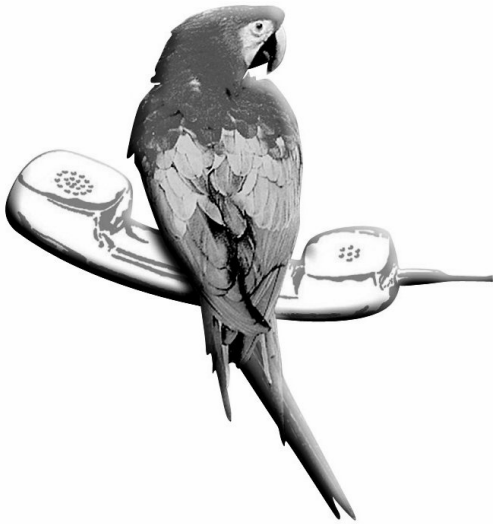

Working with love is a bond with our customers

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T·gsm

GSM Emergency Alarm and Communication System

User Guide

SW 2.2

Edizione 11 del 01/09/11

Thanks for having chosen a **TELEDIF ITALIA** *product*

Please read this manual carefully and keep it handy for any consultation; this will allow to obtain the best performance and to use the features and functions of the T.gsm in the best way.

T.gsm is an emergency system specifically designed to allow people sytucked in a lift cabin to send GSM alarms to a service center.

T.gsm is complianto to the following rules: 95/16/CE, EN 81-28 e EN 81-70, EN 81-72, CTR 21; EN 50082, EN 627 EN 50081-1:1991, EN55022, CEI EN139-4/A2:2003, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-6, EN61000-4-8 .

The main features of T.gsm are:

- Bidirectional (talk/listen)
- Self diagnosis of the main features with local and remote check
- GSM quad band module: 800/900/1800/1900 MHz
- GSM reception signal level local and remote control
- Local and remote control of the supply voltage
- Audio levels adjustable by programming
- Real time clock with automatic winter/summer time change
- Specific code per type of call for automated communication with a call center
- 4 independent call and communication systems : Cabin, Pit, Cabin Roof, Engine Room
- Filter of the cabin alarm programmable NO/NC or programmable as auxiliary alarm input
- 4 type of alarm or signalling can be activated by closing or opening a contact: main alarm (cabin), auxiliary alarm or filter, technological alarm 2 or GONG signal 2
- Prealarm message or warning for Alarm button press time
- System identification message
- Cabin reassurance message
- Messages are recordable and can be associated to different alarm events
- Messages identifying the type of alarm and its origin
- System messages and to support programming
- Remote diagnostic on demand and programmable (day/hour)
- Low battery alarm, threshold level and duration of the test programmable
- Check of the credit and of the expiration date of the SIM
- SMS warning for power failure and power recovery (if connected to the power supply unit T.ALI)
- Alarms and signalling by Voice call, CLID or SMS
- 2 Relays: one relay is programmable to automatically manage floor alarms / alarm sent or remote control and one relay programmable for automatic management of the alarm received or for remotecontrol
- Programming and review local and remote with a voice help online
- Programming by SMS
- Up to 12 telephone numbers associated to different calls or alarms

TECHNICAL SPECIFICATIONS

Power supply:	10 to 16 Vdc
Max consumption @ 12Vdc (RMS):	300 mA
Min consumption @ 12Vdc (RMS):	60 mA
GSM frequecy bands:	800/900/1800/1900 MHz
Size (without antenna):	155 (L) x 184 (H) x 35 (D) mm
Weight:	Approx 200 g
Woerking temperature:	+ 1°C to + 40°C
Storage temperature:	- 20°C to + 40°C
Working and storage humidity:	20% to 80%

T.GSM can be customized for different Mobile Operators and languages!

DISPOSAL

The device and the batteries must never be disposed of with household refuse. Please obtain appropriate information about the regulations in your community, and dispose of all refuse in accordance with regulations at separate locations provided.Improper disposal of the equipment or parts thereof may cause harmful effects to human health and to the environment.

RoHS

The electronic circuit of this product is designed and manufactured in accordance with the provisions of legislation 2002/CE (RoHS)

COMPLIANCE

Teledif Italia declares that the device meets the directives by the Councilin respect of EMC Directive 2004/108/EC and electrical safety equipment for low voltage Directive 2006/95/EC and its subsequent changes. The conformity of the product is expressed by the "CE" mark.

PRECAUTIONS FOR USE

Before attempting any cleaning or maintenance, disconnect the unit fromthe mains and any other connection. Do not put in contact with liquid and do not use aerosol sprays or solvents for cleaning. Use and / or store the product within temperature andhumidity ranges (see page 2). Use only the supply voltages in the ranges listed in this manual. For any repairs contact your dealer or the service center of Teledif Italia.

WARRANTY

Teledif Italia warrants this product free from manufacturing defects for 2 (two) years from the date of purchase as resulting from the invoice.

During the warranty period the equipment will be replaced or repaired free of charge in the service center of Teledif Italia in Torino.

The cost of transport to and from the service center of Teledif Italia is always charged to the customer.

The equipment to be repaired under warranty must be shipped toTeledif Italia in its original packaging and with the copy of the invoice.

Failure to follow the instructions for use, the use of power supply other than indicated, the assembly of non-original parts, repairs by unauthorized third parties, altering or removing the serial number and any tampering, void the warranty.

Nothing will be due to the buyer for inactivity time due to a failure, nor he may claim damages or compensation of expenses for any direct or indirect problem arising from use of this equipment.

For any problem it is advisable to contact the installer or the store where you purchased the unit.

Any dispute will be brought before the courts of Turin, Italy.
Per qualsiasi controversia sarà competente il foro di Torino.

C.4) ERRORS

By lifting a handset of a local telephone under error condition it is possible to listen to the error detected.
The following errors can be reported:

Error 1: No number stored for main alarm (parameters 81 to 85)
Error 2: The GSM module is not present or is faulty
Error 3: The SIM card is not present
Error 4: The SIM card is present but is PIN protected
Error 5: a) No GSM signal: the antenna is not connected, is broken, or the device is installed in a place not reached by the GSM signal
b) The SIM is expired
Error 6: The supply voltage is below 10 Vdc

Even under Error condition it is possible to access some features of the system by pressing * (star), the password and the relevant command, for example # (pound) to enter in programming mode or to read data. Even with Error conditions the system can be programmed.

D.1) FAQ: SUGGESTIONS AND TROUBLESHOOTING

PROBLEM	POSSIBLE REASON	POSSIBLE SOLUTION
The system sometimes doesn't answer and/or frequently reset	Proximity of strong electromagnetic pulse caused by power equipment	For proper operation it is advisable to install T.gsm at least 2 meters from any source of electromagnetic disturbances: switchgear, motors,power relays, inverters, etc. and use only new and dedicated cabling.
The system is active but does not manage the alarms	The system is in ERROR	Follow the indications in section "C.4"
System data and time are lost any time power supply is off	The backup battery PB1 is low	Replace with a new battery (CR2032)
Difficulty to correctly receive DTMF from remote	GSM signal low and/or audio noisy	Dial DTMF tones only when the system is not playing messages, wait at least 1 second between each key. Dont call T.gsm from a noisy place.
When communicating between the cabin intercom and the phone you hear a "whistle".	Audio levels to loud	Adjust the audio levels (TR1 and TR2)
When receiving a call from T.gsm, you can hear an echo	GSM audio levels to loud	Adjust the audio levels with parameters "08" and "09"
When talking between GSM and intercom there is a hum in the background	GSM signal too low	Move T.gsm in a place with better GSM signal
	Power supply downsized	Check that the power supply can provide betweeen 12 and 16 Vdc at minimum 500 mA current
	Connection cables in bad positions	Change the position of the cables, far away from the antenna
The recording quality is not good (you can hear a buzz)	Power supply not suitable	Use preferably a linear power supply, avoid switching power supply.

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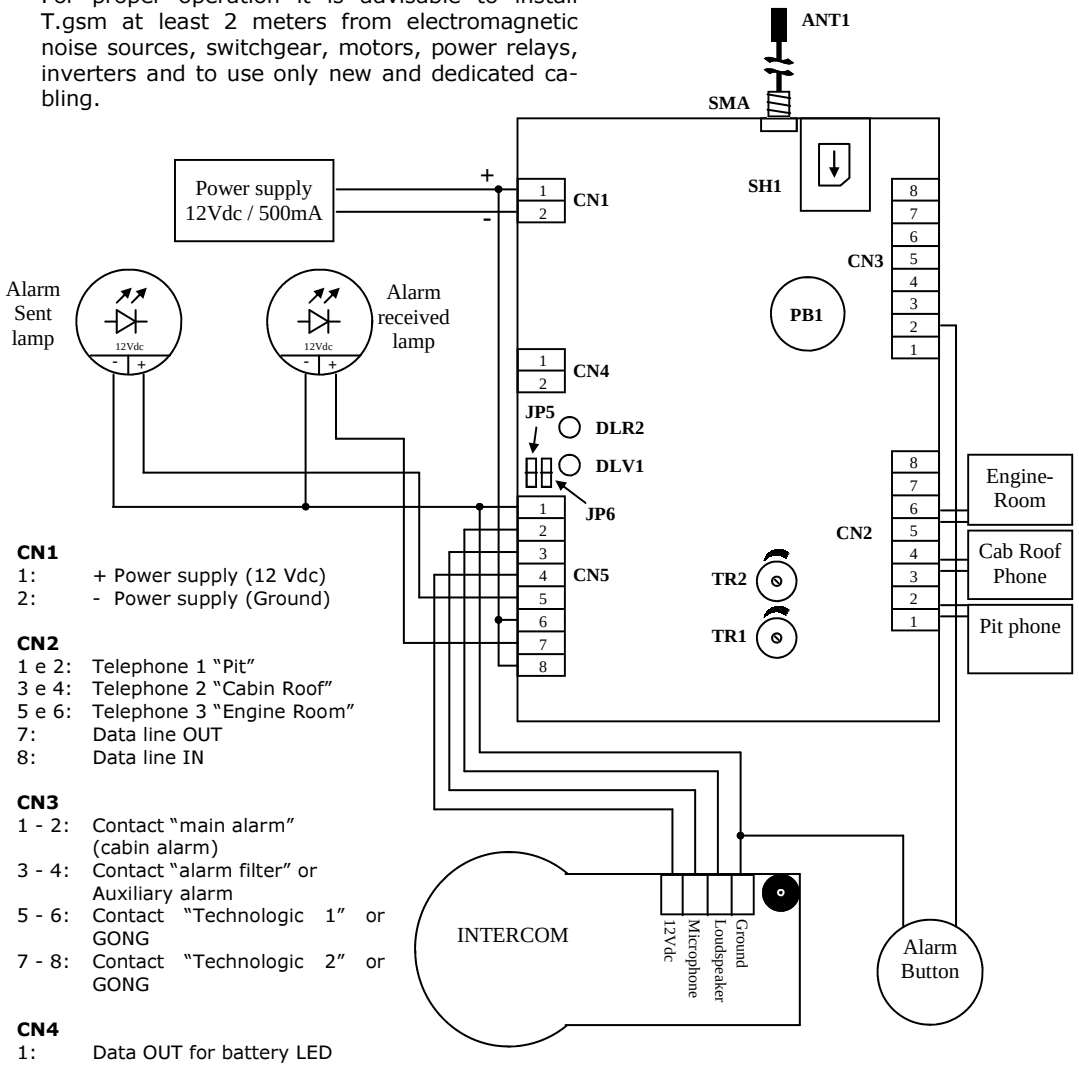
QUICK START

To quickly install T.gsm and use the basic features (main alarm) perform the following procedure:

1. Make sure that the PIN is disabled in the SIM
2. Open the T.gsm enclosure
3. Insert the SIM card in the socket SH1
4. Connect at least one analog phone to connector CN2 pins 1-2
5. Connect the alarm call button to the connector CN3 pins 1-2
6. Connect the Cabin intercom to connector CN5 pins 1-4
7. Connect the antenna to the antenna SMA connector
8. Feed T.gsm from a 12Vdc/500mA power supply or from a battery, through connector CN1 pins 1-2
9. Program from a local phone at least one emergency telephone number (parameter "81" page15)
10. Hang up the phone and wait that the RED LED end flashing. If the LED start flashing quickly go to section C.4.
11. When the GREEN LED flash quickly and the RED LED is OFF the system is operational and ready to manage at least the main alarm (cabin) and the maintainer alarm.
12. If necessary switch off power, complete the wiring, close the enclosure and complete the programming.

A.1) WIRING DIAGRAM

For proper operation it is advisable to install T.gsm at least 2 meters from electromagnetic noise sources, switchgear, motors, power relays, inverters and to use only new and dedicated cabling.



CN1
1: + Power supply (12 Vdc)
2: - Power supply (Ground)

CN2
1 e 2: Telephone 1 "Pit"
3 e 4: Telephone 2 "Cabin Roof"
5 e 6: Telephone 3 "Engine Room"
7: Data line OUT
8: Data line IN

CN3
1 - 2: Contact "main alarm" (cabin alarm)
3 - 4: Contact "alarm filter" or Auxiliary alarm
5 - 6: Contact "Technologic 1" or GONG
7 - 8: Contact "Technologic 2" or GONG

CN4
1: Data OUT for battery LED
2: DatiaOUT for battery relay

CN5
1: Ground Intercom
2: Loudspeaker Intercom
3: Handsfree microphone
4: P/S microphone (12 Vdc)
5: Contact relay 1 NO
6: Contact relay 1 Common
7: Contact relay 2 NO
8: Contact relay 2 Common

ANT1: Antenna
SMA: SMA Antenna connector
DLV1: GREEN Led "ON"
DLR2: RED Led "LINE"
TR1: Audio level from local phones to intercom
TR2: Audio level from intercom to local phones
JP5: Impedance regulation microphone
JP6: Impedance reegulation loudspeaker
SH1: GSM SIM Holder
PB1: 3V backup battery (CR2032) to keep RTC

C.3.11) CALL IDENTIFICATION CODES

When the operator requests the System ID (by pressing 4), T.gsm sends the 6 digit of the ID (parameter "04") and then the code corresponding to the type of call active (3 digit).

This coding is useful when managing T.gsm form an automated call center.

It is possible, on demand, to customize the codes identifying the type of the call. Please refer to Teledif technical services.

Currently only two modes are available. The mode can be selected by setting parameter 11 (ref section C.3.1, page 13).
Example: to select mode 2 set: 11 11 * 2 *.

TYPE OF CALL	DTMF TONE CODE	
	MODE 1	MODE 2
Main Alarm: CABIN	*01	D13
Allarme manutentori: PIT	*02	D13
Allarme manutentori: CABIN ROOF	*03	D13
Allarme manutentori: ENGINE ROOM	*04	D13
Allarme BATTRY	*07	643
TECHNOLOGICAL Alarm 1	*12	*12
TECHNOLOGICAL Alarm 2	*13	*13
LOW CREDIT Alarm	*30	*30
END OF ALARM	*20	523
REMOTE DIAGNOSTIC	*05	583
INCOMING CALL	*31	*31

C.3.12) TELEPHONE DIRECTORY

TELEPHONE DIRECTORY			
PAR.	VAL	FUNCTION	YOUR NUMBER
80	Max 20 digit	End of Alarm	
81		1st number Main and Maintainer Alarm	
82		2nd number	
83		3rd number	
84		4th number	
85		5th number	
86		Technological alarm 1	
87		Technological alarm 2	
88		Remote diagnostic	
89		Battery Alarm	
90		Low Credit or SIM expiration alarm	
91		Auxiliary Alarm	
99		By using this function it is possible to set in a single operation the same number for all the alarms and reports (from rel. SW 2.1)	

C.3.7.1) REPORT "ALARM SENT" AND "ALARM RECEIVED"

The signals for the cabin lamp relevant to Alarm Sent and Alarm Received are provided according to the recommndations; T.gsm manages even better these signals by connecting them to Relay 1 and 2 and programming them accordingly.

Report of "Alarm sent"
When a procedure of Main or Maintainer Alarm is started the Relay 1, if programmed, can activate the signal of "Alarm Sent".
This signal can remain ON depending on the settings:

- Until the "Alarm Received" signal is switched on (call suceeded)
- Until the start of the End of Alarm procedure.

Report of "Alarm received"
When an alarm call is acknowledged by pressing key 5, the Relay 2, if programmed, can start the signalling of Alarm Received for a specified time.

C.3.8) TELEPHONE NUMBERS

T.gsm can manage up to 12 telephone numbers (parameters from 80 to 91) to forward specific alarms or calls in Voice, Calling Line ID or SMS mode.

C.3.9) SMS MESSAGES

Whenever the system generates an SMS, for any reason, it includes together with the relevant message also the information about the system status:

1. "**Ver**" system software version
2. "**Rst**" number of the times the system has reset between two consecutive telediagnostics. This number gives an indication about the fact that the system is installed for instance too close to a source of electromagnetic noise (electric engine, inverter, switch, or powered by non adegate cable, etc.)
3. "**Vin**" reports the supply voltage of T.gsm when the SMS has been generated.
4. "**Residual Credit**": reports, if available, the value of the residual credit in the SIM.

When sendng SMS to the system:

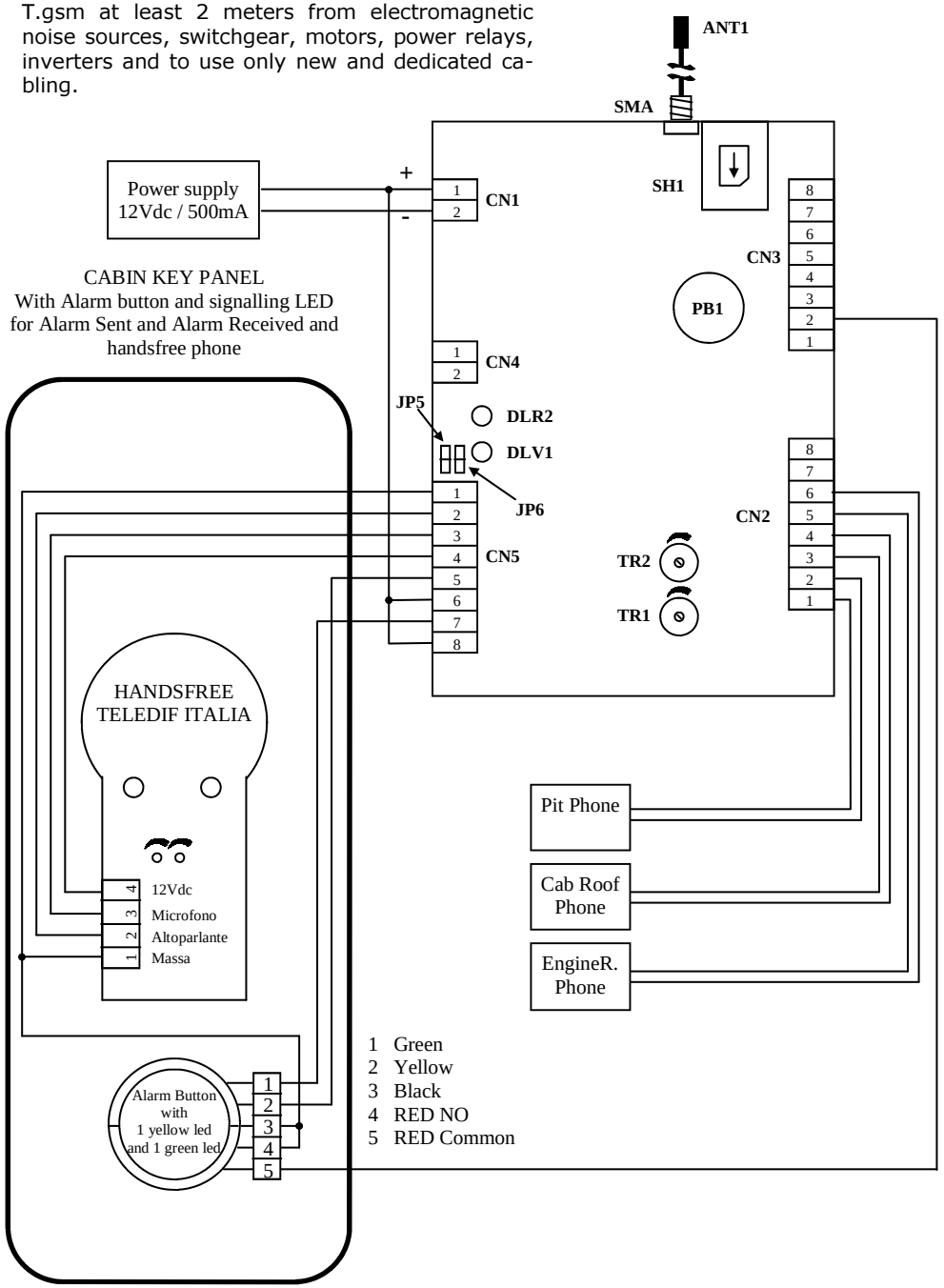
1. It is not possible to record messages and to read system parameters
2. It is possible to program multiple parameters in the same SMS.

C.3.10) Calling Line ID Calls

In the case that the Calling Line ID mode is enabled the system call the telephone number set for 10 seconds, then hang up; in this mode it communicate its number to the called party without charge.
In the case that the called number is busy, T.gsm retry every 3 minutes until it finds the number free and in any case until the completion of the number of loops specified.

B.1) WIRING DIAGRAM WITH TELEDIF CABIN PANEL

For proper operation it is advisable to install T.gsm at least 2 meters from electromagnetic noise sources, switchgear, motors, power relays, inverters and to use only new and dedicated cabling.



OPERATION

T.gsm has the following 4 status:
1. SELF TEST
2. OPERATION
3. PROGRAMMING
4. ERROR

C.1) SELF TEST

This status is shown by the Line RED Led slow flashing.

When switched on T.gsm automatically starts a self test procedure to check if there are the following minimum operating conditions:

1. If at least one of the 5 telephone numbers for Cabin and Maintainer alarm is programmed
2. If the GSM module is properly working
3. If the SIM card is correctly inserted
4. If the SIM is not protected by a PIN
5. If there is a GSM signal

The self test procedure is performed whenever any of the following conditions happen:
- System switch on
- Local telephone hang-up after programming or cancelling the telephone numbers relevant to Cabin and Maintainer alarm
- Local telephone hang up after a system reset

After a self test the system moves to:
- OPERATION: the RED led is OFF, see "C.2".
- ERROR: the RED led flashes quickly see "C.4".

C.2) OPERATION

C.2.1) Events and priorities

T.gsm has the priorities in managing the events:

1. LOACAL TELEPHONES
2. CABIN ALARM (MAIN)
3. MAINTAINER ALARM
4. AUXILIARY ALARM (if enabled see page 14)
5. BATTERY ALARM
6. TECHNOLOGICAL ALARM 1 or Gong
7. TECHNOLOGICAL ALARM 2 or Gong
8. SIM LOW CREDIT ALARM
9. SIM EXPIRATION ALARM
10. END ALARM
11. SELF TEST
12. INPUT CALL

Between two different GSM calls, in case the the system is managing an event and an higher priority event shows up, the system start handling the new event; at the end it resume managing the first event.

C.3.7) RELAY

RELAY					
PARAMETER	**VALUE**	**Default**	**Yr Value**	**FUNCTION**	**NOTE**
70	0 to 9	6		Relay 1	**0** = Relay 1 is active for the duration of the DTMF **1** to **4**: Realy is active from 1 to 4 seconds. i.e.: setting the value "3", when activated the relay remains closed for 3 seconds **5** = The relay 1 works in latch mode (step-step): each push of key 1 change the state (close or open) **6** to **9** used to confirm: "Alarm sent" **6** = Active until the start of the "End of Alarm" procedure **7** = Active until the call has been accepted (key 5) **8** = Active intermittently until the start of the "End of Alarm" procedure **9** = Active intermittently until the call has been accepted (key 5) When reading this parameter the system returns the value of the parameter and the actual state of the relay (ON or OFF)
71	0 to 6	6		Relay 2	**0** = Relay 2 is activated for the duration of the DTMF **1** to **4**: Realy is active from 1 to 4 seconds. i.e.: setting the value "3", when activated the relay remains closed for 3 seconds **5** = The relay 1 works in latch mode (step-step): each push of key 1 change the state (close or open) **6** = used to report "Alarm received": it is active fix for the time set with parameter 72 starting from the acknowledgement of the call (key 5) When reading this parameter the system returns the value of the parameter and the actual state of the relay (ON or OFF)
72	001 to 999	010		Activation time of the Relay 2	SECONDS Default for parameter 71 = 6

C.3.6) TECHNOLOGIC ALARM 1 (T1) and TECHNOLOGIC ALARM 2 (T2) or Gong sound 1 and 2

TECNOLOGIC ALARM 1 and 2 or GONG						
PARAMETER		VALUE	Default	Yr Values	FUNCTION	NOTE
T1	T2					
86	87	Max 20 digit	-	-	Tel numbers for technological alarms 1 (T1) and 2 (T2)	N. T1: N. T2:
60	65	0 to 9	2		Number of alarm loops	**0** = ENDLESS
61	66	01 to 99	10		Time between two succeeded calls when the alarm is still ON, or between a call succeeded and the next one or between an alarm not acknowledged (max loops) and the start of the next loop	HOURS
62	67	0001 to 9999	0060		Minimum time for the contact to stay open or close to validate the alarm	SECONDS
63	68	1 to 4	1		Mode of operation of the alarm contact	**1** = N/O **2** = N/C The system stops the procedure in the absence of the alarm condition (reopening or closing of the contact) **3** = N/O **4** = N/C The system does not stop the procedure in absence of the alarm condition (reopening or closing of the contact)
64	69	0 to 3	0		Call mode: voice, CLID or SMS	**0** = Voice call **1** = Calling Line ID call **2** = SMS message **3** = Bell/gong sound in the cabin
Fix Value		3	-	-	Time between two failed calls	MINUTES The calling Line ID call is considered succeeded when the dialled number is free. The SMS sent is always considered successful.

C.2.1.1) Local telephones

T.gsm supports 3 local phones:
Phone 1 = Pit
Phone 2 = Cabin Roof
Phone 3 = Engine Room

From the local telephone it is possible to:
- Start the end of alarm procedure, if enabled
- Command the relays, if properly programemd
- Start a the specific alarm: pit, cabin roof, engine room
- Request System ID
- Talk with the cabin intercom
- Start the remote diagnostic, if the system is idle
- Cancel and operation in progress
- Program the T.gsm
- Check system settings
- Record and play the voice messages

Operations from the local phones have a timeout for entering the DTMF codes; if no key is pressed within 60 seconds the command are disabled until the key star is pressed. The timeout is announced with a voice message.

C.2.1.2) Cabin alarm (main)

An alarm call is forwarded by pushing, for a programmed time, the alarm button in the cabin; the system, if the parameter hes been set, send a pre-alarm message, then start the alarm procedure and play a reassurance message in the cabin.

The alarm call is considered successful if:
- The called number answers and acknowledge the call by pressing "5"
- The alarm is stopped by the maintainer phone, in the referred cases

The called party receives an identification message (location), if recorded; by pressing the 5 key he is connected to the cabin and can talk to the cabin intercom. The called party can also activate all the functions provided by the system programming using the telephone keyboard.

T.gsm can store up to 5 phone numbers for cabin and maintainer alarm; the system dial these numbers in a loop until it receives a valid answer or until the programmed number of loops.

At the start of each new loop the system play a reassuring message to the cabin.

The reports of Alarm Sent and Alarm Received, if not differently managed, can be automatically activated by the relays, when programmed.

C.2.1.3) Maintainer alarm (from the telephones: pit, cabin roof, engine room)

A maintainer alarm call (trapping in the pit, cabin roof or engine room) can be generated by any of the local phones, just by lifting the handset and pressing 3. The system call the number stored for the main alarm, at the answer play the identification and location message and, if enabled with parameter 27, the relevant alarm message (from sw version 2.1).

C.2.1.4) Auxiliary alarm or filter main alarm (cabin)

The "call filter" feature allows to disable, when active, the transmission of the main alarm.
The filter is generated by a logic contact programmable as NO or NC.
When properly programmed, this contact can also be used as an auxiliary alarm contact (ref. Page 14, parameter 22).

C.2.1.5) Battery alarm

T.gsm generate a battery alarm whenever the battery voltage drops below the programmed value for a programmed time.

The system is also equipped with a data input (CN2-8 and ground) to manage a signal coming from the power supply with intelligent battery charger T.ali.

The battery alarm is reported in one of the following ways:
- A call to the number programmed, followed by the message identifying the system followed by the message battery alarm
- A call to a programmed number in CLID mode
- Sending an SMS to the number programmed

C.2.1.6) Technological alarm 1 and 2 or Bell contacts

The system is equipped with 2 inputs, individually programmed and configured for technological alarms or for the sound of a bell through the cabin intercom loudspeaker.
Each contact can be programmed N/O or N/C; the trigger time (the time that the contact must stay Open or Closed to start the procedure) can also be programmed.
The technological alarm is reported in the following ways:
- A call to the number programmed, followed by the message identifying the system followed by the message of technological alarm 1 or 2
- A call to a programmed number in CLID mode
- Sending an SMS to the number programmed

C.2.1.7) SIM Credit Alarm and SIM Expiration alarm

SIM CREDIT: T.gsm performs a daily procedure to enquiry the credit (according to the operator); when the credit is below the value set, T.gsm sends the relevant alarm, if programmed (page 17 parameter 56)
The credit alarm is reported in the following ways:
- A call to a programmed number in CLID mode
- Sending an SMS to the number programmed

SIM EXPIRATION: if parameter 57 is programmed the system send an alarm message with the modalities set in parameter 56.

C.2.1.8) End of Alarm

T.gsm, after a cabin or a maintainer alarm, can manage the end of alarm call in different ways that can be enabled from local or remote:

a. From remote:
   - After an alarm received, by pressing "0" before hanging up when in communication with the cabin intercom or one of the maintainers phones
   - Following an alarm call, by recalling the T.gsm number that has generated the alarm and pressing "*" <password> "0".

b. From a local phone:
   - Picking up the handset then pressing "*" <password> "0".

The end of alarm procedure performs the following functions:
- Switch off the end of alarm signal, if managed by a T.gsm relay
- Start a call to the programmed number and at the answer plays the relevant message.

If both the relays and the telephone number are not programmed, T.gsm acknowledges the end of alarm command with the message "Wrong code".

BATTERY ALARM					
PARAMETER	**VALUE**	**Default**	**Yr Value**	**FUNCTION**	**NOTE**
89	Max 20 digit	-	-	Tel No. for Battery Alarm	N.:
50	0 to 9	0		Number of loops	**0** = ENDLESS
51	100 to 150	110		Threshold	Tenths of Volt (+/- 0,1V) Example: 105 = 10,5 Vdc
52	00 to 99	01		Time below the threshold	MINUTES
53	00 to 99	01		Time between two battery alarm calls suceeded (confimed by "5") with battery alarm ON or with the number of loops completed without acknowledgement and with the alarm still ON	Espresso in ORE Example: setting the parameter to "02", if the alarm signalling has been acknowledged (by key 5) the system send an alarm call every 2 hours until the problem is solved.
54	0 to 3	0		Call mode: voice, CLID or SMS	**0** = Voice call **1** = Calling Line ID CALL **2** = SMS message **3** = Send an SMS for the Alarm, and, if connected with **T.ali(*)**, send an SMS also in case of power failure and power restore. Parameters **2** or **3, if active,** disable parameter 53
Fix	Fix	3	-	Time between two failed calls	MINUTES
LOW CREDIT AND SIM EXPIRATION ALARM					
90	Max 20 digit	-	-	Tel number to check the credit and the expiration of the SIM	N.:
55	01 to 99	01		Credit limit	In EURO If the credit is below to the limit set the system start the credit Alarm procedure. The credit is controlled every day. When reading this parameter the system play the residual credit figure in Euro and Cents (from rel. SW 2.1). The decimal is read by a beep
56	0 to 2	0		Not enough credit Alarm	0 = Disabled 1 = Calling Line ID 2 = SMS
57	MMGG	0000		SIM expiration SMS message	MM = Month DD = Day 0000 = Disabled

(*) T.ali is the intelligent power supply with battery charger

C.3.4) REMOTE DIAGNOSTIC

The remote diagnostic is the procedure used by the system to communicate that it is well performing and in operation.

NOTE: system data and time must be properly configured (parameter "10").

REMOTE DIAGNOSTIC					
PARAMETER	**VALUE**	**Default**	**Yr Values**	**FUNCTION**	**NOTE**
88	Max 20 digits	-	-	Remote diagnostic tel. number	N.
40	0 to 9	2		Number of loops	0 = ENDLESS
41	01 to 99	03		Time between two remote diagnostic calls	DAYS
42	00 to 23	10		Hour of the call	HR=
43	00 to 59	00		Minute of the call	Min=
44	0 to 2	0		Mode to operate the remote diagnostic	**0** = Call with voice message **1** = Calling Line ID Call The system communicate its CLID to the called user **2** = SMS call The system send the diagnostic via a preset SMS, including System ID and message explanation
Fix		3	-	Time between two failed calles	MINUTES

C.3.5) - BATTERY ALARM
- LOW CREDIT
- SIM EXPIRATION

T.gsm check continuosly the voltage of the power supply on connector CN1 and start an alarm procedure if the voltage is below the value set with paremeter "51" for the time duration set in parameter "52".

To verify the low credit condition the system check the daily SMS coming from the operator in response to the SMS enquiry. This procedure is factory preset for different countries/operators. Please contact Teledif to check that you country/operator variant is available.

Teledif Italia does not assume any responsibility for errors or for expenses charged by any operator for any reason.

C.2.1.9) Self test

The system has two different self test modes:
- On demand
- On schedule: at time programmable intervals (day/hour/minute)

A self test call can be performed in the following ways:
- Dialling a programmed number and sending ID messages
- Dialling a programmed number in Calling ID (CLI) mode L'invio di un SMS al numero programmato
- Sending an SMS to the number specified

An on demand self test can be started from a local phone or from a remote phone.

a. Request from a local phone:
   1. Lift the handset
   2. Dial Star and the password
   3. Dial 6
   4. Hang up

The system starts a self test to the phone number programmed and plays a voice message.

b. Request from a remote phone:
   1. Dial the telehone number of the system
   2. At the answer (ID message), dial star, the password and the key 6
   3. Hang up

The system starts a self test to the phone number programmed and plays a voice message.

C.2.1.10) Incoming call

T.gsm answers an incoming call after the specified number of rings, by playing the ID message. To access to the system dial the following commands:
1. Star (*****)
2. The system answers with the message "enter password" or "insert code"
3. Dial the password, if programmed, if not dial directly the control code for the command or procedure you want to activate
4. The system answers with the message "password correct" or "password incorrect", "correct code" or "wrong code" or with the corresponding function message
5. Dial 5 to open the voice channel with the hands-free of the cabin (the cabin, for privacy reasons is warned by a "beep", at regular intervals)
6. To close the connection dial "9" or hang up

If you do not enter the key * (star) within the time set with parameter 05, the system warns with a sound signal indicating the timeout and then it releases after 10 seconds.

In the case of the occurrence of an event with higher priority the incoming call is closed and the system will initiate the procedure to manage the new event.

NOTE: When generating DTMF tones from remote it is sometime possible that the DTMF tones are not always properly recognized, due to radio GSM repeaters and to the noise in case of weak signal. In this case the following precautions must be used in sending DTMF tones:
1. Only send DTMF when system messages are ended
2. Wait at least one second between each digit

C.2.1.11) Answer to an alarm call generated by T.gsm

When the operator of the call center answers the call, he receives the System ID message (recordable message, parameter 30) followed by the message indicating the alarm originator (cabin, pit, cabin roof or engine room) and by the instructions on how to accept the alarm and get in communication with the caller ("dial 5 to connect").

The messages are repeated until the operator dial 5 or disconnect dialling 9, or the answer time-out expires (parameter 6).

Dialling 5, if programmed:
- Activate realy 2 (alarm received) for the programmed duration(parameter "72"),
- Open the voice communication between the cabin intercom and the called number
- Start the "conversation timeout" for the time specified (parameter "05").

When approaching the end of timeout (10 seconds from the end) beeping tones are played. Dialling any number regenerates the time out.

While connected it is possible to access to "remote controls" (Section C.2.2) using the relevant codes; if wrong codes are used, the system answer with the message "wrong code".

T.gsm returns to idle state after receiving 9, when the line is released or at the expiration of the communication timeout.

C.2.1.12) Cancelation of the procedure in progress

T.gsm gives the possibility to cancel an alarm procedure in progress.

To cancel the procedure:
1. Lift the handset of a local phone
2. Dial star
3. If the system has not yet performed the call, it will answer with a message relevant to the active procedure
4. Press 9
5. T.gsm will play the message "good code"
6. The proceduer is then canceled and it is possible to hang up

NOTE: if the procedure is performed while a call is already in progress the system will not allow the cancelation and will open the voice communication between the GSM line and the local phones allowing to listen to line events. For security reasons it is not possible to cancel the procedure if the system is performing the first calling cycle.

To delete a stored telephone number or a previosusly set value start the programming mode for the parameter and enter an empty "value". Example 11 82 **.

If it is required to send and SMS instead or in addition to the phone call when a Cabin or Maintainer Alarm starts, when programming include as a first character of the value field pound (#). The SMS is managed as a call suceeded and is therefore sent only once, also in case of more than one loop for a successful phone call. If it is requested that an SMS is always sent, it is necessary to program the relevant number in the first position, since the acknowledgement of a phone call (key 5) stop the calling loop and therefore any SMS call.

Example: with the following settings 11 81 * # 3355954488 * and 11 82 * 800 800 800* the system starts the alarm procedure by sending the sms to the first number (3355954488) then start the calling loops to the phone number (800800800).

C.3.3) MESSAGGES

The system provides 2 types of messages

1. System messages: factory stored messages that cannot be cahnged by the user.
2. User recordable messages: 6 messages that can be associated to specific functions.

In order to record good quality messages, the length of each message must be determined and programmed before recording it.

To record a message from a local or a remote phone:
1. Push * (star)
2. Dial the password (if requested)
3. Push # (pound) to enter programming mode
4. Dial the code of the message to record as follows
   11 33 * 08 * where:
   11 to start writing mode
   33 code of the message to record (i.e. "technological 2")
   * star
   08 = duration of the message to be recorded
   * star
6. The system will answer: " Please start recording after the beep"
7. Speak clearly into the microphone of the handset
8. Once the programmed time is expired the system will answer: "Message recorded"
9. To listen to the message dial 12 and the message code. In this example 12 33 to listen to the message associated to the technological 2 alarm.
10. If the recording is not satisfactory repeat the procedure from point 4.

NOTE: In case the recording is noisy or bad quality, check the quality of the power supply and of the telephone used. A system reset does not cancel the messages recorded.

RECORDABLE MESSAGES				
PARAMETER	**VALUE**	**DEFAULT**	**MESSAGE ASSOCIATED**	**NOTE**
30	02 to 20	-	System LOCATION	In SECONDS Lenght of the message to record The message played is relevant to the parameter selected
31	02 to 20	-	Cabin REASSURANCE	
32	02 to 15	-	Technologycal 1	
33	02 to 15	-	Technologycal 2	
34	02 to 15	-	Auxiliary Alarm	
35	02 to 15	-	Cabin Alarm	

C.3.2) - MAIN AND MAINTAINER ALARM (PIT, ROOF, ENGINE ROOM)
- AUXILIARY ALARM OR FILTER MAIN ALARM
- END OF ALARM

MAIN AND AUXILIARY ALARM					
PARAMETER	**VALUE**	**De-fault**	**Yr Values**	**FUNCTION**	**NOTE**
81	Max 20 digit	-	-	1° Phone number main and maintainer alarm	Your n:
82		-	-	2° Phone n.	Your n:
83		-	-	3° Phone n.	Your n:
84		-	-	4° Phone n.	Your n:
85		-	-	5° Phone n.	Your n:
91		-	-	Auxiliary alarm ph. n.	Your n:
20	0 to 9	2		N. of loops for main/ auxiliary alarm	**0** = ENDLESS
21	0 or 2 to 9	2		Minimum press time for the main/aux alarm button	In SECONDS **0** = immediate start without pre alarm message
22	0 to 3	0		Aux alarm contact or Filter Cabin alarm	**0** = Filetr disabled **1** = N/O: if closed, cabin alarm is not generated **2** = N/C: if open, cabin alarm is not generated **3** = Contact used as auxiliary alarm
23	1 or 2	1		Method of operation of the contacts main and aux alarm	**1**=ON N/O(Normally open) **2**=ON N/C(Normally closed)
24	0 or 1	1		Delivering of the message "pre-alarm"	**0** = OFF **1** = ON
27	0 or 1	1		Delivering of the message Maintainer alarm (from SW 2.1)	**0** = OFF **1** = ON
Fix		5	-	Time between two failed alarm calls (main, aux and maintainer alarm)	In SECONDs
END OF ALARM					
80	Max 20 digit	-	-	Number end of alarm	Your n:
25	0 to 9	2		Number of retries for the tel. number for end of alarm if unsuccessful	**0** = ENDLESS
26	1 or 2	1		How to manage the end of alarm	**1** = Start end of alarm only from a local phone **2** = Start end of alarm from a local or a remote phone
Fix		3	-	Time between two unsucessfull end of alarm calls	In MINUTES

C.2.2) System access and control codes

The access to the system is possible in two ways:
a. From a local phone:
    1. Lift the handset of a local phone
    2. Press the star key
b. From a remote phone:
    1. Dial T.gsm telephone number
    2. At the answer (ID message), press the star key

In both cases it is necessary to dial the password (only if active, i.e. different from "0000").
Once accessed to the system it is possible to use the "TELECONTROL" o "PROGRAMMING" codes

REMOTE CONTROL CODES		
FUNCTION	**CODE**	**ACTIONS T.gsm**
End of Alarm	0	Start, as soon as possible, the "End of Alarm" procedure (only further to a MANTEINER or CABIN ALARM)
Activate Relay 1	1	Control relay 1 according to parameter "70"
Activate Relay 2	2	Control relay 2 according to parameter "71"
Maintainer Alarm	3	Send Alarm "pit" o "cabin roof" or "engine room" according to the phone originating the alarm
ID Request (System ID code)	4	Send through DTMF tone the identification code programmed (parameter "04") and the code of the typology of the call (parameter "11" , sect. "C.3.9")
a. Enable conversation b. Acknowledge the call c. Reload the "Communication Time-out"	5	a. Open the communication with the cabin b. Call suceeded c. Extend the timeout
Self Test request	6	Start a procedure for a self test diagnostic with a call to a programmed number
Listen to the location message	7	Play the location message
a. Terminate the conversation b. Terminate a call c. Cancelation of a procedure	9	a. Close the audio from the local phones to the intercom b. Hang up the call in case the call is: ⇒Outgoing and accepted by key 5 ⇒Incoming with correct password c. In case an alarm procedure is ongoing and the start key is pressed, the procedure is canceled
Switch audio between GSM and intercom or GSM and phone	*	a. From remote phone: it is possible to switch the audio from the intercom to the local phones b. From a local phone: if a call is active it is possible to talk to the remote phone or to the cabin

C.3) PROGRAMMING

Programming allows to Read and Write system parameters and use the following syntax:

To Write:
WRITE CODE (11) + PARAMETER + STAR (*) + VALUE + STAR (*)
To Read:
READ CODE (12) + PARAMETER

PROGRAMMING CODES		
FUNCTIONS	**CODE**	**ACTIONS T.gsm**
Enter in program mode	#	Request PROGRAMMING codes
Exit program mode		Request TELECONTROL codes
WRITE Code	11	WRITE a value to a parameter
READ Code	12	READ a value from a parameter

To start programming from a phone:

1. From a local or remotye phone access to the system
   - Form a local phone lift the handset and dial * (star);
   - From a remote phone, dial the telephone number of the T.gsm system; after listening to the Location message dial * (star);
2. Wait the message requesting the password
3. Dial the password
   - Wait the message password correct
4. Dial # (pound)
   - Wait for the message confirming the access to the programming mode
5. Dial the programming codes with the relevant parameters, following the correct syntax
   - At each correct programming step the system plays the message: "correct code"
   - At each wrong or not possible or not recognized programming step the system plays the message: "wrong code"
6. To exit programming hang up or dial # (pund)
   - The system plays an acknowledgement message

To programm or change a setting with an SMS:

1. Prepare a message containing the programming codes as it is done from a phone (see "Example 1")
2. Send the message to the T.gsm telephone number
3. The system acknowledge by replying to the number that sent the programming string with a SMS containing one of the following messages:
   - "Wrong Password": the password is not correct
   - "Successful programming": everything is correct
   - "Wrong programming": the password is correct but there is one or more programming errors

Example 1:

*** 1234 # 11 02 * 5 ***

Wgere: "*****" to access to the system, "**1234**" is the password, "**#**" allows to access to the programming mode, "**11**" WRITE code, "**02**" parameter, "*****" start of parameter field "**5**" new value of the parameter, "*****" end of parameter field

When in programming mode the system has a timeout of 60 seconds; at the expiration of the timeout the system plays the message :"Timeout expired" and exit. To reenter it is necessary to start again the programming procedure.

C.3.1) SYSTEM SETTINGS

SYSTEM PARAMETERS					
PARAME-TER	**VALUE**	**De-fault**	**Yr Va-lues**	**FUNCTION**	**NOTE**
00	00	-	-	Reset program-ming	Reset all parameters to the default value (do not erase messa-ges and do not change system data/time) Write only
01	0000 to 9999	1234		Password	0000 = password disa-bled
02	1 to 9	2		Rings	No of rings to answer to an incoming call
03	0 to 6	-	-	GSM Signal	0 = GSM signal weak or absent 6 = GSM signal max Read only
04	000000 to 999999	0000-00		System ID	-
05	01 to 99	02		Communication Timeout	In MINUTES
06	010 to 999	060		Waiting confirm	In SECONDS Waiting time between the start of the selec-tion and the acknowle-dgement (dial key 5)
07	-	-	-	Software Release	Example: 10 means release 1.0 Read only.
08	01 to 13	07		Audio level lau-dspeaker GSM	Audio level from the GSM to the intercom
09	1 to 3	2		Audio level micro-phone GSM	Audio level from the intercom to the GSM
10	YYMMDDhhmm	-	-	System DATA and HOUR setting	YY = Year MM = Mese DD = Day hh = Hour mm = Minute
11	1 or 2	1		How to manage call identification codes	Dialling 4 after recei-ving the system ID (6 digit)the system an-swer with the active alarm code (3 digit) See section "C.3.11"
12	-	-	-	Current supply voltage	In TENTH of VOLT (+/-0,1V) I.E.: 125 = 12,5 Vdc Read only