out)	RIPx	0	
REQUEST "RESTORING" FUNCTION STATUS	RIP?	-	
SET FUNCTIONING MODE (T=Thermostat, A=Automatic, M=Manual)	FUN:X	A	
REQUEST FUNCTIONING MODE	FUN:?		
REQUEST TEMPERATURE	TEMP		
RESET MIN AND MAX TEMPERATURES	TRES		
SET TEMPERATURE TO BE MAINTAINED (00÷99	NOR:XX	22	
SET HYSTERESIS ON TEMPERATURE	IST:X	0,5	
REQUEST THE SET HYSTERESIS VALUE	IST?		
SET MIN TEMPERATURE ALARM (y = "+" o "–"; xx = 00 ÷ 99)	ALLMIN:yxx		
SET MAX TEMPERATURE ALARM (y = "+" o "–"; xx = 00 ÷ 99)	ALLMAX:yxx		
REQUEST ALARM TEMPERATURE	ALL?		
ENABLE TEMPERATURE ALARM	ALL:ON		

FUNCTION	SMS COMMAND	DEFAULT VALUE	PWD REQUIRED
DISABLE TEMPERATURE ALARM	ALL:OFF		
INHIBITION TIME TEMPERATURE ALARM (00to 59 min.)	INT:mm	5	
INHIBITION TIME BOILER INPUT (00 - 59 min.)	INC:mm	5	
SET THE NUMBERS TO WHICH SMS ARE SENT	SMSxxxxxxxx: ON/OFF	All active	ALWAYS
SET THE NUMBERS TO WHICH A RINGTONE IS SENT	VOCxxxxxxxx: ON/OFF	All active	ALWAYS
AUTOMATICALLY SEND SMS ON START-UP (x=1 automatic sending; x=0 disables sending of SMS)	AVVx	0	
MODIFY TEXT FOR: ALARM TEMPERATURE EXCEEDS MAX THRESHOLD (100 characters max.)	THI:xxxxxxxxxx	ALARM!! TEMPERATURE THRESHOLD EXCEEDED	
MODIFY TEXT FOR: ALARM TEMPERATURE EXCEEDS MIN THRESHOLD (100 characters max.)	TLO:xxxxxxxxxx	ALARM!! TEMPERATURE THRESHOLD EXCEEDED	
MODIFY TEXT FOR: ALARM BOILER INPUT IN PRESENCE OF TENSION (100 characters max)	TIN:xxxxxxxxx	ALARM INPUT!!	
MODIFY TEXT FOR: START-UP MESSAGE (100 characters max. only sent to first number stored)	TSU:xxxxxxxxxx	SYSTEM START-UP	
REQUEST TEMPERATURE (TEMP command)	Phone call to the remote number		
DISABLE REPLY FOR MULTIPLE MESSAGE	RISP, (at the beginning of the message)		

13. Setting the device through a computer

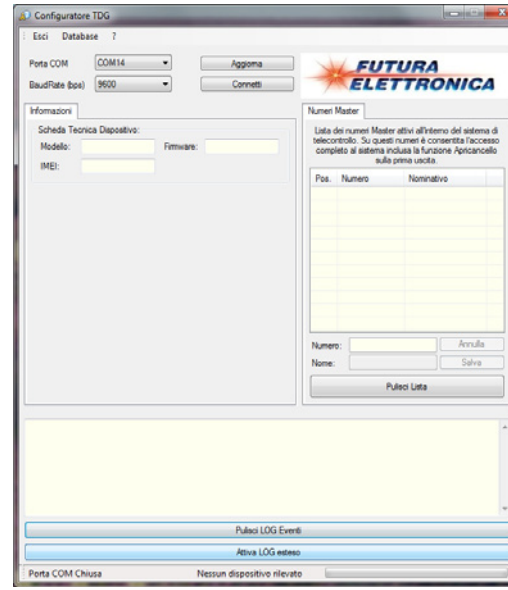
By means of a computer with a specific software and USB interface code FT782M (optional) installed directly on the board, it is possible to interact with the device so as to easily modify all programming and function settings, but specially and also to make the initial setting before installing in the room where it should work.
The use of a computer allows you to save the time and money needed for a full configuration via SMS, which, even by means of multiple messages, shall be slow and expensive. it is also useful when you want to check all settings without requesting them with a SMS.
After starting the software, verify that a communication speed of 9600 Baud (8,N,1) is set.

Installing and using the software
The software can be downloaded at *www.futurashop.it* from the page of the TDG139.

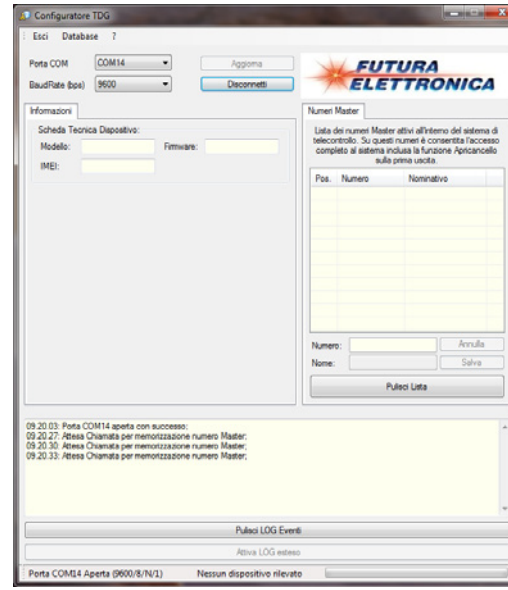
In order to use the management software it is first necessary to install it. Launch the Setup files and follow the installation instructions as they appear. Once this is done, start the program. After this, the window “TDG Configurator” appears on the screen; through this window it is possible to modify all the settings of the device, add users,

change the password, etc. It is an intuitive program and the graphic interface simplifies this procedure.

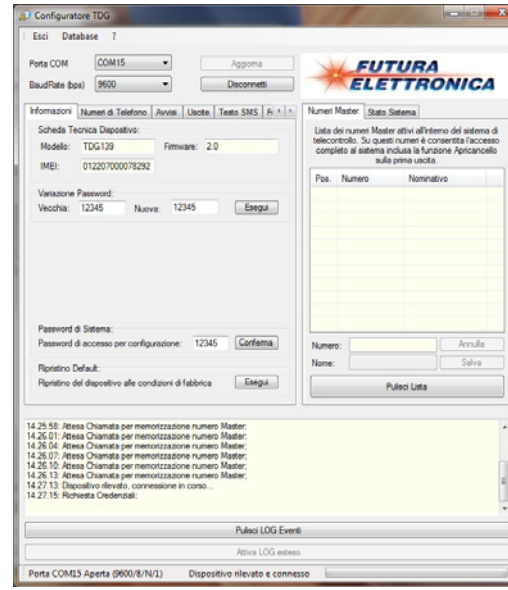
So as to use the available commands supply and connect the TDG139 to the computer, then select the communication port “COM” (top left) created. If need be, with the “Update” button you can update the list related to the available ports in the computer. Afterwards, press “Connect” to activate the connection and wait for the screen to update with all the data on the connected module. From now on, the TDG139 can be managed from your computer (PC mode is shown by “LD3” on).



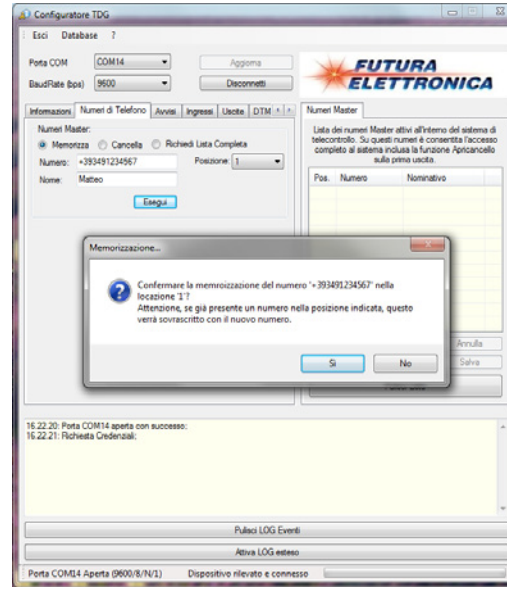
If the device was connected to the computer before the storage of the first master number, the message “Waiting for Call for Master Number Storage” will appear on the log window (down). In order to continue with the setting, make the call so as to store the number. The execution will be confirmed with a message on the log window.



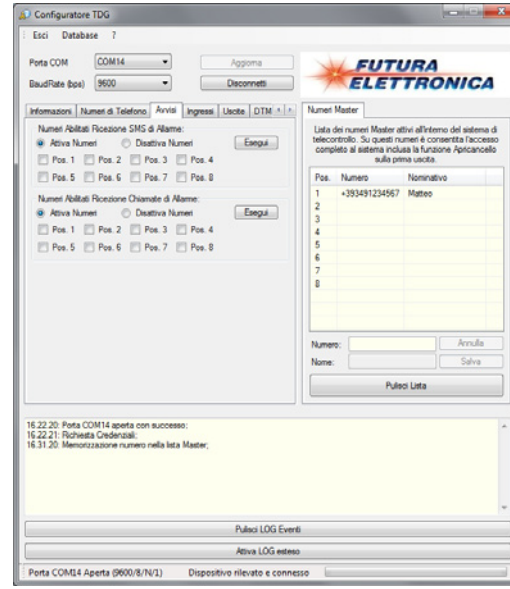
In the “Information” tab you can find the IMEI and the firmware version of the connected device. in order to modify the access password stored in the device, type in the fields “Old” and “New” the desired password, and press “Run”.
To access the system and make all possible settings, please type the current password in the field “System password”, then press “Confirm”. If the device does not reply to the commands sent from the computer, make sure the password stored in the PC is the same as the one specified in the management program.



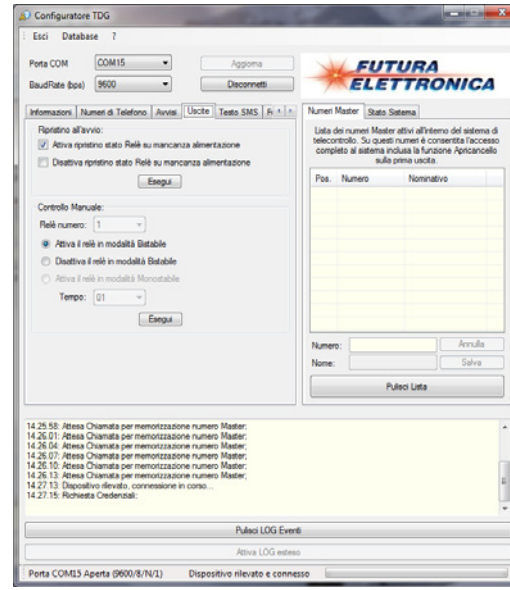
Management of phone numbers enabled to control the device is done through the folder “Telephone Numbers”.
It is possible to store or delete enabled numbers and to request the full list (visible on the right of the window) of those numbers in the device. Every selected operation (“Store”, “Delete” or “Request Full List”) must be confirmed by pressing “Run”.



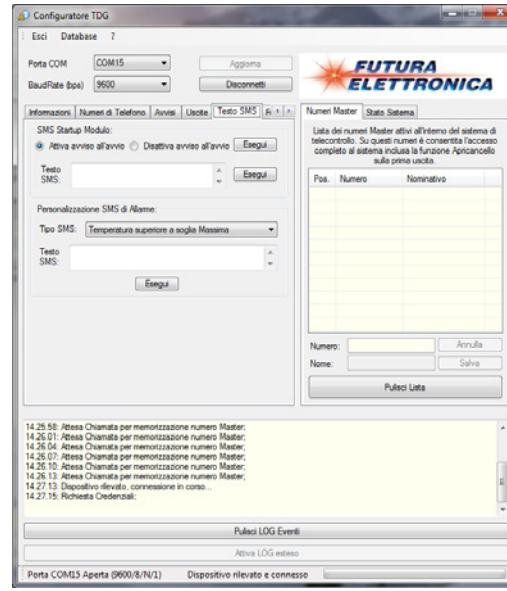
The tab “Notices” is used to enable or disable numbers on specific positions in the list, enabled to receive alarm SMS or calls.



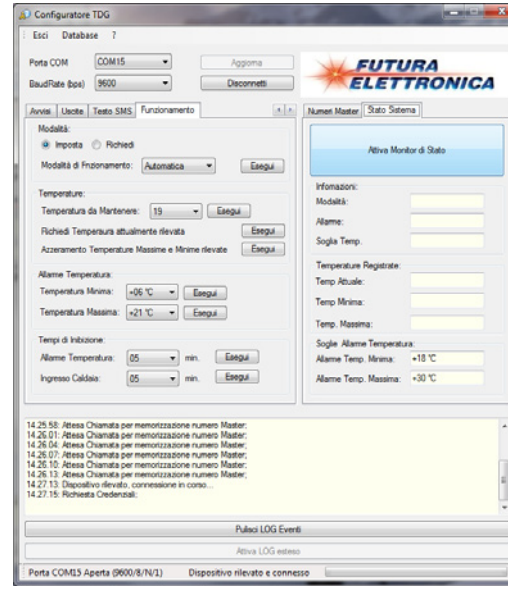
The tab “Outputs” is used to enable or disable the function “Restore Relay Status in absence of tension” and directly manage the relay.



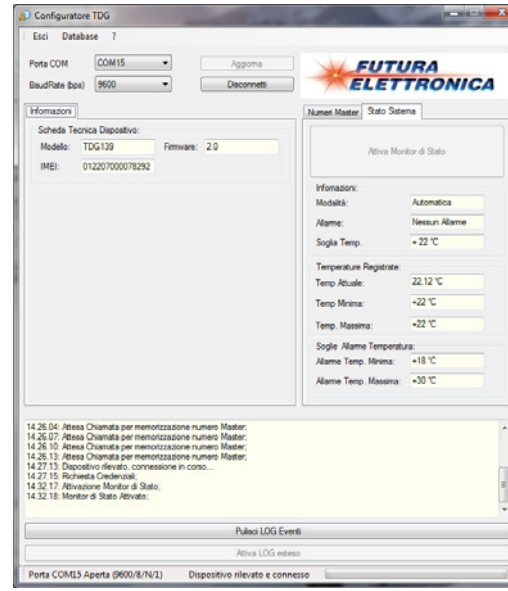
The text of the notification SMS sent from the device after exceeding the min. or max. temperature threshold set, after the boiler block or a black-out can be defined by the user through the window “SMS Text”.



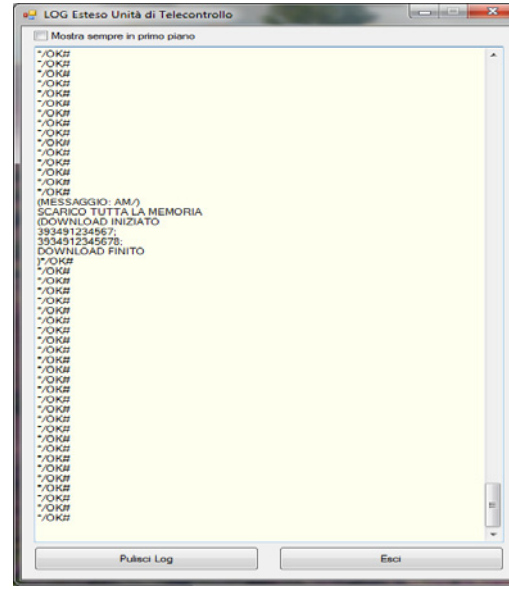
The folder “Functioning” gathers all settings that define the circuit configuration, as the room temperature threshold, the thermal alarm threshold, and the inhibition ranges of the boiler input and the temperature alarm.



Enabling the “Status Monitoring” you can control, in real time, the room temperature the system senses, the min. and max. registered values, the thresholds for the set temperatures and information regarding the active alarm.



Pressing “Activate Extended Log” it is possible to visualize, in a specific window, all data in transit through the communication port.



The software version can be seen pressing “?” on the menu bar.

Important: Management via SMS is disabled when the TDG139 is connected to the computer.

14. Troubleshooting

The following table presents all possible solutions to some problems that may arise:

Problem	Possible reason	Solution
Green LED LD5 is off	No supply tension or inverted polarity	Check power supply cable
Green LED LD5 flashes cyclically at 1 Hz frequency	No GSM network available or signal intensity not enough	Change the position of the external GSM antenna
The device does not send a reply to the configuration SMS	Reply to the message with command RISP is disabled or there is no credit in the SIM Card.	Do not use the RISP command in the SMS or recharge the SIM Card
During the first start-up LEDS LD3 and LD4 do not lighten alternatively	The device has already been started	Completely reset the device using the RES command
The device does not react to the call from an enabled number	The mobile used for the call has a hidden ID	Enable the ID on outcoming calls
The device cannot engage in the GSM network	The PIN on the SIM Card has not been disabled	Disable the PIN request from the SIM Card

The information in this manual is subject to change without notice.

Technical Assistance
In case of technical problems or questions concerning the TDG139, a hotline is available.
Mon and Wed 2 pm - 6 pm CET (Central Europe Time)
Technical assistance +39 0331 245587

CE 0051

Complies with all applicable
european directives.

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