4005 Series

Universal Cellular Communicator

DSC®

N.	Parts
1	Cover
2	Backplate
3	LED max. GSM reception
4	LED min. GSM reception
5	Trouble LED
6	GSM connection LED
7	Fixing screw (provided in the side position 7, Figure 2)
8	GSM antenna
9	Hinges for closing cover
10	Antenna cable hole
11	2700mAh rechargeable battery (accessory Item): only GS4005, 3G4005/AM and 3G4005/EU
12	Antitamper device
13	Fixing screw for antitamper device
14	SIM-Card port
15	PC-LINK connector
16	Jumpers PST, USB, TMP, UFC: see par. "Jumper Description" on page 7

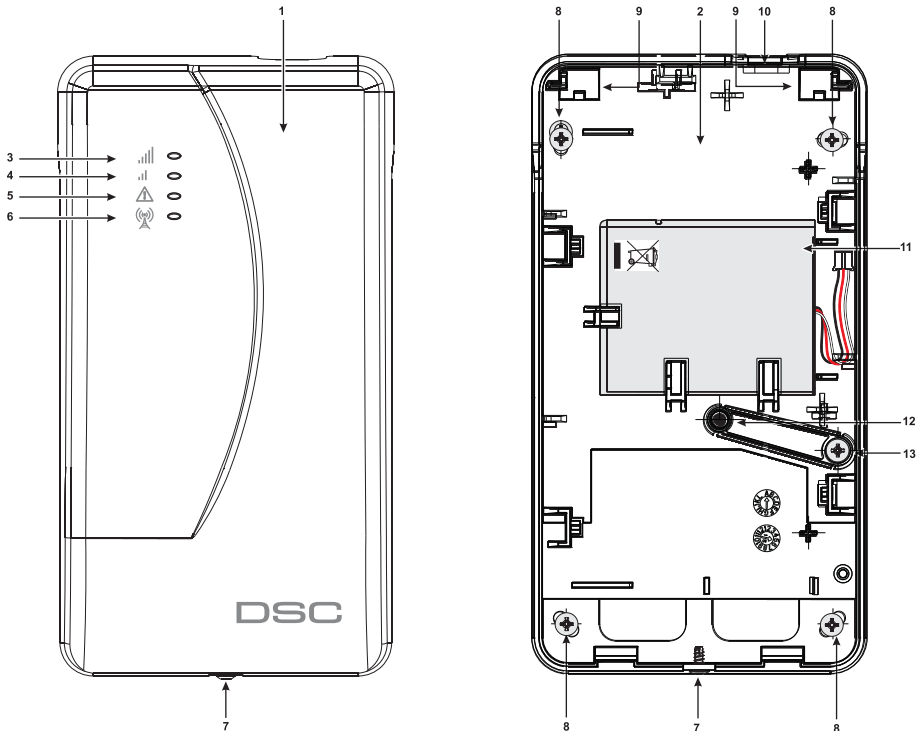| N.	Parts
17	USB port: only GS4005, 3G4005/AM and 3G4005/EU
18	Antitamper contact
19	Terminal boards
20	Positioning pins for PCB mounting
21	Jumper 1: see par. "Jumper Description" on page 7
22	Battery connector: only GS4005, 3G4005/AM and 3G4005/EU
23	Cable adapter for GSM antenna
24	Nut and washer to secure the cable adapter for GSM antenna
25	Integrated antenna: only GS4005, 3G4005/AM and 3G4005/EU
26	Hole for antenna cable on the metal bracket
27	Wall bracket
28	ANT5-02, GSM antenna with 2 m cable and SMA connector (accessory item)
29	GSM antenna with 2 m cable and MMC connector
30	Adhesive plastic support: only GS4005-K, 3G4005-K/AM and 3G4005-K/EU

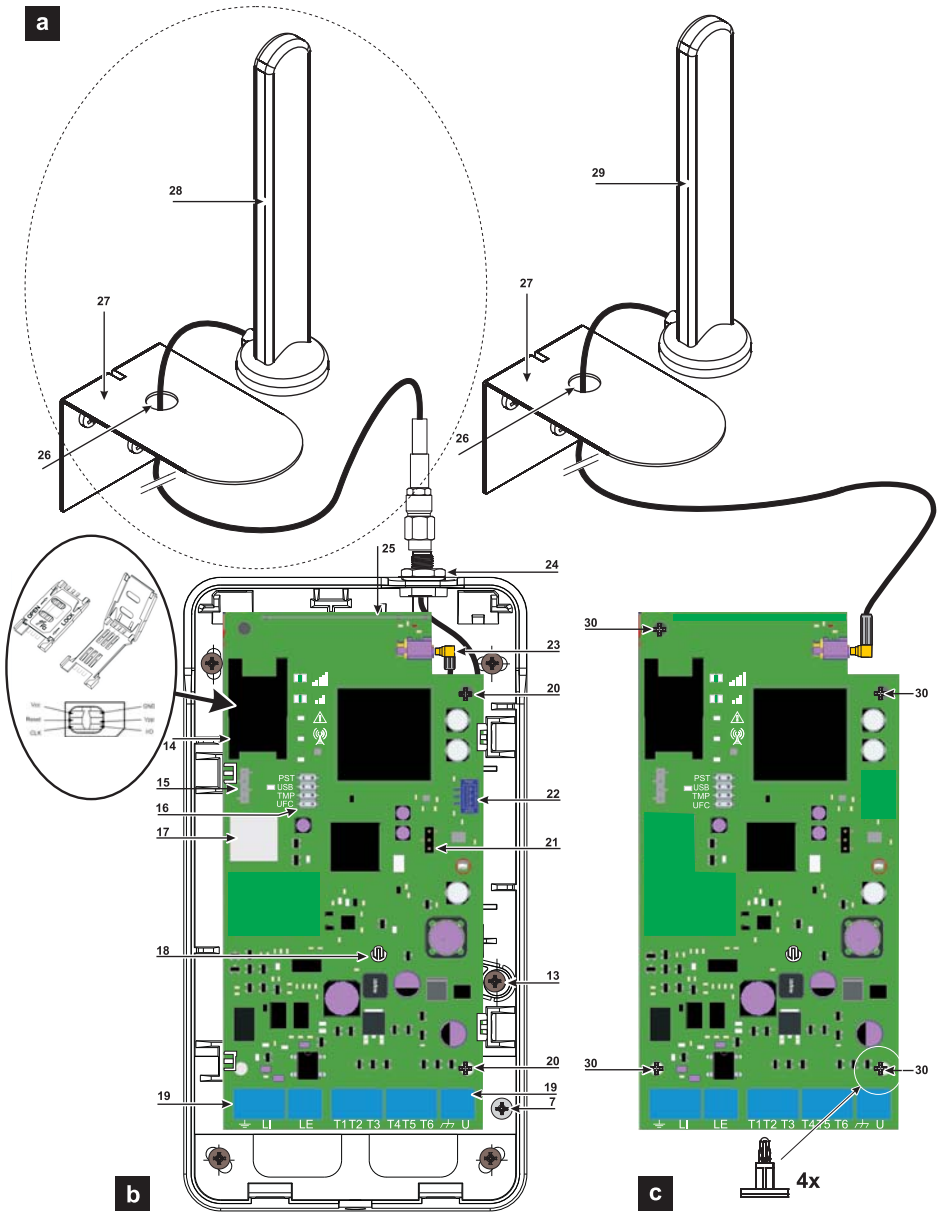**Figure 1 –** *Box parts (only GS4005, 3G4005/AM and 3G4005/EU).*

Figure 2 – *Parts identifications:* ***a)*** *ANT5-02, GSM antenna with 2 m cable and SMA connector (accessory item);* ***b)*** *GS4005, 3G4005/AM and 3G4005/EU;* ***c)*** *GS4005-K, 3G4005-K/AM and 3G4005-K/EU.*

INTRODUCTION

Devices in the 4005 Series are GSM communicators which, in the absence of a PSTN line, transmits vocal and digital alarms to System III or System II receivers, via GPRS GPRS Quad-Band (HSPA Dual-Band). The following models are available.

➢ **GS4005**: communicator with 2G module in the plastic cabinet.
➢ **3G4005/AM**: communicator with 850/1900 MHz 3G module, in the plastic cabinet.
➢ **3G4005/EU**: communicator with 900/1800 MHz 3G module, in the plastic cabinet.
➢ **GS4005-K**: kit including communicator with 2G module, antenna with 2 m cable, adapter and metal bracket.
➢ **3G4005-K/AM**: kit including communicator with 850/1900 MHz 3G module, antenna with 2m cable, adapter and metal bracket.
➢ **3G4005-K/EU**: kit including communicator with 900/1800 MHz 3G module, antenna with 2m cable, adapter and metal bracket.

All information relating to a specific model shall be attested to by reference to the corresponding code. The word "Communicator" is being used to describe functions which are common to the various models. This manual provides programming and operation of the Communicator. If there are any special installation requirements a remote outside antenna (ANT5-15) with 15 m cable is available.

☞ *This Communicator is fixed and shall be installed by Service Persons only (service person is defined as a person having the appropriate technical training and experience necessary to be aware of hazards to which that person may be exposed in performing a task and of measures to minimize the risks to that person or other persons). It shall be installed and used within an environment that provides the pollution degree max 2, over voltages category II, in non-hazardous, indoor locations only. This manual shall be used with the Installation Manual of the alarm control panel.*

General Features
❑ Simulates land line
❑ Switches automatically to GSM Network in the event of land line trouble (line down)
❑ Manages and signals Incoming/Outgoing call
❑ GSM signal indicator
❑ 6 programmable terminals as Open Collector Outputs or Input Lines
❑ Land line overvoltage protection
❑ GSM Quad-Band (HSPA dual-band) o 3G Cellular Communicator
❑ Integrated Antenna on Board or external Antenna with magnetic base: kit including communicator with 850/1900 MHz 3G module, antenna with 2m cable, adapter and metal bracket.
❑ SMS Dialer
❑ Voice Dialer
❑ Supports Contact ID communication format from a connected control panel for communication over the GPRS network
❑ GPRS/Internet communication with receivers Sur-Gard System III / II
❑ PC-programmable options
❑ 32 SMS messages, each with a maximum length of 100 characters (2 for each Input Line plus 6 for Status Indications and 1 Periodic)

❑ 8 telephone numbers (max. 16 digits) programmable for the SMS dialer
❑ 8 phone numbers programmable for Contact ID Dialer on GPRS
❑ Up to 32 telephone numbers (max.16 digits) programmable for the remote activation of the OC output
❑ Remote activation of the outputs through caller identification and/or SMS transmission
❑ Credit balance check for pre-paid SIM Cards
❑ Panel Transmission Monitoring (PTM)
❑ Integrated tamper switches
❑ PC-LINK connector
❑ USB type A connector (Host and Device)
❑ Programming through USB memory stick
❑ Advanced Diagnostic and LOG recording
❑ Local and remote programming and FW upgrade
❑ Alarm event transmission over GSM/GPRS/HSPA
❑ Programmable priority between PSTN/Cellular
❑ Two way voice communication on the cellular
❑ Optional backup battery
❑ Anti-jamming

Technical Specifications

The supply voltage for this communicator is provided by the Control panel connected (10.7 V to 27.6 V) or from an external power supply that provides the 12 V and recharging, if necessary, a back-up battery (accessory item). The only purpose of the battery is to provide the power in the event the primary power source is lost. The required autonomy in stand-by is 8 hours.
In both cases, if the main power is lost the battery assures that the panel will still powered and working.
The main power voltage and the battery voltage will be supervised.
The power supply for the Communicator models GS4005, 3G4005/AM and 3G4005/EU shall be:

➢ SELV type;
➢ Limited power;
➢ Limited to 1 A.

Model	GS4005-K	3G4005-K/AM	3G4005-K/EU	GS4005	3G4005/AM	3G4005/EU
Input Voltage	10.7 to 27.6 V===					
Standby average current, without battery	90 mA (not including outputs) @ 13,8 V===					
Maximum current drawn in current limited mode	230 mA (not including outputs) @ 13,8 V===					
Maximum current drawn	450 mA (not including outputs) @ 13,8 V===					
Outputs	6 open-collector, 100 mA					
Operating frequency (MHz)	900/1800 850/1900	GSM: 850/1900 UMTS: 850/1900	GSM: 900/1800 UMTS: 900/2100	900/1800 850/1900	GSM: 850/1900 UMTS: 850/1900	GSM: 900/1800 UMTS: 900/2100
Maximum loop resistance of line between the device connected in series on LI	1 Kohm					
Maximum number of parallel devices connected on LI	1					
Environmental class	**II**					
Operating Temperature	-10 to +40 °C					
Humidity	0 to 95%					
Dimensions (WxHxD)	76x151x20 mm (PCB only)			101x186x41 mm		
Weight	66 g			250 g		

Table 1: *Technical specifications.*

Interface type between SPT (Supervised Premises Transceiver) and AS (Alarm System)	Proprietary interface	
ATS (Alarm Transmission System)	SINGLE PATH	
Alarm Transmission System performances	SP4 for digital messages	SP2 for vocal/text messages
Average transmission time	D3 (20 s)	D2 (60 s)
Maximum transmission time	M3 (60 s)	M2 (120 s)
Reporting time	T4 (180 s)	T2 (25 h)
Substitution security	S2	S0
Information security	I3	I0

Table 2: *EN 50136-1:2012 e EN 50136-2:2013 specifications.*

Jumpers Description

See Figure 2 on page 3.

Jumper 21
⬛⬛⬤ pins 1 and 2 connected, no input current limit (default);
⬤⬛⬛ pins 2 and 3 connected, input current limit (450 mA, from battery charger side).

PST (Pass-Through)
⬛⬤ open, Pass-Through disabled (default);
⬛⬛ closed, the communicator will be able to perform remote programming of the PC 1864 4.1 EU, PC 1864 4.2 EU, PC 1864 4.2 ADT Spain and PC 1864 4.5 ADT Spain DSC Power Series intrusion panels, via cellular and PC-Link.

USB
The communicator, according to the jumper setting, from the USB point of view may be Host or Device:
⬛⬤ open, **Device** role (default);
⬛⬛ closed, **Host** role (see page 15).

TMP (Tamper):
⬛⬤ open, tamper detected (default);
⬛⬛ closed, tamper not detected.

UFC
Future Use

General description

This Communicator manages SMS and Central Station transmissions and can simulate the land line in the event of trouble (land line down) or even substitute the land line completely in areas where the GSM service is provided and where the land line is not available. It has capability of communicating alarm signals via the GPRS data network. This capability enables a fast reliable path to central stations equipped with a Sur-Gard System III or System II receiver.

The performance of this Communicator depends greatly on GSM Network coverage, therefore, it should not be mounted without first performing placement tests of the antenna to determine the best location for reception (at least the LED ▪❙❙ should remain lit).

The communicator has 6 **T** terminals that can be programmed as follows:

– Outputs (default setting) which can be activated/deactivated remotely, or used to provide status indications (problems on the PSTN telephone line; problems on the GSM network; Supervision Message Missing; Fail To Communicate **FTC**), IP receiver fault, Power fault, Tampers, Jamming detect, Antenna fault, Reserved output.

– Input: Panel interconnection Presence: used to be connected with a panel, Voice dialler: used to trigger a voice dialler event, SMS dialler: used to trigger a SMS dialler event, Dialler Block: used to stop the dialler and delete the queue, Force Communication On GSM: force the line switch from LE to LI, Internal CID/SIA: used to generate the internal CID/SIA event. This Communicator can activate only as intended and cannot be used as a modem for fax/data transmissions or for teleservice operations.

Parts Identification

The numbers in square brackets **[ ]** in this manual refer to the main parts of this Communicator (see Figure 1 and 2, and relative table on page 2).

GS4005-K, 3G4005-K/AM and 3G4005-K/EU mounting

☞ *This Communicator shall be installed by qualified SERVICE PERSONS only, in the shelter of a safe and dry site, away from radio-transmitting equipment.*
Test the GSM Network reception before mounting this Communicator in the proposed placement.
Do not route any wiring over circuit boards.
The length of the power cables cannot exceed 3 meters.

This Communicator consists of a board intended to be placed inside the intrusion panel, preferably having a metal cabinet, and of an antenna that is connected to the board by a coaxial cable. During normal working, those elements (board, antenna and cable) could generate radiated electromagnetic fields and, if there are any electronic devices not sufficiently immune to such fields nearby, there might occur certain unwanted interactions. For this reason it is advised to place the board as far away as possible from such susceptible devices and to put the antenna on the external surface of the metal cabinet or far away from it by means of the bracket. It is advised to keep inside of the panel metal cabinet the minimum coaxial cable part and to place any extra length on the outside of the metal box.

1. Loosen the screws and remove the control panel cover.
2. Establish an area inside the metal casing which can be used to hold the board, including the wiring.
3. Position the 4 adhesive plastic supports on the base of the metal base, then fit the holes [30] on the Electronic board into the adhesive plastic supports, as illustrated in Figure 3.
4. Fix the antenna with the 2 m cable [29] above the metal cabinet (Figure 3) in such manner that the magnetic base will be conjoint with the surface. Feed the antenna cable through the cable feed opening in the metal cabinet.
   It is possible to use the metal support [27], see Figure 2. Fix the metal support [27] by using the holes [26] on an adequate prop. Fix the antenna with the 2 m cable above the metal support [27] (Figure 3), in such manner that the magnetic base will be conjoint with the surface. Pass the antenna lead through the hole [26] in the metal support [27].
5. Connect the cable to the GSM antenna connector [23].
6. Complete the connections on the terminal boards [19].
7. Close the jumper **TMP** to disable the tamper detection.
8. Insert the SIM-CARD face down in the SIM holder [14] (see Figure 2).

☞ *The SIM-CARD PIN must be disabled before the card is inserted into the Communicator.*
It is recommended that you disable call forwarding on your SIM card.

9. Make sure that the **Line Status (Yellow)** and **System Fault (Red)** LEDs flash when the Communicator is switched on: this indicates that the Communicator is in its start-up phase.
10. Check signal strength:

    make sure that at least the LED ▫║ remains lit; the LED ▫║║║║ lit indicates optimal coverage;

    if the LEDs ▫║ and ▫║║║║ are OFF, the signal strength is TOO WEAK: for the signal to be of an acceptable level, at least the LED ▫║ must be lit.
11. Close the cover of the control panel on the base using the suitable screws.

☞ *Connect power circuit and the telephone line only after the cabinet has been secured to the wall or structure and has been connected to the protective earth ground of the building.*
Before inserting or removing the SIM card, please ensure the device is powered down.

ANT5-15 Remote Antenna

For details of how to fit the remote **ANT5-15** outdoor antenna (15 m cable length with adapter) please refer to the instructions supplied with the product. The ANT5-15 is used to provide the Communicator a excellent GSM signal strength (see Figure 3).
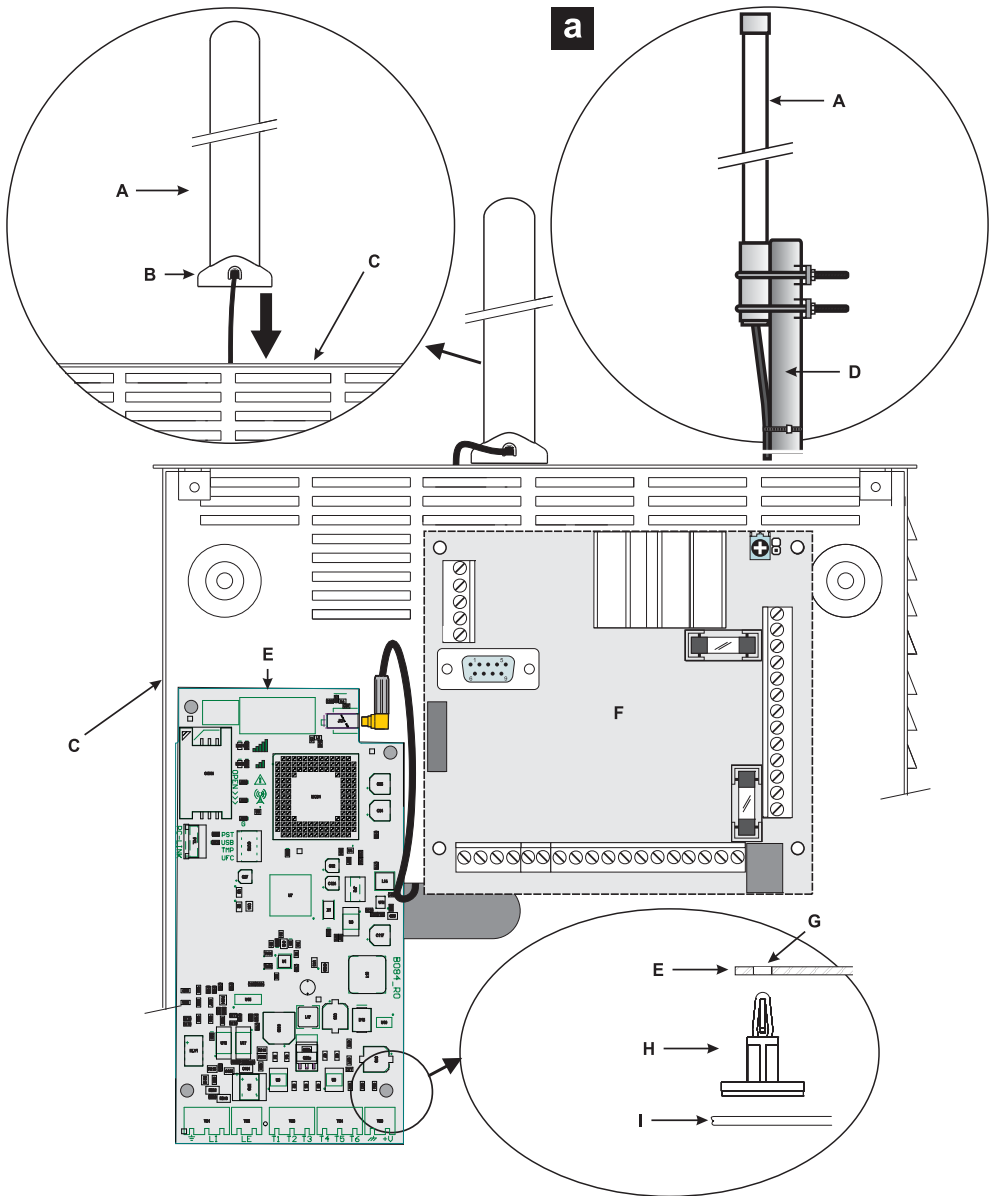
Figure 3 – *GS4005-K, 3G4005-K/AM and 3G4005-K/EU Mounting: **A)** antenna; **B)** magnetic base; **C)** metal box; **D)** support; **E)** Communicator board; **F)** main board control panel; **G)** board hole; **H)** four adhesive plastic supports; **I)** metal box base.*

GS4005, 3G4005/AM and 3G4005/EU mounting

See Figures 1 and 2.

1. Mark the position of the holes [**8**] required to fix the plastic base [**2**] and the antitamper device [**13**] to the wall.
2. Drill holes in the wall as marked.

⚠ *Make sure you do not damage wiring or pipes in the chase.*

3. Insert the 5 supports into the holes on the wall.
4. Feed the connection cables through the opening on the base.
5. Fix the plastic base to the wall using wall anchors (not supplied).
6. Insert the silicon carbon pills for antitamper on the dedicated support on the base [**12**].
7. Insert the back-up battery (accessory item).
8. Place the electronic board on the supports [**20**] and push it down until it clicks into place.

☞ *Read the following steps (9, 10 and 11) if the signal with the integrated antenna is low, to mount the ANT5-02 external optional antenna, else go to step 12.*

9. Connect the antenna cable [**23**] to the connector on the electronic board and fix other connector of the cable to the communicator backplate with the nut and washer [**24**] (into dedicated hole).
10. Connect the magnetic antenna cable, using the SMA connector.
11. Position the antenna [**28**] on the upper edge of the base.

☞ *The antenna will be positioned on the point most suited to receiving the GSM signal.*

12. Complete the connections on the terminal boards [**19**].

☞ *The length of the power cables cannot exceed 3 meters.*

13. Insert the SIM-CARD face down in the SIM holder [**14**].

⚠ *The SIM-CARD PIN must be disabled before the card is inserted into the Communicator.*
It is recommended that you disable call forwarding on your SIM card.

14. Make sure that the **Line Status (Yellow)** and **System Fault (Red)** LEDs flash when the Communicator is switched on: this indicates that the Communicator is in its initialization phase.
15. Check signal strength:

    make sure that at least the LED .**ıl** remains lit; the LED .**ıllll** lit indicates optimal coverage;

    if the LEDs .**ıl** and .**ıllll** are OFF, the signal strength is TOO WEAK; for the signal to be of an acceptable level, at least the

    LED .**ıl** must be lit.
16. Close the Communicator cabinet: fasten the upper side of the cover [**1**] to the backplate [**2**], using the hinges [**9**] and then fix the cover using the screw [**7**], that you can find on the backplate.

☞ *Connect power circuit and the telephone line only after the cabinet has been secured to the wall and has been connected to the protective earth ground of the building.*
Before inserting or removing the SIM card, please ensure the device is powered down.

Tamper detection

The activation of tamper switch (optional) allows you to detect the Communicator cover opens or the removal of the device from the wall (see "Jumpers Description > TMP").
For the opening of the communicator cover or the removal of the communicator from the wall, will activate the send of an SMS and/or voice message to one or more phone numbers, or an output will be activated, it is necessary, by the DLS 5 Console, to program the Communicator (insert phone numbers at the event Tamper / Restore and in the page of **Programming from PC-> Inputs / Outputs** enable an Output. After the programming, close the cover and power up the Communicator. After the initialization phase

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of the Communicator, open the cover and check that the SMS and / or voice message is sent to the programmed telephone numbers and the output is enabled.

Status LEDs

There are 8 LEDs on the PCB that indicate the Communicator status.

☞ *During start-up, all LEDs will be ON less 1 second. During the programming default procedure, LEDs* ▁▃▅▇ *and* ▁▃ *will be OFF while the LEDs* ⚠ *and* ((•)) *will be ON.*

LED	Colour	Name	Description
▁▃▅▇ ▁▃	Green/Yellow	GSM signal strength	Packet Service Network Type (see Table 4). GSM Signal Strength (see Table 5). Communication Type (see Table 6).
⚠	Red	Fault	See Table 7
((•))	Yellow	Line Status	**ON**: the communicator has switched on simulated PSTN. **Slow flashing**: OFF-Hook and voice message transmission.
G	Green	GSM Network Status	LED for technical support.
ACT	Green	USB	**ON**: HOST. **OFF**: DEVICE. **Slow flashing**: error. **Fast flashing**: activity.

Table 3: *Status LEDs.*

LED	Colour	Packet Service Network Type
▁▃▅▇ ▁▃	Green	GPRS or EGPRS
	Yellow	WCDMA, HSDPA or unknown (only 3G versions)

Table 4: *Packet Service Network Type.*

▁▃▅▇	▁▃	GSM Signal Strength
OFF	OFF	NO GSM network available.
OFF	ON	GSM signal low
ON	ON	GSM signal High.

Table 5: *GSM Signal Strength.*

ılıll	ılı	Communication Type
Slow Flashing	Slow Flashing	Device initialization: the LEDs flash until a GSM signal is received by the Communicator.
Fast Flashing	OFF	Incoming SMS: the LED flashes a few seconds.
Slow Flashing	OFF	Remote Session: the LED may flashes a few seconds after the end of session.
OFF	Slow Flashing	Voice call: it signals the voice calls of the Communicator NOT those of connected control panel, if any.

Table 6: *Communication Type.*

Fault LED

This LED is normally **OFF**. It indicates malfunctioning by flashing in the event of trouble. On power-up, the Communicator checks for certain trouble conditions to be met shown in the Table 7 below. The most significant malfunctioning status will be indicated, with the corresponding number of flashes of the RED LED: see the Table 7 below for number of flashes and malfunctioning indication priority.

Priority	Description	Flashes
1 (HIGH)	Firmware problem (incorrect firmware): invalid data found in an external flash memory.	1
2	Power supply trouble: the supply voltage drops below 10.7 V.	2
3	Battery trouble: the battery voltage drops below 3.4 V.	3
4	Default PIN: the EN50136 option is enabled and User, Installer or Level 4 PIN are at default.	4
5	GSM radio fault: the microcontroller is not able to communicate with GSM radio module, during the initialization sequence.	5
6	SIM trouble: the SIM card has the PIN check enabled.	6
7	GSM Network trouble: the radio is not able to connect to the GSM network.	7
8 (LOW)	GPRS/HSPA trouble: the radio is not able to connect to the GPRS/HSPA network.	8

Table 7: *Fault LED.*

Terminals description

Terminal	Description	
⏚	Ground: this terminal must be connected to the Mains Earth, in order to comply with the Telecommunications Network Safety Standards (Overvoltage Protection Requirements).	
LI	Internal telephone line: these terminals must be connected to the control panel or an alternative communication terminal.	
LE	External telephone line: these terminals can be connected to the PSTN line.	
T1	Default: output, PSTN fault.	Programmable terminals. These terminals can be programmed as follow. – Open collector outputs: these outputs may be activated either by programmed events (automatic activation), or by a command sent via SMS, or through caller recognition (remote activation); please refer to the "Output activation" section for further information. The maximum current available at each OC output is 100 mA. – Input lines: when these inputs receive alarm signals, they can activate the SMS and telephone dialer functions.
T2	Default: output, no cellular network.	
T3	Default: input, interconnection presence.	
T4	Default: output, tamper.	
T5	Default: output, GSM fault.	
T6	Default: output, Jamming.	
⏚ (Negative symbol)	Negative: Power supply and shared terminal for the Open Collector outputs.	
+V	Power supplied by the control panel, at a level between 10.7 and 27.6V⎓; make sure that this is protected and operating at a limited current; Limited Power Source (LPS) in conformity with EN 60950-1:2006 standard. To connect the supply use wires with a maximum 3 m length and 0.75 mm² cross-section. For shorter wires use suitable cross-sections.	

Connection example

⚠ *Incorrect connections may result in FTC fault or improper operation. Inspect wiring and ensure connections are correct before applying power. DO NOT route any wiring over circuit boards; maintain at least 1″ (24.5 mm) separation. A minimum 1/4″ (6.4 mm) separation must be maintained at all points between Power Limited wiring and all other Not-Power Limited wiring.*
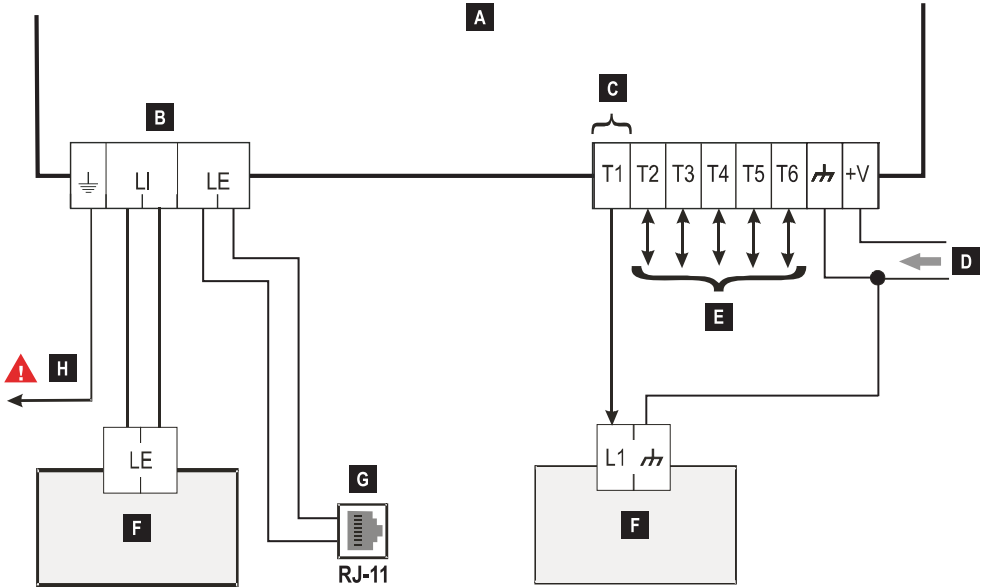
Figure 4 – *Typical wiring diagram: **A)** 4005 Series; **B)** disconnect telephone line prior servicing; **C)** example of T1 connection as an open-collector output; **D)** 10.7 to 27.6 V=== power supply; **E)** T1, T2, T3, T4, T5 and T6 terminals may be programmed as open-collector outputs or inputs lines; **F)** alarm control panel; **G)** telephone line connection (PSTN); **H)** ground connection, this connection is necessary.*

USB Functionality

The communicator has an USB A connector. It shall be implemented a dual-role feature: may be Host or Device according to the jumper setting: **Device**: ⬭ (open default), or **Host** ⬛⬛ (closed) and allows the direct insertion of USB memory stick (see page 7 "Jumpers description"). To connect the communicator to a PC it is necessary to have an A to A USB cable (Hub cable).

The USB interface characteristics:
➢ Compliance, USB 2.0 Specification
➢ Data rate, Full speed (12 Mbit/s)
➢ Max. cable length, up to 5 m
➢ Max. current in host mode, 500mA
➢ Vout in host mode, 5 Vnom.
➢ File system in memory stick, FAT32.

USB Device

This interface will be a substitution for the RS232 communication (PC-Link). It will have the same functionality of the RS232, and will be used with software console (DLS 5) to:
➢ execute the firmware upgrade, only Installer -Level 4- is authorized;
➢ upload/download of communicator programming and audio files, (Installer is authorized to upload/download, User can only upload);
➢ Upload of communicator event log from the communicator by the event log page (only Installer and User are authorized);
➢ monitoring the communicator status in real time mode only to show some information regarding the communicator. All Users are authorized.

USB Host

This will permit to connect a USB memory stick for following features:
➢ execute the firmware upgrade;
➢ upload/download of communicator programming and audio files;
➢ download of communicator event log;
➢ download of the communicator debug log.

All this features are available only whether the EN50136 compliance is disabled.

Power Monitor

The device will be powered in two ways:

1. By the Control panel with a backup battery. In this case the device will be powered in the range from 10.7 V to 27.6 V.
2. By an external power supply to provide the 12V. In this case the communicator will recharge the optional battery.

The only purpose of the battery is to provide the power in the event the primary power source is lost. The autonomy in stand-by is 8 hours. In both cases if the main power is lost, the battery assures that the communicator will still powered and working. The main power voltage and the battery voltage shall be supervised so that the module is able to generate the follow signalling:

➢ Power Supply Fault/Restore signalling.
➢ Generate power Fault/Restore message (voice messages and/or text messages and/or digital messages).
➢ Device goes in Energy Save mode.

Since the device can work with or without external battery backup (no input current limitation set), It's possible to distinguish the following two different scenarios to establish the power trouble condition.

Main power check

The main power voltage shall be supervised to control any possible trouble. The power check will be processed every 100msec. The following conditions are referred to the device **not provided** with external battery backup:

➢ Power Fault Event: when the power drop below the threshold 10.7V.
➢ Power Fault Restore: when the power ripe above the threshold 12V.
➢ Entry Energy Save Mode: when the power drop below the threshold 9.6V.
➢ Exit Energy Save Mode: when the power rise above the threshold 10.7V.

☞ *If the communicator is in Energy Save mode, the current max. draw does not exceed 175mA. Maximum current drawn in Energy Save mode, without battery connected and no action under way is about 70mA and during a voice call is less than 150 mA.*

Battery Voltage check

The battery voltage shall be supervised to control any possible trouble and the battery presence. The battery check will be processed every 100 msec.
The following conditions are referred to the device **provided** with external battery backup:

➢ Battery Trouble Event: when the battery voltage drop below the threshold 3.4 V.
➢ Battery Trouble Restore: when the battery voltage rise above the threshold 3.7 V.
➢ Start Energy Save Mode: when the battery voltage drop below the threshold 3.2 V.
➢ Stop Energy Save Mode: when the battery voltage rise above the threshold 3.4 V.
➢ Battery Disconnect Event: when the battery voltage drop below the threshold 2.0 V.
➢ Battery Disconnect Restore: when the battery voltage rise above the threshold 2.0 V.
➢ Battery Overcharge Event: when the battery voltage rise above the threshold 4.4 V.
➢ Battery Overcharge Restore: when the battery voltage drop below the threshold 4.3 V.

☞ *If the Communicator is powered ONLY by backup battery, the upload / download of programming, audio files and the events of the log are not possible, so for these actions it is necessary to reconnect the main power.*

Operating Principles

This Communicator offers the option of selecting the "**Primary Communication Path**" for communication purposes (the default configuration is external PSTN). Will provide the line ring voltage for incoming calls and will decode DTMF dialling. The Simulated land line provides the alarm control panel or an alternative communication terminal, with a backup line in the event of PSTN line trouble. Commutation between PSTN and GSM, does NOT occur during ongoing calls. The Operating priority (selected during programming) determines how this Communicator manages communication (SMS and voice), as well as calls from telephone devices connected to the **LI** terminals (such as a alarm control panel).

☞ *This Communicator is unable to decode Pulse dialling.*

To prevent any unwanted use of a simulated line via GSM, the equipment gives out a signal in the form of a double beep during vocal calls. The first double beep is produced after 5 minutes and the following ones at 30 second intervals each.

Restore default programming

To restore the default programming of the transmitter, proceed as follows:
1. Disconnect the device from the power supply.
2. Keep terminals **1** and **4** on the PCLINK connector [**15**] short-circuited, using clamps for example, and restore the power supply.
3. As soon as the short circuit is detected, all LEDs remain illuminated (for a few seconds) while all green LEDs switch off, to indicate that default programming is being restored.
4. When the yellow and red LEDs light up, remove the short circuit between terminals **1** and **4** on connector [**15**].
5. Once this procedure is complete, the red LED flashes to indicate that the pins are at default.

☞ *Recorded voice messages are NOT deleted when the default settings are restored. Voice messages can be deleted in the Voice Message page of the DLS 5 console.*
To restore (Default programming), if the EN 50136 is enabled and the PINs have the default value, all green LEDs are off.
If the Communicator is powered ONLY by backup battery, the Restore of default programming is not possible, so for this action it is necessary to reconnect the main power.

PSTN pre-set channel

If the voltage on the line terminals (**LE**) drops below 2.5 Vdc (± 20%) for a period of between 10 to 3600 seconds (programmable value), the connected telephone device (connected to the **LI** terminals) will switch to the GSM Network. **When the PSTN telephone line is restored,** the communicator switches once again, after a programmed period of time, to the PSTN telephone line.

☞ *You can force the commutation on the GSM/GPRS channel, even when there is the land line PSTN by entering the prefix "9999"(default) in front of the telephone number dialed by the Control Panel (for further details see the table on the right and the paragraph "PTM- >Generic" in the PC Programming.*
If, for any reason, the device is on the GSM simulated line, the prefix "9999", if present, will be removed from the dialed number.

Number dialed by the panel	Telephone line	Number in "Telephone numbers to decode" list	Effect
0123456789	PSTN	None	Voice call on PSTN of the number 0123456789
99990123456789	PSTN	0123456789	Contact ID communication on GPRS
99990123456789	PSTN	None	Voice and/or Contact ID call on GSM of the number 0123456789
99990123456789	Simulated on GSM	0123456789	Contact ID communication on GPRS
99990123456789	Simulated on GSM	None	Voice and/or Contact ID call on GSM of the number 0123456789

GSM pre-set channel

This provides the devices connected to the LI terminals with a simulated line if GSM reception is detected. If there is no GSM reception, it commutates to the PSTN telephone line.

Contact ID transmission sequence on GPRS

The Communicator, if telephone numbers have been entered on the page **Phonebook** using the software DLS 5 Console, directs calls to these numbers over the GPRS line.
➢ When an event is triggered, the Alarm Panel goes off-hook.
➢ The dial tone is simulated.
➢ Control Panel dials the number of the central station. Ensure the alarm panel inserts a minimum 1-second pause, or has dial tone search enabled before dialing the number.
➢ The Communicator will send the required Contact ID dual tone handshake.
➢ After receiving the handshake, panel transmits alarm message in DTMF.
➢ The Communicator decodes and transforms DTMF digits into the packet and sends it to the Central Station Receiver over the GPRS network.
➢ The receiver acknowledges the event and sends the command to this Communicator, which generates the corresponding kiss-off signal (at a frequency of 1400 Hz) and sends it to the control panel.
➢ After the Communicator generates kiss-off, the panel goes on-hook if no more alarms need to be sent, or it can send the next alarm.

SMS dialer

In SMS dialer operating mode, one or more telephone numbers (the first 8 entries in the phonebook, max 16 digit programmed as SMS Dialer) are sent SMS messages (as programmed previously) corresponding to the following events.
➢ Alarms which may occur on one or more of the 6 programmable input lines. Remember that 2 SMS messages can be programmed for each of the 6 input lines on the device, one for Activation and one for Restore.
➢ PSTN line test. 2 SMS messages may be programmed: one for PSTN line absence and one for Restore.
➢ Power supply voltage test. 2 SMS messages may be programmed: one indicating Power supply voltage problems and one for Restore.
➢ Tamper Test. 2 SMS messages may be programmed: one indicating Tamper and one for Restore.
➢ Periodic SMS message, with a programmable time period between 1 hour and 1 year.

☞ *An SMS message is transmitted when one of the above events occurs, for which an SMS message and at least one telephone number has been programmed.*
The event Power Fault (230V) is present only in the versions GS4005, 3G4005/AM and 3G4005/EU.

Voice Dialer

During operation in Voice dialer mode, one or more telephone numbers (the first 8 entries in the phonebook, programmed as Voice Dialer) are sent a prerecorded voice message. Up to150 messages may be recorded, each with a maximum duration of 6 seconds. Each message is recorded onto a solid state memory (flash memory). The messages are linked to the following events.
➢ Alarms which may occur on one or more of the 6 programmable input lines. Remember that 3 voice messages can be recorded for each of the 6 input lines on the device.
➢ PSTN line test. 3 voice messages may be recorded: 3 for PSTN line absence and 3 for Restore.
➢ Power supply voltage test. 3 voice messages may be programmed: 3 indicating Power supply voltage problems and 3 for Restore.
➢ Periodic voice message, with a programmable time period between 1 hour and 1 year.

A voice call takes place when an event occurs on a channel for which a voice message and at least one telephone number has been programmed. In this case, the Communicator performs the following steps:
1. The Communicator selects a telephone number and forwards the call over the GSM telephone line.
2. The Communicator makes sure that the number is not busy and that there are no problems on the GSM network, so that it can proceed with the next step, otherwise the call will end and step 1 will be attempted again, up to a maximum of 8 times (depending on the programmed value). After 8 attempts the call cycle will be considered complete. If the alarm channel has been programmed to call several telephone numbers, they will be called in a set sequence. By doing this, for example, the possibility of calling a busy number several times in the space of a few seconds can be avoided.

3. The Communicator waits for a response from the number called for a period of up to 60 seconds. If the outcome is positive, the Communicator moves on to step 4; otherwise the call will end and step 1 will be attempted again, up to a maximum of 8 times (depending on the programmed value). After 8 attempts the call cycle will be considered complete.

4. The Communicator plays the message corresponding to the channel where the alarm is taking place, the call is considered completed only once the message has been received, or when the ⊡ key is pressed (if "Call Confirmation" has been selected, see the *Communicator->Call Confirmation*) on the phone receiving the message. In any case, the call is considered successful after the message has been repeated up to a maximum of 8 times (depending on the programmed value). If, at the selection stage, several events occurred causing several different messages to be sent to the same telephone number, these messages are reproduced (each for a maximum of 8 times, depending on the programmed value) in sequence during the same telephone communication, thus avoiding calls being made to the same number several times. If at the end of the call cycle, the line which caused the Communicator to be activated is still in alarm mode, the procedure described above will not be repeated again. In fact, the line that caused a call cycle must return to standby mode before a new cycle is activated.

☞ *The event Power Fault (230V) is present only in the versions GS4005, 3G4005/AM and 3G4005/EU.*

Event Priority management

The Communicator is able to do:
➢ Voice call;
➢ Alarm event transmission over GSM voice channel;
➢ Voice message transmission;
➢ SMS message transmission;
➢ Internal report event (CID/SIA);
➢ Incoming SMS management;
➢ Heartbeat transmission.

For all events type the priority will be programmable through SW DLS 5 console. Default configuration is shown in the table below.

Event type	Event description	Default	Programmable by software
1	LI off-hook (voice call and CID/SIA digital transmission).	0 (Highest)	Yes
2	Internal report event (CID/SIA on input trigger) over Cellular Data Network.	1	Yes
3	Voice/SMS dialler message (input or internal even).	2	Yes
4	Incoming SMS command message management.	3	Yes
5	Heartbeat over Cellular Data Network.	4 (Lowest)	Yes

Table 8: *Priority events management.*

Default case
➢ If the device is transmitting an event and a different event type with higher priority occur, the device will stop the current event transmission and push it in queue.
➢ After event transmission with higher priority the device will try again to delivery previous message stopped.
➢ If more events with the same priority occur simultaneously, they will pushed in queue and transmitted sequentially.
➢ Voice dialler message has less programmable priority than event from. In case panel event have more priority, if an event from panel occurs while the device is making a voice message transmission, the device will close the call. When the panel takes the line (off hook detected) an ATH command will be performed. After panel transmission (on hook detected) the device will try again to delivery previous voice message stopped (get from queue). Otherwise in case of voice dialler has the most priority, if an event from panel occurs while the device is making a voice message transmission, the device should provide the busy tone to the panel and continue to transmit the messages.
➢ SMS message has less fixed priority then LI Line and Voice Dialler. If it takes the resource then it cannot be released on demand, because the SMS sending cannot be interrupted by AT command, but it will give the resource at the SMS sending end.
➢ Heartbeat has the least priority.

Internal events

In addition to external events (decoded CID/SIA events from the panel via simulated PSTN line), the communicator will manage following internal events.

- ❑ Trigger / restore of input
- ❑ Status reporting events
- ➢ Mains power source failure / restore (required by EN50136-2:2013).
- ➢ Battery power source failure / restore (required by EN50136-2:2013); valid only for the version with battery charger on board.
- ➢ Control panel to communicator interconnection failure / restore (required by EN50136-2:2013);
- ➢ Primary and Secondary Alarm Transmission Path failure / restore (Future use), (required by EN50136-2:2013);
- ➢ IP receiver fault / restore;
- ➢ PSTN fault / restore;
- ➢ GSM fault / restore;
- ➢ No Cellular network / restore;
- ➢ Tampers activation / restore;
- ➢ FTC fault / restore;
- ➢ Periodic event.

The Installer can choose the protocol to be used (Contact ID or SIA). The chosen protocol will be used for both the triggered inputs and the status reporting. Each input can be programmed with a specific Customer code (account). All the status reporting events will use the same Customer code (see the following table).

The communicator will manage a queue of 32 internal events. When the queue is full, further events will be ignored.

The priority between internal and external event will be programmable by the Installer (see par. **OPTION,** Priorities**)**.

For internal events, the timing and retry policy are managed by communicator: after the sending of a message, the device will wait about 1 second for the receiver's ACK. The device will make up to 4 attempts to deliver a message. The events will be transmitted to the digital receiver (see PC Programming: Communicator page).

☞ *The event Power Fault (230V) is present only in the versions GS4005, 3G4005/AM and 3G4005/EU.*

Pay As You Go Balance

If the DLS 5 Console has been used to program the device (see *Options->Pay As You Go*), it will be possible to check how much credit is left on the pre-paid SIM CARD. If the credit balance check feature is enabled, The query of the residual credit can be done in three ways:

1. By DLS 5 Console.
2. By SMS command forwarding the answer to the sender number. The command sent has to include the User PIN.
3. An SMS providing credit balance information (supplied by the operator) is sent to the first number in the phonebook at regular intervals. For all operators which support credit balance requests via a network command, it will be possible to enter a request for information using the DLS 5 Console.

☞ *The pre-paid SIM CARD credit management service may be suspended at any time, at the discretion of each individual GSM network operator.*

Panel Transmission Monitoring (PTM)

The constant monitoring of communication with the control unit (PTM function) allows the Communicator to transmit calls via the GSM network if communication between the alarm control panel and the surveillance control unit does not take place successfully over the PSTN telephone line. If programmed (using the DLS 5 Console **PTM** page), this feature only works when the PSTN line is connected to the **LE** terminals.

☞ *Pulse dialling detection is not supported.*

The PSTN Fault event occurs when the PTM function activates.

The communicator will monitor the telephone line for on hook/off hook detection, once it detects an off-hook condition, it will do the following:
➢ Detect DTMF digits dialled,
➢ Check for a kiss-off.

The panel will not dial immediately, the minimum time between off-hook and dialling will be more than 2 seconds.

The telephone number in phonebook that have the PTM option enabled are used to determine if the call is made by the panel or house phones. The Communicator will only monitor activity and check for kiss off when one of these number is dialled. If the option "*PTM all number*" (see PC Programming->*PSTN/PTM)* is set than the Communicator will monitor every call made and kiss off is expected.

Activating the Outputs

The Communicator has the Open-Collector terminals (the T1, T2, T3, T4, T5 and T6 terminals) that can be programmable as Inputs or/and Output (max 100mA), this terminals are programmed as Outputs by default except T6 terminal programmed as Input. The Open-Collector Outputs can be activated automatically (when certain pre-programmed events occur) or remotely, through SMS transmission or caller identification from a number programmed previously.

Activating/Deactivating Automatic Outputs

The T1, T2, T3, T4,T5 and T6 Open Collector outputs can be activated automatically by the following events:

INPUT
➢ Panel interconnection Presence: used to be connected with a panel,
➢ Dialer Block: used to stop the dialer and delete the queue,
➢ Force Communication On GSM: force the line switch from LE to LI.

OUTPUT
➢ *Panel Interconnection Fault*: active the output if the panel is not present
➢ *Jamming Detect*: active output when the device is under jamming attack.
➢ *Antenna Fault*: active the output when the antenna is cut or shorted.
➢ *Tampers*: when tamper is triggered.
➢ *PSTN Fault*: active the output in case of PSTN fault.
➢ *GSM Fault*: active the output in case of module power on fail, SIM issue, signal absent, no carrier.
➢ *No cellular Network*: active the output in case of issue related to the data connection activation.
➢ *IP receiver fail*: active the output in all faulty cases related to the communication with IP receiver.
➢ *Power Fault*: active the output in case of power fault.
➢ *Reserved output*: when this option is selected, all other events selected to activate the corresponding output are ignored.
➢ *FTC fault*: if selected, the output will be activated if communication is not successful.

The default programming for each terminal is shown below:

- PSTN Fault (T1).
- GSM Fault (include SIM Fault) (T2).
- Reserved Output, Remote output activation via Caller ID and/or SMS functionality (T3).
- No Cellular network (T4).
- IP receiver Fail (T5) required by EN50136-1:2012, paragraph 6.6; EN50136-2:2013, Annex A).

☞ *Once an OC output has been automatically activated, it will only return to standby mode when all the causes of activation have been cleared, except if there is a Failure To Communicate an internal event (FTC), in which case it returns to standby mode after the ON Time has expired.*

Remote Activation and Deactivation of the Outputs

☞ *The GSM connection must be established before the outputs can be activated/deactivated remotely. We recommend the device is programmed with the Black list enabled (Options->Dialing Options) and White list disabled (Phonebook->White list) for the numbers you wish to use for this function. The number used to activate the outputs via Caller Identification must be visible.*
When T1, T2, T3, T4,T5 and T6 programmed as output they are remotely controlled by SMS, Caller recognition or via a mobile app. They should be 50mA OC output.
The SMS message will never be storage on the device, but they will be cancelled after executing command.
To enable this function the output shall configured as Output Reserved.

The default programming for each terminal Open Collector is: T1, T2, T4 and T5 are **Bistable** while T3 output is **Monostable**.

The Open Collector outputs can be set as Bistable (activation and deactivation takes place by means of 2 separate commands) or Monostable (the output remains active for the ON time and returns to standby mode when this period has elapsed or when it is deactivated by means the specific SMS). Moreover, every output can be programmed to provide a confirmation signal (an SMS programmed previously if output activation/deactivation is performed via SMS, or a confirmation ring if output activation/deactivation is performed via caller identification).

☞ *For further information on the terms "Control string" and "User code" used in the following sections, please refer to the "I/O" and "Options->User Authentication" sections of the "PROGRAMMING VIA PC" chapter.*

Bistable outputs

Open collector outputs set as bistable can be activated in 2 ways:

1. By sending an SMS consisting of the User code between two * characters, the Control string (Control String can not have initial blank spaces) and the characters "=ON*", as follows:

   *#User Code*String=ON*   (example: #9876*HOUSELIGHT=ON*)*

2. Through **caller identification** (Caller ID): in this case the output is activated at "cost-free" as the Communicator, after identifying the caller, rejects the call and activates the output.

☞ *A bistable OC output can ONLY be deactivated by sending an SMS message consisting of the User code between two *characters, the Control string and the characters "=OFF*", as follows:*

   *#User Code*String=OFF*   (example: #9876*HOUSELIGHT=OFF*)*

☞ *IThe default User code (six digit) is '000000'; if you wish to change it, please refer to the section "Remote programming by SMS message->Changing the User code".*

Monostable outputs

OC outputs set as Monostable may be activated in 2 ways, through **Caller Identification** and via **SMS**.

SMS

Send an SMS consisting of the **User code** between the * characters, the **Control string** (Control String can not have initial blank spaces) and the characters "=ON*", "=ON*TonU*" or "=OFF*", as follows:

#User Code*String=ON*

#User Code*String=ON*TonU*

#User Code*String=OFF*

The "=ON*tonU*" option is parameter allows to set the ON Time from 1 to 86400 seconds, with 1 second steps. The ON Time can be set by means of the Communicator's Console software. "Ton" is the required value and "U" is the unit in hours (H), minutes (M) and seconds (S), as shown in the following example:

SMS example	Meanings
#9876*HEATING SYSTEM=ON*	Bistable activation.
#9876*HEATING SYSTEM=ON**	Active as programmed.
#9876*HEATING SYSTEM=ON*3600S*	Active for 3600 seconds.
#9876*HEATING SYSTEM=ON*50M*	Active for 50 minutes.
#9876*HEATING SYSTEM=ON*3600*	Active as programming, invalid Monostable timing, will be ignored.
#9876*HEATING SYSTEM=ON*000S*	Active as programming, invalid Monostable timing, will be ignored
#9876*HEATING SYSTEM=OFF*	Deactivate.

☞ *Remove the "TonU" parameter, leaving the "**" characters, to activate the output by SMS as programmed. (Example: #9876*heating system=ON**).*
In case of wrong programming for the Activation of the monostable Output, it will be activated with the time value set in the software DLS 5.

Caller Identification

Through Caller identification (Caller ID): in this case the output is activated at "cost-free" as the Communicator, after identifying the caller, rejects the call and activates the output.

☞ *Monostable OC outputs deactivate (switch OFF) automatically when the programmed ON Time expires.*
Only the T3 output can be activated through Caller Identification.
The ON time may be set to a period of time between 1 and 86400 seconds, in steps of 1 second.
The default User code is '000000'; if you wish to change it, please refer to the section "Remote programming by SMS message->Changing the User code".

Remote Programming by SMS Messages

In addition to the processes described in the section *Remote activation and deactivation of the outputs*, it is also possible to carry out other remote procedures through the transmission of various SMS messages.

User code Modify

The default user code is '000000'; to change it, send an SMS message consisting of the characters "#CUC" followed by the old **User code** and the new User code between * characters, in accordance with the following formula:

*#CUC*User PIN*New User PIN**

A SMS of confirmation will be received if the User Code has been changed.

☞ *The User code may only consist of numbers from 0 to 9 (maximum 6 digits).*
   To comply with the EN50136-2:2013 standards the code must be of 6 digits

Enable or disable remote programming

Remote programming makes it possible to use the functionality of the DLS 5 Console via a network. In order to remotely manage the parameters of the Alarm Communicator, remote programming must be enabled.

This can be done using the DLS 5 Console (see the Programming via *PC*->*Network setting*), or by sending an SMS message consisting of the characters "#**UWS**" followed by the User code and "ON" between * characters, in accordance with the following formula:

*#UWS*User Code*ON**

To disable the Remote Programming, send the following SMS message:

*#UWS*User Code*OFF**

A text message will confirm if the command was successful.

Installer Code Modify

The Installer Code (maximum 6 digits) is used for accessing the remote programming interface (see the Programming via PC- >*Options*->*Installer Authentication*. The default installer *PIN* is '111111'; to change it, send an SMS message consisting of the characters "#CIC" followed by the old Installer *PIN* and the new Installer *PIN* between * characters, in accordance with the following formula:

*#CIC*Installer PIN*New Installer PIN**

☞ *The Installer PIN may only consist of numbers from 0 to 9 (maximum 6 digits).*
   To comply with the EN50136-2:2013 standards the code must be of 6 digits.

A SMS of confirmation will be received if the Installer *PIN* has been changed.

Level 4 Code Modify

The default Level 4 PIN is '222222'; to change it, send an SMS message consisting of the characters "#CMC" followed by the old Level 4 PIN and the new Level 4 PIN between * characters, in accordance with the following formula:

*#CMC*Level 4 PIN*New Level 4 PIN**

☞ *The* Level 4 PIN *may only consist of numbers from 0 to 9 (maximum 6 digits).*

A SMS of confirmation will be received if the Level 4 PIN has been changed.

Credit balance check

To find out the credit balance via SMS, you can either use the DLS 5 Console software (see section ***Programming via PC***->***Options***->***Pay As You Go***), or you can find out remotely by sending an SMS message consisting of the characters "**#CCC**" followed by the * character, in accordance with the following formula:

*#CCC*User PIN**

or for the Installer code:

*#ICCC*Installer PIN**

☞ *The balance SMS will be sent to the Telephone Number of the sender.*

The pre-paid SIM CARD credit management service may be suspended at any time, at the discretion of each individual GSM network operator.

Expiring Date Check

To know the expiring date of the SIM card via a SMS message remotely send a SMS message consisting of the characters "**#EDC**" followed by the * character, in accordance with the following formula:

*#EDC*User PIN**

☞ *The SMS with the expiring date will be sent to the Telephone Number of the sender.*

Expiring Date Update

This command is used to update the information of the expiring date of the SIM card via a SMS message remotely send a SMS message consisting of the characters "**#EDU**" followed by the * character, in accordance with the following formula:

*#EDU*User PIN*new data**

The new date will be in the format: ***DD:MM:YYYY***.

If the expiring date is disabled, when programmed by EDU the signalling is sent at 10:00am.If the expiring date is programmed by DLS 5 (Option Page) than the hour and minutes will be reused when the date is update by EDU command.

Get Serial number

This command is used to get the serial number of the Communicator via a SMS message remotely send a SMS message consisting of the characters "**#RID**" followed by the * character, in accordance with the following formula:

*#RID*User PIN**

or for the Installer code:

*#IRID*Installer PIN**

The device will respond with: ***RID: 01234567***.

Enable Installer

This command is used by the user in order to enable the Installer access, via a SMS message remotely send a SMS message consisting of the characters "**#ENI**" followed by the * character, in accordance with the following formula:

*#ENI*User PIN**

An SMS feedback will be automatic sent to the sender in the event of success.

Disable Installer

This command is used by the user in order to disable the Installer access, via a SMS message remotely send a SMS message consisting of the characters "**#DSI**" followed by the * character, in accordance with the following formula:

*#DSI*User PIN**

An SMS feedback will be automatic sent to the sender in the event of success

Enable Level 4

This command is used by the Installer in order to enable the Level 4 access, via a SMS message remotely send a SMS message consisting of the characters "**#ENM**" followed by the * character, in accordance with the following formula:

#ENM*InstallerPIN*

An SMS feedback will be automatic sent to the sender in the event of success.

After a time-out of 12 hour period the Level 4 will be automatically disabled.

Start a remote programming

To start a remote session/programming Communicator via a SMS message remotely, send a SMS message consisting of the characters "**#SRS**" followed by ***DLSIP*** and by "**DLSPORT**" enclosed by the * character in accordance with the following formula:

#SRS*DLSIP * DLS *

Where:

➢ **DLSIP** = Public IP address of DLS 5 PC in the format "**AAA.BBB.CCC.DDD**" (each octet can be represented with a number of digits in the range 1 to 3).
➢ **DLSPORT** = Public DLS 5 Port in the format NNNNN (always 5 digits); default 51004.

If in the DLS 5 Console the APN data (access point name, up to 32 characters) is set, the string above is enough to start a session otherwise the string will be modified as follows:

#SRS*DLSIP*DLSPORT*APN*

In any cases if in the DLS 5 Console USERNAME data (User name for APN, max 32 characters) and password (Password for APN, max 32 characters) is set, the string above is enough to start a session otherwise the string will be modified as follows:

#SRS*DLSIP*DLSPORT*APN*USERNAME*PASSWORD*.

PC PROGRAMMING

☞ *For proper function of this Communicator, use a 32 K SIM CARD (or higher).*

For programming, the PC-Link cable (not supplied) must be connected to the Connector [**15**] of the Communicator and a COM port on the PC (see Figure 5); the DLS 5 Console application is also required. The PC-Link cable shown in Figure 5, can be used for the connection. Make sure you insert the PC-Link cable connector in the right way. Once the PC-Link cable has been connected, set the computer COM port through the *Tool->Modem Manager Configuration*. Check the serial link and the serial port settings in case of communication problem.
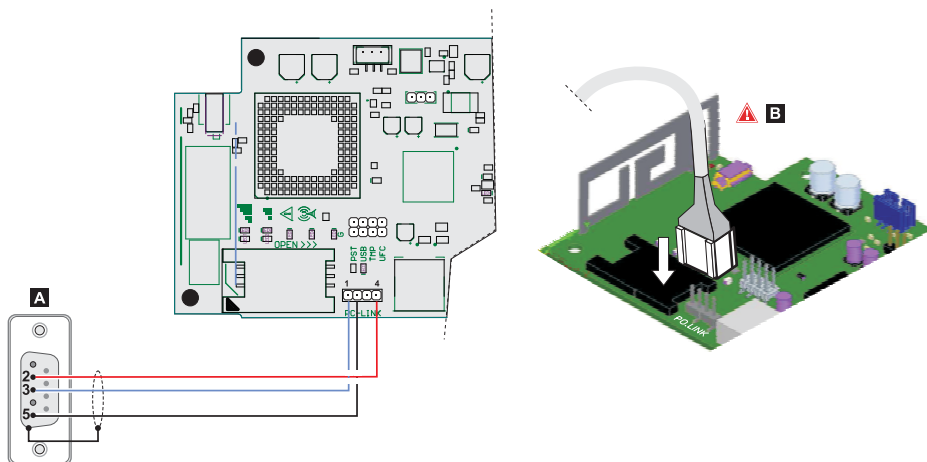

Figure 5 – *Diagram of the PC-Link connection cable: **A)** RS-232 connector, solder side; **B)** Make sure you insert the PC-Link cable connector in the right way.*

Alternatively connect the Communicator to a PC via a USB cable AA (cable hub), see par. **USB Functionality** on page 15.

☞ *To install and run the DLS 5 Console application, you will need to log on to the PC as the Administrator; we also recommend to verify the firewall's options if problems arise while the application is being installed.*
You can download the DLS 5 console from the website www.dsc.com.

1. **Install the DLS 5 Console**.
2. **Run the DLS 5 Console Software**.
3. **Select the User name and enter the corresponding** Password to Login in the relevant session: the default User name is admin and the Password is **1234**.
4. Open the **File menu** or click on the **Start Page**, then select **New Account** to create a new account (select the device in the Panel Type) or open an existing account.after selecting it in the list, a double click to open.

☞ *To change the DLS 5 Console language: click on "Tools", then on "Edit current User"; select in the opened window, the language from those available and then restart the DLS 5 Console.*

Menu description

❑ FILE menu
➢ **New Account:** the command "New Account", creates a new customer and assign the Default values to all parameters of programming.
➢ **Account Group Maintenance**: to group multiple customers.
➢ **Recent Files**: to select an existing customer.
➢ **Exit**: the command closes the DLS 5 Console. You will be asked to save the changed data of the current installation.
❑ VIEW menu
➢ **Start Page**: corresponds to click on the field **Start Page**.
➢ **Operators on Line**: list of the connected Operators.
➢ **Open Accounts**: list stored Accounts.

➢ **Communication Jobs**: list communication session alternatively click on 🖥.
➢ **Recent Activity**: list of the recent activities.
❑ TOOLS menu
➢ **Language Manager**: to edit, import / export, create a new language.
➢ **DLS 5 v1.50 Operator Maintenance**: in this window, the administrator can change the password for the DLS 5 Console and set the password for any user (with the possible operational limitations -Edit Operator Role) always for the DLS 5 Console.
➢ **Modem Manager Maintenance**: in this window you set the type of connection: PC LINK and the communication port.
➢ **Edit Current User**: see note in the previous page to change the DLS 5 Console language.
➢ **Back-up/Restore Database**: to set options to manage the DATABASE.
➢ **Recycle Bin**: select the system and delete it.
❑ WINDOW menu
➢ **Close all TABs**: close all open programming tables.
➢ **Start Page**: corresponds to click on the field **Start Page**.
❑ HELP menu
➢ **Info DLS 5**: to see the version of DLS 5 Console.
➢ **End User License Agreement**: to read the text of the license agreement.
➢ **Updates**: check for Updates-Show the Installed Updates-Manually Install Update.
➢ **Send Feedback**: to send any comment to the manufacturer.

Icons descriptions

🌐 *Global Upload:* if this icon is selected, the data programmed on the board is loaded onto the PC.

🌐 *Global Download*: if this icon is selected, the programmed data is sent to the board. Sending all of the device settings or some pages to the device will reset the Communicator.

💾 Save.

〰 Connect only.

📝 Communicate Tags.

☑ Upload Event Log.

🗑 Clear all Tags.

✖ Disconnect when completed.

📤 Programming/Audio and Import/Export.

👤 Select User (Normal User, Installer, Level 4 Installer): clicking on this icon it is possible to select the Access Level (see following parameter).

🔍 Option Name search: enter the option name to search in the DLS 5 Console.

Common icons in the various programming pages.

Clear All Tags.

Programming/ Audio and Import/Export.

Restore all options to Default.

Restore all options to originals.

This icon has a different meaning depending on the pages of Programming.

This icon has a different meaning depending on the pages of Programming.

Firmware Update: this icon is shown only when the **Installer level 4** is enabled (see previous page); it allows you to run the firmware update procedure.

Programming section contains the following pages.

Phonebook: telephone contact list page/parameters.

Options: options page.

Network Setting: connections parameters programming page.

Inputs/Outputs: output/input parameters programming page.

Communicator: communicator parameters programming page.

IP Receivers: IP receiver parameters programming page.

Voice Message: Page used to manage voice messages.

PSTN/PTM: PTM function setup page.

Event Log: page used to set all the parameters related to the Event Log.

Status: Page used to check the status of the Communicator.

To start the configuration of a new Customer, click on *File->New account.*

To display the list of customers stored in the archive, select the menu command *File->View->Start page*. This section will allow you to delete or retrieve configuration data, as follows:

1. Using the right button on the mouse, click on the Customer's name.
2. Click Load upload the respective data from the Hard-Disk, or Delete selected customer to delete the data configuration.

You can list Customers in alphabetical or code order by clicking the heading of the column concerned.

The configuration data are grouped in the following pages. The (Status) page is for "Supervisory and Control" purposes. All the pages are described in detail in this section.

Access level

This paragraph is intended to describe the way to access the device's functionalities according to the EN50136 standard.

If EN50136 compliance is enabled (see "EN50136" **OPTION** programming-(Firmware default enabled), the communicator will manage four levels of access.

➢ **Level 1** access to functions, indications (LEDs used to provide a signalling about the device trouble, GSM and PSTN line status) and notifications (SMS, voice messages, etc.) available to any individual without authentication PIN; this access level doesn't allow any access (read/write) to the communicator's programming options.

Click on the icon to select the following access Level.

➢ **Level 2 (Normal User)**: access to information about the operational status of the communicator (i.e. use of the software console in order to read the device status page and the programming options). Access level 2 may also allow access to basic functional tests and the management of other Access level 2 users and to enabled the Installer Code. It requires a PIN (**Default value: 000000**).

➢ **Level 3 (Installer)**: maintenance and commissioning functions, access to affect the communicator configuration including the addition, removal or replacement of components and other operations that directly, or indirectly, may influence the functions of the communicator (reading/writing of the programming options via the software DLS 5 Console). It requires a PIN (**Default value: 111111**).

➢ **Level 4 (Level 4 Installer)**: access to update the firmware and status page reading It requires a PIN (**Default value: 222222**).

☞ *See the programming page: OPTIONS.*

Phonebook

The Page **phonebook** holds 32 telephone numbers.

☞ *The remaining balance on the pre-paid SIM card is sent via SMS to phone number #1.*

❑ *Label*: Enter an alphanumeric string of up to 16 characters max.
❑ *Telephone number*: Enter a phone number including the country code in the format "+xxx" (e.g.: +39 for Italy). A maximum of 16 digits is allowed (the plus sign "+" counts as a digit).

☞ *The telephone numbers in the phonebook will be used for output activation, SMS dialler, Voice message dialler, IP receiver routing and PTM.*

❑ *White List*: Enable or disable the *White List* area would allow the Communicator to accept or refuse incoming calls. The Communicator accepts incoming calls, forwarding them to the telephone devices connected to LI terminals (such as a burglar alarm control panel); this is possible only if LI is active as a simulated line via GSM. The functioning mode of the *White List* option is linked to the selection or non-selection of the *Black List*, area which is present on the inside of the *Options* page->>**Dialing options**, as seen in the following table:

White List	Black List	Functioning Mode
Disabled	Disabled	Accept incoming calls from any number.
Disabled	Enabled	Refuse any incoming calls.
Enabled	Enabled	Accept incoming calls from number having an enabled **White List** option, refuse call coming from all other numbers

❑ *Activate Output (click on [+]*: select the telephone numbers which can activate the outputs T1 (OC1), T2 (OC2), T3 (OC3), T4 (OC4), T5 (OC5) and T6 (OC6) when the Communicator receives a call from them. This function does not depend on the *White List* or *Black List* options (*Options* page->*Dialing options*). The Calling Line Identifier service must be enabled before the output can be activated.

☞ *I To activate the output, programme the T1 (OC1), T2 (OC2), T3 (OC3), T4 (OC4), T5 (OC5) and T6 (OC6 terminals as "Output" and enable "Reserved Output" (see pages referring to Inputs/Outputs->[+] Outputs->Reserved Output).*

❑ *Output Activation Confirmation*: tick this box to receive a confirmation ring once the output has been activated.

☞ *The ring will be received 1 minute after the output has been activated.*
If the transmitter is already in operation (for example: the GSM channel is busy with a voice communication), the confirmation ring will not take place.

- ❏ **PTM**: click on to enabled the "PTM" function on the selected numbers, which allows the device to transmit calls over the GSM network in the event of failed communication between the control Panel and the receiver on the PSTN telephone line. By default is disabled.
- ❏ **CID/SIA Event conversion**: enable the trigger of voice call and/or SMS by decoding CID/SIA coming from the panel (see table on page 37).
- ❏ **Virtual receiver on GSM path**: if "CID/SIA Event conversion" option is enabled and "IP receiver" options is disabled, force the Communicator simulates a receiver (the communicator sends to the panel handshake and kissoff).
- ❏ **IP receiver on GSM Path**: if this option is enabled, the Communicator decodes the events sent to this number and forward them to the IP receiver over cellular data network.

Options

☞ *This page will be different, depending on the level of access: Normal User, Installer, Level 4 Installer.*

- ❏ **Encryption key**: the encryption key can be set so that the Remote Programming cannot be accessed by unauthorised persons. The encryption key may include between 1 and 32 hexadecimal characters. The default setting is 0 (encryption key not enabled).

User/Installer/Level4 Installer Authentication

☞ *This section will be different depending on the level of access to the programming (see above).*

- ❏ **User Code**: Enter the User code in this box (maximum 6 numeric characters) also to activate outputs remotely. For further information, please refer to the section REMOTE PROGRAMMING BY SMS MESSAGE. The default User code is set to **000000**. To program / change the User code before it is necessary to enable the access level **Normal User**.
- ❏ **Installer Code Enabled**: in this box, the **user** can enable the Installer code to program/modify the communicator. First enable the access **Normal User** level.
- ❏ **Installer code**: Enter the Installer code in this box (maximum 6 numeric characters). The default Installer code is set to **111111**.
- ❏ *Level 4 Installer Enabled*: in this box, the **Installer** can enable the **Level 4 Installer** to update the communicator Firmware. First enable the access **Installer** level.
- ❏ **EN50136***:* click on this box to enable the requirements of the standards EN50136.

☞ *To comply with the EN50136-2:2013 standards the function "EN 50136", factory enabled), should not be changed.*

- ❏ **Level 4 Installer code**: in this box, the **Level 4 Installer** can edit the **Level 4 Installer** code to update the communicator Firmware, (maximum 6 numeric characters). The default Level 4 Installer code is **222222**. First enable the access **level 4 Installer**.

Dialing Options

This part is used to enter some of the characteristics relating to the telephone numbers used.

- ❏ **Dial Prefix**: This Device will prefix the digits entered in this field to all the telephone numbers dialled through the **GSM**. If necessary enter a Prefix (maximum 8 digits) in this field. If no Prefix is required, leave this field empty.
- ❏ **Digits to Remove**: If this Communicator is connected downstream to a switchboard, the telephone numbers (programmed on the Control panel) must be preceded by the switchboard number (normally one digit). As the switchboard number is not required when calls are sent over the GSM Network, it must be removed from the digits which form the telephone number. Enter the number of digits that form the switchboard number (e.g. if switchboard number is 01, enter 2 in the "**Digits to remove**" field, as 2 numbers form the switchboard number).

☞ *The telephone number should at least have two digits more that the number in the "Digits to remove" area, otherwise the engaged tone will be come through, e.g.:*

1. in the Communicator set the **Dial Prefix** = 9999 and set 2 on **Digits to Remove**,
2. set "Voice dialer" on the Control Panel with this number: 99995503661730826,
3. enable phone calls,

4. in the Communicator the call is forwarded to the phone number 3661730826.

☞ *If the option "Digits to remove" is enabled and a panel calls a phone number that has the "CID/SIA Conversion" enabled (see "Phonebook"), the phone number in the "Phonebook" must match the typed by the panel (including the prefix), in this case the communicator will carry out the conversion.*

❑ **Black List enabled**: Check this box if you do not wish to receive calls from telephone numbers, authorising only the numbers selected previously using the White List function (*Phonebook page->White List*).

☞ *Only the "Black List" option cancels the call immediately.*

When the "Black List" and "Activates Output" options are enabled, there is a delay (some seconds) before the call is cancelled; When the Ring is selected for the "Activates Output" option, there is a delay (some seconds) before the call is cancelled; If the output cannot be activated, the communicator cancels the call immediately.

❑ **Tones**: Select the name of Communicator's country of installation; the selected country will establish a series of parameters for the proper working of the simulated telephone call.

❑ **Roaming Enabled**: Check this box to enable roaming.

Priorities

This page may be used to program several Communicator priorities, for the transmission of alarm events.

❑ **Dialer/LI Priority**: Select the priority of telephone devices connected to the LI terminals (such as an alarm control panel).

☞ *Dialer Events Priority: Select to establish, in this field, the priority of the communicator (e.g. 1: Receiver; 2: Ring; 3: Call Digital; 4: Voice call; 5: SMS).*

Generic

In This section may be used to set the audio levels of the loudspeaker and microphone fitted to the GSM Communicator.

❑ **Speaker volume**: The volume of the GSM loudspeaker may be adjusted by shifting the cursor.
❑ **Microphone volume**: The volume of the GSM microphone may be adjusted by shifting the cursor.

☞ *If the volume on the microphone is too high, it may corrupt the DTMF tones from devices connected to the LI terminals, making them unrecognizable.*

❑ **Enabled Antenna Cut detection**: Enable this option if you want to activate the output when the antenna is missing or shorted.
❑ **Enabled Battery Detection**: if this option is enabled it will be possible to detect faults about the connected back-up battery.

Automatic Clock Adjust

This section refers to the System.

❑ **SIM Phone Number**: Enter the telephone number of the Communicator's SIM CARD (maximum 16 digits).
❑ **Time zone**: The device will be able to update the system timestamp by itself and will be programmed with the local time zone. It will used for system clock correction in case of date time retrieved is in UTC format.
❑ **Auto SMS**: Checking this option the device will update the system date and time by sending an SMS itself.
❑ **IP Clock Adjust**: Checking this option the communicator acquires the date and time from the IP receiver 1, if programmed.

☞ *To comply with the EN50136-2:2013 standards the functions "Auto SMS" and "IP Clock Adjust" must be enabled and these functions must not be changed.*

Pay As You Go Balance

☞ *The pre-paid SIM CARD credit management service may be suspended at any time, at the discretion of each individual GSM network operator.*

This section can be used to send an SMS providing credit balance information (supplied by the operator) to the first number in the phonebook at regular intervals. Program the following options for a correct credit balance check request, in accordance with the type of operator used:

- ❑ **Enquiry Type**: selection of enquiry type (none, SMS, Call, Service Command).
- ❑ **Enquiry Number**: telephone number to call or to which an SMS message should be sent in order to request credit balance information.
- ❑ **Balance Message**: string used to send SMS messages and to make requests via service commands.
- ❑ **Enquiry Interval**: Enter the interval (HH-DD) at which you wish to send a periodic SMS containing credit balance information (if supported by your telephone operator). The interval consists of the following values:

  — (HH) next message time - Select the time at which you wish to send the next periodic SMS. The interval for these values may be set between 0 and 23.

  — (DD) next message day - Select the day on which you wish to send the next periodic SMS. The interval for these values may be set between 0 and 365.

SIM Expiration

- ❑ **SIM Expiration message**: The SMS with the expiring information programmed by user and with the expiration date appended will be sent to the first telephone number in phonebook.

☞ *The SMS is sent one time when the timeout expires only and no other attempts are performed.*

- ❑ **SIM Expiration Date**: fixed expiration date, the message will sent 30, 15, 7, 6, 5, 4, 3, 2 and 1 day before the expiry. Click on the button **NOW** you set the current time of the PC.

Protocol Setting

- ❑ **Handshake Repetition**: select the value: from 1 to 4.
- ❑ **Communication Protocol**: select the type of protocol to be used: Contact ID or SIA.

☞ *According to the programming of the Communication Protocol option, the communicator is capable of decoding alternatively events Contact ID or SIA events from the Control Panel connected on the line LI and can be the same for each telephone number that the connected control panel calls.*

The installer should verify that the operator (eg. Wind, TIM, Vodafone) work reliably with CID (Contact ID) over GSM, due to problems in the quality of transmission.

Network Setting

This page is to start a session and / or remote programming:

- ❑ **Serial Number**: enter the serial Number of the communicator.
- ❑ **Remote Access**: check this box to enable remote programming.
- ❑ **Remote Access APN**: access Point name, max 32 characters. This is an information which is generally required to the operator of the GPRS service. Enter the name of the service that provides the IP address.
- ❑ **Remote Access User Name**: some providers may require a user name to validate communication. If needed, enter this information here.
- ❑ **Remote Access Password**: some providers may require a password to validate communication. If needed, enter this information here.

☞ *See paragraph "Enable or disable remote programming via SMS".*

Input/output

This page is used to program input or output modes, output activation events, polarity (N.C. or N.O.), reserved outputs and remote activation SMS strings for reserved outputs.

- ❑ **Input/Output**: double click on number to see the programming of the Input/output selected.
- ❑ **Label**: enter an alphanumeric string of 16 characters max.
- ❑ **I/O Type**: this column is used to program terminals T1, T2, T3, T4, T5 and T6 for the following mode:
  - – **Input**: select this mode to enable the corresponding terminal as the **input line**.
  - – **Output**: select this mode to enable the corresponding terminal as an **open collector output**.
- ❑ **Polarity**: this box is used to program the output/input standby status:
  - – **Normally Closed** with the output/input in standby, the corresponding terminal is negative.
  - – **Normally Open** with the output/input in standby, the corresponding terminal is floating.
  - Select the corresponding Polarity to invert the parameter currently displayed.
- ❑ Click on **[+] Outputs** to open the outputs column for the events to be programmed. The tick indicates that in the presence of that event, the output will be turned on. Click on the boxes to insert / remove the check mark.

☞ *Programming the events linked to an output causes some of the boxes corresponding to that output to be disabled. Before you can begin programming, you will need to remove the ticks from various boxes.*

- ➤ *Panel Interconnection Fault*: active the output if the panel is not present
- ➤ *Jamming Detect*: active output when the device is under jamming attack.
- ➤ *Antenna Fault*: active the output when the antenna is cut or shorted.
- ➤ *Tampers*: when tamper is triggered.
- ➤ *PSTN Fault*: active the output in case of PSTN fault.
- ➤ *GSM Fault*: active the output in case of module power on fail, SIM issue, signal absent, no carrier.
- ➤ *No cellular Network*: active the output in case of issue related to the data connection activation.
- ➤ *IP receiver fail*: active the output in all faulty cases related to the communication with IP receiver.
- ➤ *Power Fault*: active the output in case of power fault.
- ➤ *Reserved output*: when this option is selected, all other events selected to activate the corresponding output are ignored.

For remote activation the output will be activated through caller recognition or via an SMS command.

- ➤ *Control String*: In this column, enter the string (maximum 16 alphanumeric characters) to be sent by SMS when you wish to activate/deactivate the corresponding remote output. This feature will operate even if caller identification is not enabled.
- ➤ *Activation Confirmation*: Use this column to select the type of confirmation you want when the output is activated. There are 4 different options to choose from: None, Ring, SMS or Ring+SMS (the latter option is not available if the Control string box has been left empty). The output activation confirmation is forwarded by means of a SMS when the output is activated by SMS. (see the following table).

PROGRAMMING			EFFECTS	
Black List	White List	Activation Confirmation	Call forwarded only if the communicator is switched to GSM Network	Confirmation Ring
Disabled	Disabled	None	YES	NO
Disabled	Disabled	Ring	NO	YES
Disabled	Enabled	None	YES	NO
Disabled	Enabled	Ring	NO	YES
Enabled	Disabled	None	NO	NO
Enabled	Disabled	Ring	NO	YES
Enabled	Enabled	None	YES	NO
Enabled	Enabled	Ring	NO	YES

> ➤ *FTC fault*: if selected, the output will be activated if communication is not successful

☞ *The selection of the FTC Signal event enables the Monostable option and allow to set the Monostable Time (ON Time).*

❑ **Type Monostable**: Normally the outputs, when activated, remain so until a deactivation command is received, at which point the output will revert to its standby status. If you want the output to revert to its standby status automatically after a set amount of time, select this option and set the activation time using the adjacent Monostable Time On (sec) box.

❑ **Monostable Time ON**: In this box, enter the value in seconds (from 1 to 86400 in steps of 1 second) indicating the time period for which the output, if set as Monostable, will remain active before reverting to its standby status (ON Time).

☞ *These settings also automatically update the parameters on the "SMS Voice Event/Action" and "Phonebook" pages.*

Inputs

If terminals T1, T2, T3, T4, T5 and T6 are configured as inputs there are up to 6 independents alarm input lines programmable as Normally Open (NO) and Normally Closed (NC), click on **[+] Inputs**.

The input will be checked at least every 30msec, if the input state change and remains stable for a time greater of 300msec than the event will be generated. In the following is shown all possible programming:

> ➤ **Panel interconnection Present:** used to be connected with a Control panel.
> ➤ **Dialer Block:** used to stop the dialer and delete the queue.
> ➤ **Force Communication on Simulated Line**: force the line switch from LE to LI.

Communicator

☞ *This page is used to program the general functioning of the Communicator parameters.*

SMS/Voice Calls

CALL OPTIONS

❑ **Call All Number**: Select this option to call all telephone numbers programmed for an individual event assigned to it
It is possible to choose: Voice Calls, Digital Calls, Voice and Digital Calls and Disabled. If this option is not selected the communicator will end the calls as soon as one of them has been completed successfully.

❑ **Call Confirmation**: Select this option if you want the communicator to wait for confirmation from the remote user that the message has been received, otherwise the communicator will attempt to deliver the message again: the remote user can send confirmation by pressing the ☒ button on his/her telephone (only applies to touch-tone keypads).

☞ *By pressing the button ☒ on your own telephone when listening to a voice message, both the current telephone call and any others in progress may be blocked.*
In some cases the communicator may misinterpret the answer from answering machines, ringback tones, GSM operator courtesy messages, etc. Users are advised to enable the "Call Confirmation" function.

❑ **Call attempts**: this field is used to enter the number of attempts to be performed (up to a max. of 8) if the call is not successful.
❑ **Repetitions**: this field is used to enter the number of times a message is repeated (up to a max. of 8) when the call is answered.

PERIODIC SMS AND VOICE

❑ **Periodic SMS/Call Send Interval**: Enter the interval at which subsequent periodic **SMS/Voice messages** are to be sent. The interval consists of the following values:
— (Days) next message day - Select the day value for the next periodic **SMS/Voice message**. The interval for these values may be set between 1 and 365.
— (Hours) next message time - Select the hour value for the next periodic SMS/voice message. The interval for these values may be set between 1 and 23.

- ❏ **Periodic SMS/Call First Send**: Select the date /hour on which the first periodic SMS/voice message is to be sent.

- ☞ *To comply with the EN50136-2:2013 standards the time "Periodic SMS/Call First Send" should be set equal to 1 day and this function should not be changed (default: 1 day).*

- ☞ *You MUST enter the "SIM Phone Number" and enable the "Auto SMS" and "IP Clock Adjust "in the "Options" page to setup the Periodic options above.*

- ❏ **Now**: if click on this icon you can get the date and time from the PC.
- ❏ **Ring only for periodic event**: if this option is enabled, instead of sending a voice message a periodic ring will be sent for 5 sec.
- ❏ **Phone Number Use**: 1 SMS Phone Numbers; 2 Voice Dialer Phone Numbers.
  Double Click on 1 to enable phone numbers for SMS Communicator, 8 of 32 phone numbers of the phonebook;
  Double Click on 2 to enable phone numbers for Voice Communicator, 8 of 32 phone numbers of the phonebook;

This section is used to program all parameters relating to the SMS/voice dialer, namely: the telephone numbers to call (the first 8 numbers in the phonebook):

- ❏ **Label**: this column lists the events for which a voice message may be programmed.

- ☞ *To select voice messages for the programmable input lines, set the corresponding terminal as an input (see I/O-Type).*

- ❏ **Telephone Numbers***:* click on **[+] Telephone Numbers** columns in accordance with the desired event. The tick indicates that a particular telephone number will be called when an event occurs. Click on the boxes to enter/remove the tick.

- ☞ *The telephone numbers are the first 8 entries on the "Phonebook" page.*

- ❏ **Voice Messages**: click on the column *First Message* in accordance with the desired event, then click on the button [...] to scroll through the list of messages (you can select, if recorded, up to 8 messages with a max. duration of 16 seconds each) and select one. Up to 3 voice messages can be selected for each event (First Message, Second Message, Third Message).

For setting SMS Dialer...

- ❏ **Label**: this column has 31 separate lines listing the events for which two SMS messages are sent, if programmed: one for activation and one for restore (the "Periodic SMS" event only sends an activation SMS).

- ☞ *To select SMS messages for the programmable input lines, set the corresponding terminal as an input (see I/O->Type).*

- ❏ **SMS Telephone Numbers**: click on **[+] SMS Telephone Numbers** in accordance with the desired input. A tick indicates that the SMS message will be sent to a particular telephone number when the corresponding event occurs.

- ☞ *The telephone numbers are the first 8 entries on the "Phonebook" page.*

- ❏ **SMS Test**: in the column *SMS Test*, click the box corresponding to the message to be programmed and enter the message you wish to send when the relevant event occurs (maximum 100 characters).

Central Station Calls

The following options to program the communicator to send an alarm event to the central station.

PERIODIC CALL

- ❏ **Periodic Test Transmission Interval***:* enter the interval in which the Periodic Test will be carried out. The interval consists of the following values:
  — (Days) next Test day - Select the day value for the next *Periodic Test*. The interval for these values may be set between 1 and 364.
  — (Hours) next Test time - Select the hour value for the next *Periodic Test*. The interval for these values may be set between 1 and 23.
- ❏ **Test Transmission First test**: Select the date /hour in which the *First Periodic Test* will be carried out.
- ❏ **Now**: if click on this icon you can get the date and time from the PC.

SIA

- ❑ **Date/Time on SIA packet**: if is enabled, on the SIA package will also include the date and time.
- ❑ **Label**: this column lists / describes the events for which to send a message.

☞ *Each input can be programmed with a specific Customer code (account).*

- ❑ **Customer Code**: enter the *Customer Code* (4 hexadecimal characters).
- ❑ **Contact ID Identifier**: enter the Contact ID code that the communicator will sent when the event occurs.
- ❑ **Event SIA Identifier**: enter the SIA code that the communicator will sent when the event occurs.
- ❑ **Restore SIA Identifier**: enter the SIA code that the communicator will sent when the event ends (00 if disabled),

☞ *The communicator will send the code SIA event when the event ends, ONLY if the Restore option is enabled.*

- ❑ **Channel type (Internal Event)**: select the channel Type: CID: over GSM or CID/SIA: over data network (see on page 16).
- ❑ **Event enabled**: if disabled, the event does NOT send codes, when it ends. If enabled when the event ends, send the programmed codes (see Restore SIA Identifier). Other programming: Disabled, Send Activation, Send Restoral, Send Activation and Restoral, Invalid Selection).
- ❑ **Telephone Numbers**: click on [+] Telephone Numbers columns in accordance with the desired event. The tick indicates that a particular telephone number will be called when an event occurs.

CID/SIA to SMS/Voice

If device detects the Control panel connected on LI line is dialing a number present in phonebook and the option "**CID/SIA conversion**" is enabled, the device decodes the CID or SIA event transmitted by Control panel then compare it respectively with all the patterns columns; if the decode event matches with a pattern then related voice messages or SMS are sent, see following table.

LI / LE switch	Protocol Selection	IP Receiver	CID/SIA Event conversion	Virtual Receiver	Effects
LE	CID / SIA	Not Interested	Disabled	Not Interested	Voice Call on LE (only if PTM is enabled)
LE	CID / SIA	Not Interested	Enabled	Not Interested	Voice Call on LE (only if PTM is enabled) CID/SIA conversion events (voice call/SMS) are triggered
Simulated PSTN	CID / SIA	Disabled	Disabled	Disabled	Voice call on GSM
Simulated PSTN	CID / SIA	Disabled	Enabled	Disabled	Voice call on GSM CID conversion events (voice call/SMS) are triggered
Simulated PSTN	CID / SIA	Disabled	Enabled	Enabled	CID/SIA conversion events (voice call/SMS) are triggered The Communicator generates Handshake on LI The Communicator generates Kissoff on LI
Simulated PSTN	CID / SIA	Enabled	Disabled	Disabled	CID/SIA Events transmission to IP receiver The Communicator generates Handshake on LI The Communicator generates Kissoff on LI when receives Ack from IP receiver
Simulated PSTN	CID / SIA	Enabled	Enabled	Disabled	CID/SIA conversion events (voice call/SMS) are triggered CID/SIA Events transmission to IP receiver The Communicator generates Handshake on LI The Communicator generates Kissoff on LI when receives Ack from IP receiver

- ❑ **Phone Number Use**: 1 SMS Phone Numbers; 2 Voice Dialer Phone Numbers.
  Double Click on 1 to enable phone numbers for SMS Communicator, 8 of 32 phone numbers of the phonebook;
  Double Click on 2 to enable phone numbers for Voice Communicator, 8 of 32 phone numbers of the phonebook.
- ❑ **Label**: this column lists the events for which a voice message / SMS. can sent.
- ❑ **Contact ID Identifier**: select if the event to be converted must be an Activation or a Restore, Select the event code through a label, for example "100 - Medical". Then select the Partition and the Zone.
- ❑ **Event SIA Identifier**: in the case of SIA event, the event Data Code will be compared with the patterns and consists of the characters from 'A' to 'Z'. Disabled option are represented as empty strings (00).
- ❑ **SMS Tel. Numbers**: click on [+] SMS Tel. Numbers columns in accordance with the desired event. The tick indicates that a particular telephone number will be called when an event occurs.
- ❑ **SMS Text**: in the column 'SMS Test', click the box corresponding to the message to be programmed and enter the message you wish to send when the relevant event occurs (maximum 100 characters).

IP Receivers

This page is for setting parameters related to GPRS.

☞ *Because the delays which may occur in transmission via GPRS, are caused by the activities of the network manager, we recommend you program as many call attempts to the alarm control panel as possible, and that you also provide a backup telephone number which transmits alarms via GSM as well as via GPRS.*

RECEIVER OPTIONS

- ❑ **Fibro account**: enter the **Fibro account code** for communication with SYSTEM III or SYSTEM receivers (10 hexadecimal characters) to allow the receiver to identify the transmitter.

☞ *Ensure a different customer Code is assigned to each communicator that transmits events to the same receiver.*

- ❑ **DNIS**: the communicator will send the DNIS queues within the Fibro packet to allow the receiver to identify the device (hexadecimal numbers from 00000 to FFFFF). DNIS is used to make sure that signals routed through Cellular Data Network reach the same customer account in the automation software.
- ❑ **Encryption Enabled**: click on to enabled, the communicator supports encryption with automatic encryption key.
- ❑ **Hold ACK in memory timeout**: Enter the time that a received ACK (acknowledge) will be held in memory (range 0 to 15 minutes). If 0 (Default) this option will be disabled.

RECEIVER 1

- ❑ **Receiver Functionality mode**: select **Primary** (Receiver 1 is enabled) *or **Not Used*** (Receiver 1 is disabled, Receiver 2 programming will be ignored; CID/SIA event transmission to central station is disabled).
- ❑ *Cellular   Receiver 1 Address*: enter the primary receiver IP address that can be written in the following formats: example "192.168.0.101".

☞ *In the case of invalid address (empty or not well-formed string), related Receiver is to be considered as Not Present.*

- ❑ *Receiver 1 remote port:* each receivers will be provided with its own UDP port with the following constraints:
  - The communicator will use this port to connect to receiver.
  - The valid range for port numbers is 1 to 65535. If remote port is 0, related Receiver is to be considered as not present.
  - The default port is 3061.
- ❑ **Receiver 1 Local Port**: for each receiver, the device will use a different UDP port with the following constraints:
  - The communicator will use this port to connect to receiver.
  - The valid range for port number is 0 to 65535. If Local Port is 0, the communicator will use a random port number in the range 1 to 65535.
  - The default port for Receiver 1 is 3060 and for Receiver 2 is 3065.

- ❑ **Main receiver APN**: enter the Access Point Name of the GPRS service provider being used. Enter the name of the IP address service provider in this box.

- ☞ *Make sure to enter the correct APN for WAP/GPRS access - otherwise some functions may be limited (for more information, please contact your customer support).*

- ❑ **Main receiver User name**: some providers may require a **user name** to validate communication. If needed, enter this information here.
- ❑ **Main receiver Password**: some providers may require a **password** to validate communication. If needed, enter this information here.
- ❑ **Supervision 1 enabled**: to enable supervision, select this option. The supervision option is ONLY available to the main receiver. The supervision messages are not sent when the device is performing a voice call (on GSM).
- ❑ **Supervision Time 1**: set the Supervision time for the monitored receivers. It is possible to set a Supervision time between a minimum of 60 seconds and a maximum of 65535 seconds, with steps of 1 second.

- ☞ *To comply with the EN50136-2:2013 standards the Supervision Time should be set less or equal to 3 minutes, and this function should not be changed.*

RECEIVER 2

In these fields enter the programming of the **Receiver 2**. The meaning of the **Receiver 2** programming is the same of the **Receiver 1**. If the **Receiver 1** is set as **Not Used**, Receiver 1 will be disabled and **Receiver 2** programming will be ignored; CID/SIA event transmission to central station will be disabled).

If the **Receiver 1** is set as: **Primary,** the **Receiver 2** programming may be:

- ➢ **Not Used:** the **Receiver 2** is disabled; the communicator works in Single Receiver Mode with **Receiver 1**.
- ➢ **Backup**: the **Receiver 2** works in the event **Receiver 1** is down; the communicator works in **Primary** + **Backup Mode**.
- ➢ **Redundant**: CID/SIA events will be sent to both **Receiver 1** and **Receiver 2**; the communicator works in Redundant Mode.

Voice Message

This page is for managing the voice messages. On this page it is possible to record and play the voice messages. This page refers to **SMS/Voice Call** for the association of voice messages to events.

This communicator can storage up to 150 Messages, 8 sec. each. It manages the Upload/Download of the voice messages by PC (hard disk, LAN, USB stick etc.) and manage the PC for recording and listening voice messages. Voice message will be upgradable.

- ☞ *Prerecorded audio files WAVE (.WAV) with several specifications may be used via the DLS 5 console. If wave files are loaded on a USB stick, it is necessary to download them via the DLS 5 4.0 console.*
  The communicator will read the audio files that have the following format: eaudidx.bin, where eaud is the fixed prefix that identifies audio export file, idx is the file index in the range 001 to 999 and .bin is the file extension.

- **PLAY Button** - Press to listen to the voice message again.

- **RECORD Button** -Press to start recording a new voice message.

- **STOP Button** - Press to stop replaying or recording a voice message.

- **PAUSE Button** - Press to pause replaying or recording a voice message.

- **ERASE Button** - Press this button to erase the voice message on the Alarm Communicator.

- **OPEN Button** - Press this button to load prerecorded audio files, from PC (hard disk, LAN, etc.) or USB stick.

- **SAVE Button** - Press this button to save the voice Messages on a folder of PC.

- ☞ *When recording a message, a progress bar indicates (in real time) the time elapsed.*
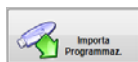
Programming/Audio Import/Export

Import Audio Button - Press this button to import the recorded voice messages from a USB stick. The communicator will convert the file in the voice messages to use in the system.

Export Audio Button - Press this button to export the recorded voice messages on a USB stick. The communicator will convert them into a file that can be used on another system.

Import Programming Button - Press this button to import the communicator programming from a USB stick. The communicator will convert the file into the programming to be used in system.

Export Programming Button - Press this button to export the programming communicator on a USB stick. The communicator will convert it into a file that will be used on another communicator.

PSTN/PTM

This page refers to the "PTM (Panel Transmission Monitoring) function", which allows the device to transmit calls over the GSM network in the event of failed communication between the control panel and the receiver on the PSTN telephone line.

☞ *The Communicator restores to normal mode after 5 minutes on the GSM channel.*

The **PTM** function considers communication to have failed when:

➢ It does not detect number dialling, if the "*Check Dialling*" option has been enabled (this option checks that telephone numbers have been dialled correctly).
➢ It does not detect a **kiss-off** (the signal transmitted by the receiver when successful event communication has ended).

☞ *The kiss-off signal frequency is 1400 Hz in the CID protocol and 2025Hz in the SIA protocol.*

All numbers are checked if the "*Telephone Numbers*" list is empty; otherwise only the numbers on the list will be checked.

Calls are transmitted over the GSM network when the programmed "*PTM Max Errors Before Takeover*" has been reached.

Primary Path
❑ **Primary Communication Path**: select in this field the primary line GSM or PSTN.

☞ *Phone numbers with PMT function are programmed in the PhoneBook page.*

Timeouts
❑ **LE Failure Timeout (sec.)**: enter the time in seconds (between 10 and 3600 seconds) for the Line down on the **LE** terminals, before the **PSTN** Fault event occurs

☞ *The time may increase up to 60 seconds if some telephone devices are connected to the terminals LI.*

❑ **LE Restore Timeout (sec.)**: enter the time in seconds (from 10 to 3600) that the telephone line must be connected to the LE terminals before the PSTN Fault event is reset.

☞ *To comply with the EN50136-2:2013 standards the function "LE Restore Timeout (sec.)" must not be changed.*
(default: 10 sec.)

PTM

❑ **Check Dialing**: disabled at factory default, if enabled, the missed dialing (i. e. when the PTM does not detect the number dialed by the control panel on the PSTN line) will be count as failure by the "PTM function".

❑ **PTM Max Errors Before Takeover**: *i*n this box, enter the total number of errors detected by the Communicator above which the PTM function i*s* activated. The PTM function is disabled by default (the default setting is 0); set a value from 1 to 4 to enable the PTM function.

❑ **PTM All Numbers**: all phone numbers, use the PTM function; the device will consider all numbers dialled as panel call.

Generic

❑ **Dialing Prefix**: enter the Prefix for the numbers on the PSTN line.

The device will monitor the number dialled over external PSTN line and if the first digits of the dialled number matches with a programmed prefix (the default value is "9999"), the device shall switch the communication channel from PSTN line to simulated line and routes the number dialled without the prefix over simulated line.

The switch prefix will be removed even in case of the number is dialled over simulated line.

Event Log

Events Log page is for reading and managing all Events stored.

The communicator can be stored up to 2048 events. Once the Log is full, each new event will overwrite and the oldest event will be lost as a result.

The events will be stored by the Number of the event, date / time and type of event.

Icons on the bar of Event Log

Clicking on the icon it is possible to upload new events on the Event Log.

Clicking on the icon clears the selections of events in the Event Log.

Clicking on the icon it is possible to export the events of the Log.

The communicator exports the file of the Log in the **.csv** format In the event of failure of Log exporting, the "unsuccessful log exporting" event will be logged and the device will provide related signalling In the event of success, the communicator will provide the signalling meaning "operations on USB stick are completed"

Clicking on the icon to update the Event Log

Clicking on the field "**All Event**s it is possible to set the temporal filters for selecting events for the **Log**:

All Events, Today, **Last 7 days**, **Last 14 days**, **Last 30 days**, **Last year** and **Custom**.

Firmware update

☞ *To update the firmware it is necessary to enter in the system with the prerogatives / password of the Level 4 Installer.*

The communicator, in this page, manages the Firmware upgrade both local than remote (via Cellular Data Network).

The communicator will be able to work while Firmware update is in progress

The device Firmware upgrade will be stored in the flash memory on the board.

The device will have the ability to be locally upgraded via the PC-Link connector or USB on the board and after rebooting the upgrade will performed.

Click on "**Select Firmware file**" to select the file to imported.

If the firmware downloaded is incorrect, the communicator starts with the resident FW version.

If the Firmware upgrade fails, the communicator will flash slowly the ACT LED.

☞ *The communicator will search the higher FW version; if the current version of FW in the communicator is different than the present version in file name (major, minor and test release), the .bin file will be used, otherwise the operation will be aborted. The communicator will read the file that has the following format: eprogidx.bin where eprog is the prefix that identifies the file programming, idx is the index of the file in a range from 001 to 999 and e.bin is the file extension.*

Status

This page will allow to monitor and control in real-time all the Communicator functions.

☞ *This page is updated every 5 seconds.*

Status section

This section lists the most important data relating to the communicator. The virtual display shows, in addition to the name of the GSM network manager, the GSM signal strength (this is displayed through a special indicator).

The device status indicator may be ON or OFF. The Device status indicator light when it is GREEN: proper function. When it is RED, this indicates that there is no communication between the software and the device; if it is ORANGE it means that there is a communication in course. For GPRS Main Receiver and GPRS Backup Receiver this indicator is ORANGE when the Receiver is initialized but NOT currently connected OR connected but NOT yet initialized.

The indicators will be also GREY when the relative options/actions are not programmed.

APPENDIX

EN 50136-2: 2013 compliance

The Communicator, to comply to EN 50136-2: 2013, must be configured and connected to a Control Panel, only in one of two following ways, **A** or **B**:

A) use PSTN (the control panel will made the control, of the response of the receiver, directly on the PSTN).

➢ PSTN: terminals **LI** of the communicator connected to terminals of the Control Panel for the external telephone line.
➢ Terminal **T4,** configured as output "Tamper", connected to the input of the Control Panel (only for the Communicator with plastic box).
➢ Terminal **T5**, configured as an output "GSM Fault", connected to input of the Control Panel.
➢ Terminal **T3** of the Communicator configured as input "Panel interconnection Present".connected to signal from the Control Panel, indicating Panel Present and / or telephone line detected
➢ Terminal **T6**, configured as Output "jamming detected" connected to input "Jamming" of control panel.

☞ *You must setup at least one IP receiver.*

B) not use of the PSTN

➢ Terminal **T4**, configured as an output "Tamper" + "Jamming Detected", connected to the input of the Control Panel (only for Communicator with plastic box).
➢ Terminal **T5**, configured as an output for "GSM Fault", connected to the input of the Control Panel.
➢ Terminal **T1** configured as an input **Alarm/Tamper**, connected to output of signalling "alarm intrusion / tamper" of Control Panel.

☞ *The "event input 1" to send the code "Intrusion alarm".*

➢ Terminal **T2** configured as an input, connected to output of signalling "Fault" of Control Panel.

☞ *The "event input 2" to send the code "Fault".*

➢ Terminal **T6** configured as an Output "IP receiver Fail", connected to an Input of Control Panel.
➢ Terminal **T3** of the communicator configured as Input "Panel interconnection Present" connected to a terminal of the Control Panel of signalling "Control Panel present".
➢ The earth terminal of the communicator, will be connected to an Input of control panel, to detect the presence of interconnection between the central and communicator.

☞ *In the Communicator page: "Central Stations calls", for the two events "input 1 Event" and "input 2 Event" it must enter a "Customer code" and select "Channel Type" value "CID/SIA over Data Network".*
You must setup at least one IP receiver.

See the tables below.

	Communicator		Control Panel
	LI	←→	LE
	T1: Output "PSTN Fault"		
	T2: Output "No cellular network"		
Default	T3: "Panel interconnection Present"	←	Output "LE presence detection"
	T4: Output "Tamper"	→	Input "Tamper" Communicator
	T5: Output "GSM Fault"	→	Input "GSM Fault"
	T6: Output "Jamming Detect"	→	Input "Jamming Detect"

Table 9: *Wiring diagram A: with simulated PSTN.*

	Communicator		Control Panel
	T1: Input "alarm / tamper"	←	Output "Alarm /Tamper"
	T2: Input "Fault"	←	Output "Fault"
	T3: "Panel interconnection Present"	←	Input "Panel interconnection Present"
Default	T4: Output "Tamper"+ "Jamming Detect"	→	Input "Tamper" Communicator
	T5: Output "GSM Fault"	→	Input "GSM Fault"
	T6: Output "IP receiver fail"	→	Input "Ack Fault"
	Earth Terminal	→	Earth Terminal

Table 10: *Wiring diagram B: without simulated PSTN.*

☞ *An event for sending contact ID of "alarm intrusion / Tamper", must be configured in case of activation of Input 1, event and an event for sending contact ID of "fault", in case of activation of Input 2 event.*

Pass-Through

This feature allows the Power Series PC1864 control panels (**PC 1864 4.1 EU**, **PC 1864 4.2 EU**, **PC 1864 4.2 ADT Spain**, **PC 1864 4.5 ADT Spain**, **PC 1864 4.5 EU**) to be programmed remotely via GPRS using the Communicator and the DLS 5 console software **updated with the "Driver pack for the 4005 Series"**. The Communicator must be properly programmed before connecting it to the Power Series PC1864 control panel.

Programming the Alarm Communicator

To program the Communicator, see the "PC Programming" section. Using the DLS 5 Console, perform the following operations:

1. Enable the Remote Programming on the Communicator (see "GPRS > Remote Programming" section).
2. Program a valid Access Point Name (APN) on the Communicator (see GPRS section).

☞ *Make sure the jumper **PST** is inserted.*

Connecting the Communicator to the Power Series PC1864 panel

To connect the Power Series PC1864 control panel to the Communicators you will need a PCLINK-PCLINK cable (see Figure 6) connecting the PC-LINK connector **15** on the Communicator with the PC-LINK connector on the control panel, making sure that you insert the connector the right way round.
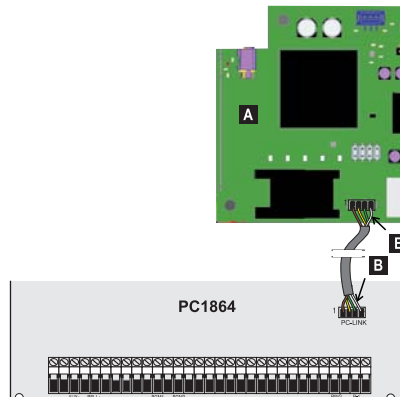

Figure 6 – *Connecting the Communicator to a DSC Power Series control panel via a PCLINK-PCLINK cable: **A)** Communicator; **B)** white wire.*

☞ *Connect the PCLINK/PCLINK cable as shown in Figure 6, please note that the white wire on the PCLINK-PCLINK cable connector must be connected to pin 4 of the PC-LINK connector on the Communicator and on the control panel.*

Operations to perform on the Power Series PC1864 control panel

Perform the following checks on the Power Series PC1864 control panel:

1. Check section 382 on the control panel: option 5 must be set to ON.
2. There must be NO faults, the GREEN LED on the control panel must be ON: this shows that the control panel sees the GS3125 Communicator as connected and working.

Operations to perform on the PC

Perform the following operations on the PC before programming remotely with the DLS 5 console software:

1. The PC must have a public IP address and a public port for incoming connections to the DLS 5 console software.
2. The firewall and the router must allow the PC to connect the public port to port **51004** of the DLS 5 console software.
3. Make sure you can access the public port of the router from another PC to see if theDLS 5 console software can be reached from the device.

Remote programming with the DLS 5 console

To remotely program the control panel, you must have installed the DLS 5 console software on your PC with the driver update package downloaded from the DSC site.

☞ *In order to get support on* DLS 5 *for the Communicator, you must install the "Driver pack for the 4005 Series".*

Before you start a remote connection via GPRS between the Communicator and the DLS 5 console software, you need to send a text message to the Communicator using a GSM phone, so you will need to know the telephone number assigned to the SIM card. The **SMS Message Generator** window of the DLS 5 console shows the information needed to create the text message to send to the Communicator. To see this window, perform the following steps:

1. Start up the DLS 5 console on your PC.
2. Create a **New Account** by set the type of control panel (for example, PC1864 v4.2EU) and the **GPRS (3G4005 v1.0)** as **Connection Type**.
3. After you have entered the required information, click on **Create**.
4. Go to the **GS/IP** option group and enter the Communicator **Serial Number** in the **Network Settings** option sub-group: you can find the Communicator Serial Number on the Communicator PCB.
5. Click on the **Global Upload** icon and select **GPRS** as the **Connection Type**, then click on **OK**: The **SMS Message Generator** window will be displayed.
6. Enter the **Public IP Address** of the DLS 5 PC to create the text message, then click OK: the DLS 5 console will wait for a connection with the Communicator.
7. Send the text message to the Communicator via your GSM phone.
8. After receiving the text message, if correct, the Communicator opens a remote connection via GPRS with the DLS 5 console.

The DLS 5 console can now communicate remotely via GPRS with a Power Series PC1864 control panel.

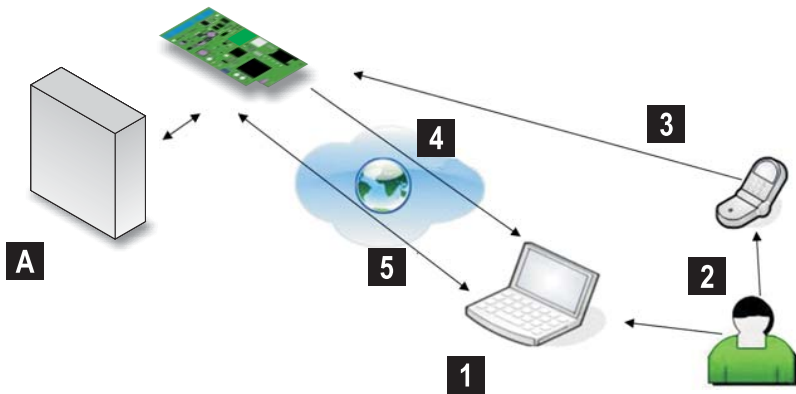**Figure 7 –** *Remote programming with DLS 5 console: A) DSC's Power Series Control Panel; 1) The operator opens a DLS access session via GPRS — DLS displays the information to use for the text message; 2) The operator enters the text message on his/her phone by copying the information displayed; 3) The text message with a public IP and DLS port   is sent to the Communicator; 4) The Communicator connects via GPRS to the DLS.*

FCC Compliance Statement

CAUTION: Changes or modifications not expressly approved by Digital Security Controls could void your authority to use this equipment. This equipment generates and uses radio frequency energy and if not installed and used properly, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for Class B device in accordance with the specifications in Subpart "B" of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in any residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to television or radio reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Re-orient the receiving antenna

• Relocate the alarm control with respect to the receiver

• Move the alarm control away from the receiver

• Connect the alarm control into a different outlet so that alarm control and receiver are on different circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the FCC helpful: "How to Identify and Resolve Radio/Television Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock # 004-000-00345-4.

IMPORTANT INFORMATION

This equipment complies with Part 68 of the FCC Rules. On the side of this equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this number must be provided to the Telephone Company.

3G4005 Product IdentifierUS: F53MO00B3G4005

REN:0.0B

USOC Jack:RJ-31X

Telephone Connection Requirements

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant. See installation instructions for details.

Ringer Equivalence Number (REN)

The REN is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call.

In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local Telephone Company. For products approved after July 23, 2001, the REN for this product is part of the product identifier that has the format: US: AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g., 03 is a REN of 0.3). For earlier products, the REN is separately shown on the label.

Incidence of Harm

If this equipment 3G4005 causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the Telephone Company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

Changes in Telephone Company Equipment or Facilities

The Telephone Company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the Telephone Company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

Equipment Maintenance Facility

If trouble is experienced with this equipment for repair or warranty information, please contact the facility indicated below. If the equipment is causing harm to the telephone network, the Telephone Company may request that you disconnect the equipment until the problem is solved. This equipment is of a type that is not intended to be repaired by the end user. DSC c/o APL Logistics, 757 Douglas Hill Rd., Lithia Springs, GA 30122

Additional Information

Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

Alarm dialling equipment must be able to seize the telephone line and place a call in an emergency situation. It must be able to do this even if other equipment (telephone, answering system, computer modem, etc.) already has the telephone line in use. To do so, alarm dialling equipment must be connected to a properly installed RJ-31X jack that is electrically in series with and ahead of all other equipment attached to the same telephone line. Proper installation is depicted in the figure below. If you have any questions concerning these instructions, you should consult your telephone company or a qualified installer about installing the RJ-31X jack and alarm dialling equipment for you.

Customer Premises Equipment and Wiring
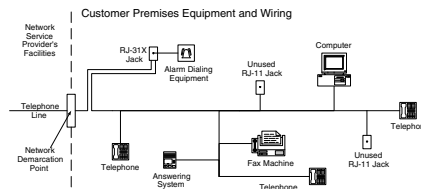
WARNING: To satisfy FCC RF exposure requirements for mobile transmitting devices, a separation distance of 20cm or more must be maintained between the antenna of this device and persons during device operation.

DSC

Digital Security Controls
www.dsc.com

ISTISD2EGS4005 0.0 171215 FM10