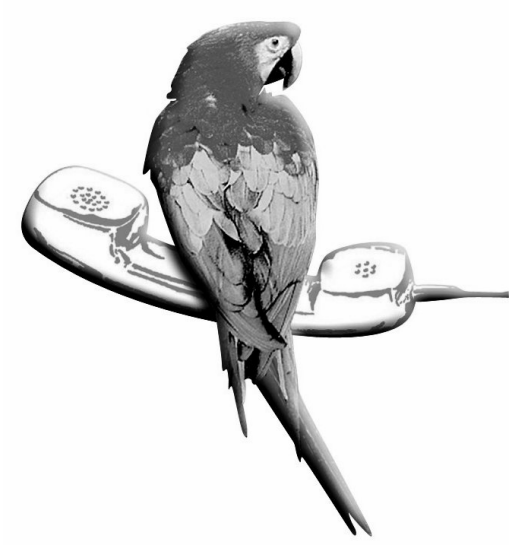

working with love is a bond with customers

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Certified UNI EN ISO 9001:2008 Reg. n° ER/ES-1072/2002

TSA 2

ver. T.tel

Emergency Phone System For Analog Line (POTS)

User Guide

SW 1.4

English Ed. 02 dated 28/07/2011

THANKS TO CHOOSE
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 theTSA 2 in the best way.

TSA 2 is a telealarm system specifically designed to help people eventually locked in a cabin lift by raising an alarm to a service center and allowing emergency two way voice communication.

TSA 2 is compliant to the following rules: Directive 95/16/EC, EN 81-28, EN 81-70, EN81-72, CTR 21; EN 50082, EN 627 EN 50081-1:1991, EN55022, IEC EN139-4/A2: 2003, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-6,EN61000-4 -8.

Main Functionalities of TSA 2:

- Bi-directional (talk/listen)
- Self-diagnostic of the main functionalities
- Volumes adjustment by trimmer
- Real Time Clock with automatic summer/winter time change
- Predefined and user defined alarm and warning messages
- Programmable “End of Alarm” procedure
- Warning message programmable
- Reassurance message to the cabin
- Location message to the service center
- Messages clearly identifying the type of alarm or warning and its origin
- System information messages
- Automatic and on demand Test Call ; timing is programmable
- Low battery alarm; threshold level and test duration progammable
- Programmable alarms to be managed by voice call, or Caller ID (CLI)
- Programmable communication mode with the call center
- 2 programmable Relays for automatic signalling of “alarm sent” and “alarm received” or for remote control functions
- Local and remote programming and check, with the support of an in line voice guidance
- 11 telephone numbers associated with various types of alarm calls

SPECIFICHE TECNICHE

Power supply:	10 to 16 Vdc
Max power consumption @ 12Vcc (RMS):	300 mA
Min power consumption @ 12Vcc (RMS):	30 mA
Max current relay contacts:	3A @ 120Vac or 3A @ 24Vdc
Card size:	108 (L) x 160 (H) mm
Box size:	155 (L) x 184 (H) x 35 (P) mm
Weight:	About 200 g
Operating temperature:	+ 1°C to + 40°C
Storage temperature:	- 20°C to + 40°C
Operating and storage humidity:	20% to 80%

DISPOSAL

The device and teh 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 under conditions of 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.

C.4) ERROR

During the error condition, indicated by the fast flashing of the red LED, an error message is played and can be listened by entering in communication with the TSA 2 from a remote phone.

The errors reported are the following:
- no one of the 5 main alarm number is programmed (parameters 81 to 85)
- the supply voltage is below 10 VDC
- no telephone line is detected: dial up, PBX or GSM gateways. The detection of the line is a programmable function.

In the error condition, except in case of no line, the system can be accessed remotely to perform programming and diagnostic.

D) TROUBLESHOOTING

PROBLEM	POSSIBILE REASON	POSSIBILE SOLUTION
The system sometimes doesn't answer and/ or frequently reset itself	Close strong electromagnetic pulse caused by power equipment that disturbs the TSA 2.	For proper operation it is advisable to install the TSA 2 at least 2 meters from any source of electromagnetic disturbances: switchgear, motors,power relays, inverters, etc.. and use for links, new cables and dedicated.
The system is active but does not handle the alarms. The red LED flashes quickly (like the green led).	The system is in ER-ROR.	See section C.4
Difficulty to properly receive DTMF from remote.	Disturbed or low audio signal	Enter the DTMF tones when system messages are not playing and wait at least one second between each digit. Call the TSA 2 from a room with low environmental noise. Check for proper power supply. If the TSA 2 is connected to a GSM gateway and not to an analog line, check that the GSM signal is of good strength or move the GSM device in a location that guarantees a good signal, chack that the antenna and the GSM device are at least 1 meter away from the TSA 2.
By opening the hands-free communication between the cabin and the inter-com handset you hear a "whistle".	Handsfree volume too loud	Lower the volume of the speaker and adjust optimal TSA 2 levels (TR1 and TR2).
The recording quality of the custom messa-ges is not good (you can hear a buzz).	Power supply not suitable or noise from the telephone line .	Use a linear power supply and not a switching one. If you are using a GSM gateway, chack that the TSA 2 is at least 1 meter from the antenna and GSM device.

INDEX

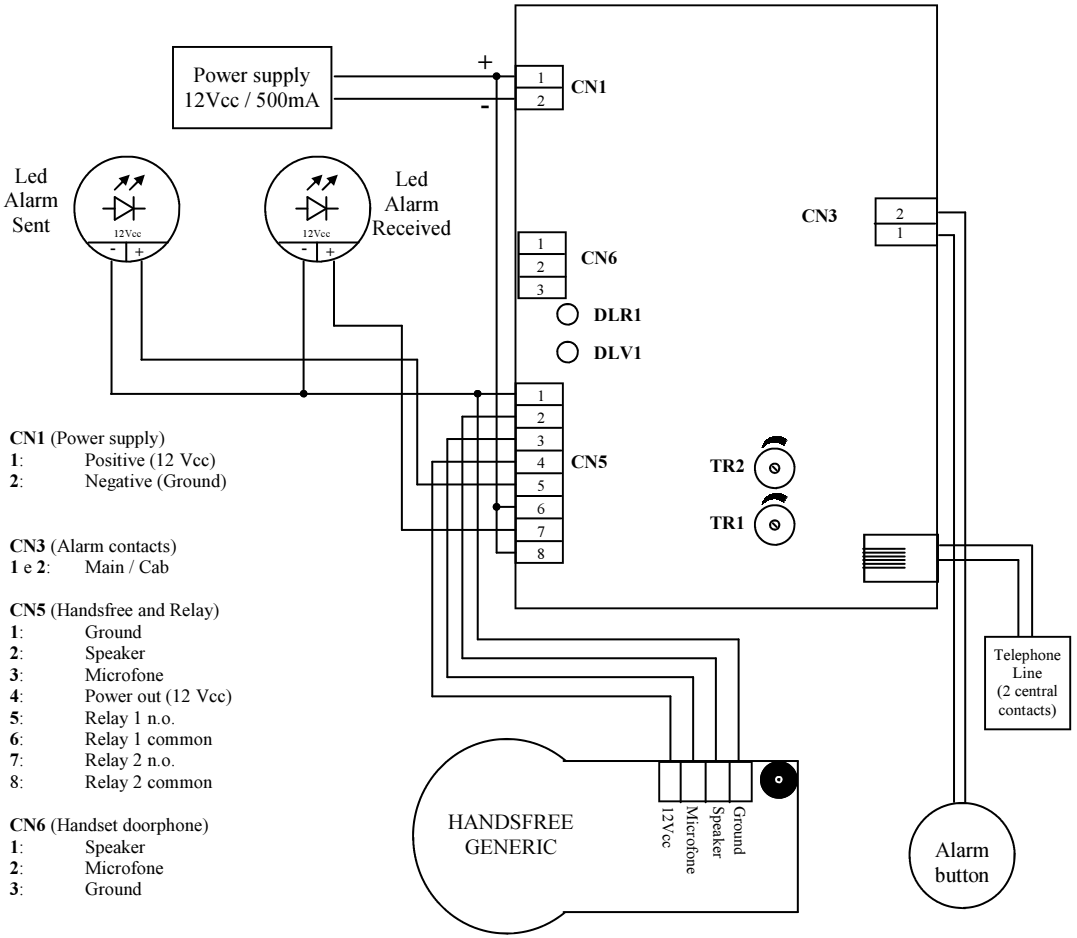
QUICK START

To quickly install the TSA 2 and use its services please read and follows these basic steps:

1. Open the plastic enclosure
2. Connect the telephone line to the plug CN_TEL1 (two central contacts)
3. Connect the handset of the telephone (CN6 1-3)
4. Connect the alarm call button (CN3 1-2)
5. Connect the elevator cab speakerphone (CN5-1 to CN5-4 contacts)
6. Feed the power supply to TSA2, 12Vcc/500mA (CN1 1-2), matching the polarity.
7. Configure the TSA 2 from a local touch tone phone by programming at least one emergency number (parameter "81" on page 12, or parameter 99 on page 16)
8. Hang up the phone and wait for the red LED stop flashing. If the red LED start fast flashing (like the green LED) pick up the telephone handset and listen to the error message and refer to section C.4.
9. The system is ready to run when the green LED flashes fast and the red LED is off.
10. Break the appropriate notches in the plastic cover to pass the wires through.
11. Close the plastic enclosure

Note: TSA2 must be installed at least 2 meters away from any possible sources of electromagnetic noise. Always use new and specific cables (for the hands-free intercom, for the telephone, to cennect the line).

A) GENERAL WIRING DIAGRAM



CN1 (Power supply)
1: Positive (12 Vcc)
2: Negative (Ground)

CN3 (Alarm contacts)
1 e **2**: Main / Cab

CN5 (Handsfree and Relay)
1: Ground
2: Speaker
3: Microfone
4: Power out (12 Vcc)
5: Relay 1 n.o.
6: Relay 1 common
7: Relay 2 n.o.
8: Relay 2 common

CN6 (Handset doorphone)
1: Speaker
2: Microfone
3: Ground

Sample	
TSA 2	Urmet 824/500
CN5-1	-
CN5-2	1
CN5-3	2
CN5-4	+

DLV1: Green LED "ON"
DLR1: Red LED "LINE"
TR1: Volume from line to cab (CCW- / CW +)
TR2: Volume from cab to line (CCW - / CW +)

C.3.9) CALLER ID (CLI) CALLS

When programmed to send an alarm or alert in CALLER ID (CLI) mode the system performs the following steps:

- call the phone number programmed and, if it is free, after 2 rings (about10 seconds) hangs up, thus allowing to detect the calling number to process your communications are at no cost to the caller;
- if the number is busy, the system retries dialling every 3 minutes until it is free, or for the number of cycles set for the type of alarm.

C.3.10) IDENTIFICATION CODE FOR ALARMS AND SIGNALS

TSA 2 can handle different ways to communicate to a call center the alarm code and the system code. The codes implemented are listed below.

The parameter C11 allows to select the mode to be used (seeSection C.3.1).
Example: to select the mode 2, program 11 11 * 2 *

TYPE OF CALL	CODE DTMF TONE				
	MODE 1	MODE 2	MODE 3 ADEMCO		
			Event	Group	Zone
MAIN ALARM: CABIN	*01	D13	140	00	001
BATTERY ALARM	*07	643	302	00	000
END OF ALARM	*20	523	300	00	000
SELF CHECK	*05	583	602	00	000
INCOMING CALL	*31	*31	000	00	000

Note: if the system is set to communicate with Ademco Caller ID , the location message is not provided to the receiver, but it is still possible to answer in voice mode pressing the key 7 to listen to the "location message" and then enter into conversation with the cab with the key 5 and close the communication with the key 9.

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

When properly programmed, the two relay of the TSA2 system are able to manage the signal of Alarm Received and Alarm Sent that are normally displayed through LED lights or Beeps.

Alarm Sent
When a main alarm procedure is started, the relay 1, if programmed, activates the signal "alarm sent". The signal remains active until the alarm is acknowledged or until the End of Alarm.

Alarm Received
The received alarm signal activate the relay 2, if programmed. Relay 2 remains active starting from the acknowledgement of the alarm call (key 5) to the end of delay time programmed.

C.3.8) TELEPHONE NUMBERS

The TSA 2 can store up to 8 telephone numbers (parameters from 80 to 91); each phone number can be associated to a specific event or alarm. The main alarm select 5 phone numbers in cyclic mode until it receives a confirmation code (type key 5 by an operator) or until the end of the programmed cycles.

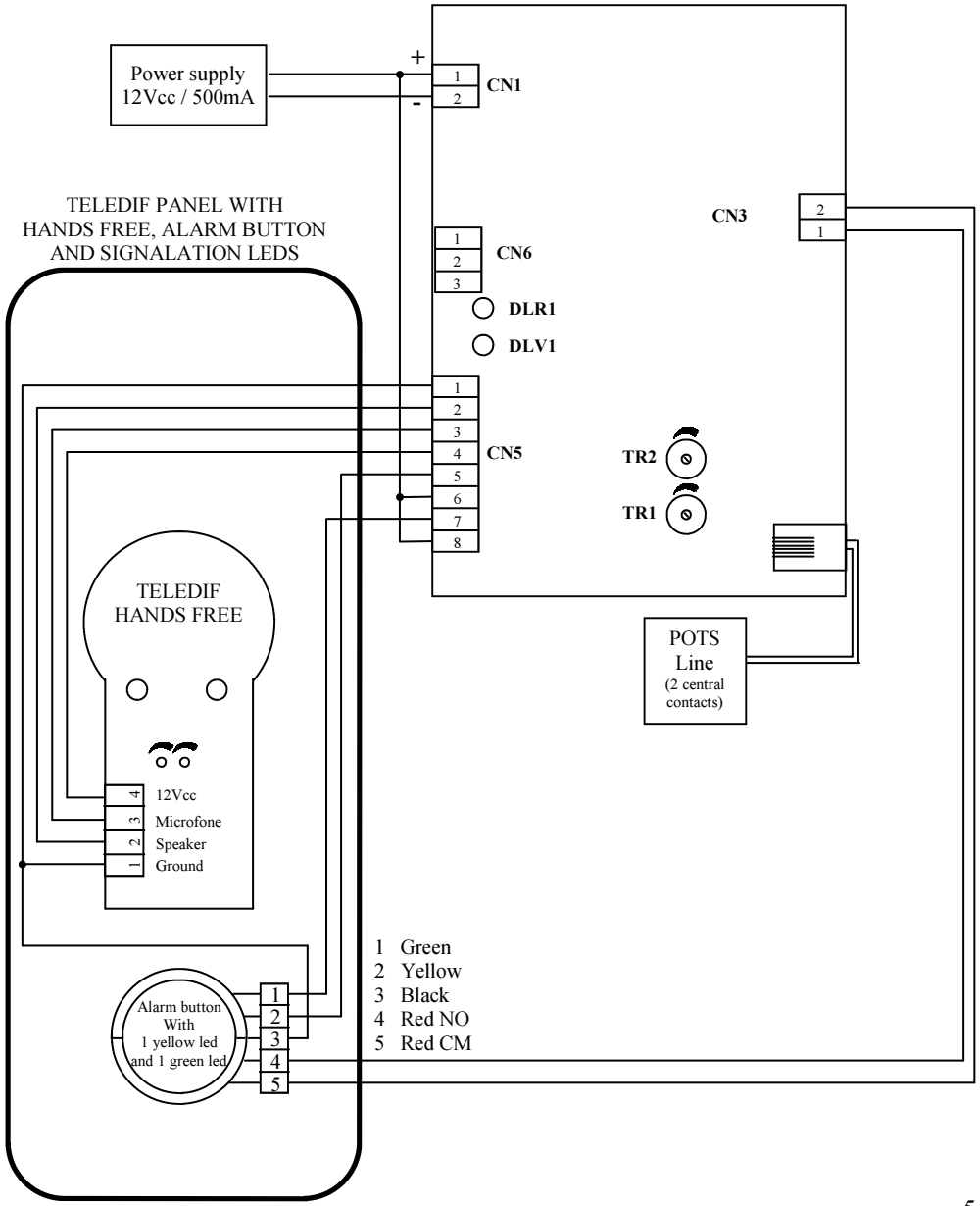
Parameter 99 can be used when all the calls should be forwarded to a single number.

To delete a number from the phone book simply set the parameter empty.

To change a programmed number just overwrite it.

PHONE BOOK			
PAR.	**VAL.**	**FUNCTION**	**YOUR VALUE**
80	Up to 20 digit	End of alarm (*)	
81		First phone Nr. main alarm and maintainers(*)	
82		Second phone Nr. main alarm and maintainers	
83		Third phone Nr. main alarm and maintainers	
84		Fourth phone Nr. main alarm and maintainers	
85		Fifth phone Nr. main alarm and maintainers	
88		Test call (*)	
89		Battery alarm (*)	
99		With this program you can set or delete the phonebook entries marked with an asterisk (*) in a single programming	

B) WIRING DIAGRAM WITH TELEDIF PANEL AND HANDS FREE



OPERATION

TSA2 system has 4 system status:
1. SELF-TEST
2. OPERATING
3. PROGRAMMING
4. ERROR (WARNING)

C.1) SELF-TEST

The condition of self test is displayed by a slow flashing red LED LINE. When switched on, the TSA2 automatically starts the self-test procedure to check the minimum conditions for proper operation, such as:
1. At least one telephone number programmed
2. Supply voltage within the range
3. A telephone line connected

The self-test procedure is performed whenever any of the following conditions happen:
- Switching on of the system
- Hanging up the phone after a telephone number for main alarm has been recorded or erased
- After an automatic or manual system reset

At the end of the self test the red LED off indicates that the system is working correctly, the red LED fast flash indicate an error condition (see section C.4)

Any error is also reported by calling the system from a remote telephone.

C.2) OPERATING

C.2.1) Events and Priorities

The TSA2 handles events and alarm signals in order of priority
1. MAIN ALARM (CAB)
2. BATTERY ALARM
3. END OF ALARM
4. TEST CALL
5. INCOMING CALL

TSA 2 always manage first higher priority events (Event 1 has higher priority than Event 2, etc.). If a higher priority event is generated during an existing event, the TSA2 freeze the procedure in progress to handle the new event and only at his end it resume the event frozen.

C.2.1.1) Intercom Handset

TSA2 can connect multiple receivers in parallel to the intercom system

From the intercom handset it is possible to:
- Initiate the End of Alarm procedure, if programmed
- Talk/listen with the hands free of the cabin
- Listen for any error messages

Picking up the intercom handset opens the audio with the cab for up to 120 seconds. Hanging up and picking up again allows to talk further 120 seconds.

C.3.7) RELAYS

RELAYS					
PARAMETER	VALUE	Default	Yr Values	FUNCTION	NOTES
70	0 to 9	7		Relay 1	**0** = The relay is activated for the duration of the DTMF tone **1 - 4** = Activated 1 to 4 seconds **5** = Latching mode activation: each pression of key 1 change the state of the relay (open/closed) **6 - 9** used to to report “Alarm sent”: **6** = Always active until the completion of “End of Alarm” **7** = Always active until call acknowledgement by key “5” **8** = Flashing until completion of “End of Alarm” **9** = Flashing until call acknowledgement by key “5”
71	0 to 6	6		Relay 2	**0** = The relay is activated for the duration of the DTMF tone **1 - 4** = Activated 1 to 4 seconds **5** = Latching mode activation: each pression of key 1 change the state of the relay (open/closed) **6** = it is used to report a "received alert"; always activated for the programmed duration (parameter 72) starting from the acknowledgement of the ‘main alarm’ call (key “5”)
72	001 to 999	010		Activation time of the relay 2 if parameter 71=6	In Seconds

Note: When reading the value of the parameter is always also provided the state of the relay (On or Off)

C.3.4) TEST CALL

The system as required by rules, make the periodic test (72 hours)

TELEDIAGNOSI					
PARA-METER	VALUE	De-fault	Your Value	FUNCTION	NOTE
88	Max 20 digits	-	-	Telepgone number for "**Test call"**	Yr n°:
40	0 - 9	2		N° loops	0 = Endless
41	01 - 99	03		Time between 2 calls	In days
42	00 - 23	00		Waiting time for the next call	In Hours
43	00 - 59	10		Waiting time for the next call	In Minutes
44	0 / 1	0		Warning mode	0 = Phone call 1 = Caller ID mode (see Section C.3.9)
Fisso		3	-	Time between two failed calls	In Minutes

C.3.5) - BATTERY ALARM

BATTERY ALARM					
PARAMETER	VALUE	Default	Your Value	FUNCTION	NOTE
89	Up to 20 digit	-	-	Telephone Number for **"No Battery Alarm"**	Your phone No:
50	0 to 9	2		No of cycles	0 = Endless
51	100 to 150	110		Threshold Low Voltage	In Tenths of Volts (Tolerance is +/- 0.1V) Example: 105 = 10.5 Vcc
52	00 to 99	01		Interval time to check the intervention thre-shold	In Minutes
53	01 to 99	01		Time interval between two calls acknowledged (by digiting "5") with an active alarm, or between two cycles completed and not acknowledged with an active alarm	In Hours Example: By setting the value to "02" if the Battery Alarm has been confirmed it will be repeated every two hours.
54	0 to 1	0		Ways of alert	0 = Vocal call 1 = Call in CALLER ID (CLI) mode (see section C.3.9)
Fixed	Fixed	3	-	Time between 2 failed calls	In Minutes

- **C.2.1.2) Main Alarm (cabin)**

The cabin alarm call is generated by pressing the alarm button for the length of time programmed. The system, if programmed, provides a pre-warning message and then starts processing the alarm with the announcement of the reassurance message to the cabin.

The called party (call center) receives the identification message of the cabin (if programmed) and, by pressing the 5 key can immediately enter into communication with the cabin. The keyboard of the telephone receiving the alarm can activate all the functions required by using DTMF tones.

The alarm call is considered successful only when the operator acknowledge it by dialling the "5" key and enter into communication with the cabin.

It is possible to program up to 5 different numbers for alarm calls; the system selects them in a loop until it receives a valid response or until completion of the programmed cycle.

At the beginning of each new cycle the system announce a reassurance message in the cabin.

Reports of "Alarm Sent" and "Alarm Received", unless otherwise managed, can be activated automatically by the relay of the TSA2 if properly programmed (see section C.3.7).

C.2.1.3) Maintainer Alarm: pit, roof cabin, engine room

The alarm button can be remoted also in the pit, in the machine room and in the roof; in case of the alarm it is then possible to start intercom communication with both the cabin and the remote center that receives the alarm.

C.2.1.5) Battery Alarm

TSA 2 generates an alarm call when the battery voltage drops below a programmed threshold, for the programmed amount of time.

The battery alarm generate:

- A call to the pre-programmed telephone number reporting the system and alarm identification message
- A call to the pre-programmed telephone number in CALLER ID (CLI) mode (see Section C.3.9 gives)

C.2.1.7) End Alarm

At the end of a Main Alarm the TSA2 system can handle an End of Alarm procedure or a Notification of Alarm acceptance in three different ways

1. **From remote:**
   After an alarm call, call the phone number of the TSA 2 which generated the alarm and dial * <Password> 0, i.e. * 1234 0
2. **From local:**
   Lift and hang up the handset of the intercom.
3. **Automatic:**
   The acceptance of a call (key 5) triggers an automatic notification call to the number programmed

The End of Alarm procedure, if programmed, performs the following functions:

- Turn off the alarm signal, if it is managed by the TSA2 relay
- Start a call to the programmed number in voice mode or Caller ID (CLI).

C.2.1.8) Test Call

The system can perform remote diagnosis as follows:
- On demand:
- Periodically, at any programmable interval (number of days).

A test call is executed as follows:
- Call to a programmed number with the delivery of the identification messages.
- Call to a programmed number in Caller ID (CLI) mode (see Section C.3.9).

To start a call back test:
1. Dial the phone number of the TSA 2
2. When the system answers with the identification message press the asterisk key, then the password followed by 6.
3. Hang up
4. The system initiates an "on request test call" in the programmed mode.

C.2.1.9) Incoming call

TSA2 answer an incoming call after the programmed number of rings, by giving the identification message.
To access to the system, type:
1. Asterisk (*)
2. The system answers with the message "enter password" or "insert code"
3. Type the password or, if not programmed, enter the 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. Enter 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 enter "9" or hang up.

If you do not enter the key * (asterisk) 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 the TSA 2 is connected to a GSM gateway and not to an analog phone line or internal control unit, the detection of DTMF tones could be difficult, especially in the presence of a 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.3.3) MESSAGES

The system provides 2 types of messages:
- System messages: predefined massages that cannot be changed by the user.
- User-recordable messages: 6 messages that can be associated to specific functions.

In order to record good quality messages, the duration of the messages must be estimated in advance and programmed before each recording.

To record a message follow the instruction below:
1. Dial the number of TSA 2 and, at the answer, type * key (asterisk)
2. Digit the password
3. Digit # (pound) to enter programming
4. Digit the code of the message you want to register as follows:
5. 11 30 * 08 * where:
   - 11 write access parameters
   - 30 Code of the message you want to register (for example, "Location")
   - * Start value
   - 08 estimated duration of the message of 8 seconds
   - * End of value
6. The system will acknowledge with the message: "Record after the tone ... ...beep"
7. Speak clearly into the microphone of the handset
8. At the end of the time programmed the system will confirm: "Recorded message"
9. To listen to the recorded message type 12 followed by the code of the recorded message. Example 12 30 play message 30 (Location message).
10. If you are not satisfied with the result, repeat the procedure from step 4.

NOTE: In case the recording is noisy and / or not good quality, make sure the TSA 2 is powered by a battery or a good efficient power supply and the phone used is good quality.
A system reset does not erase the recorded messages.
NOTE: Systems for lift are supplied with pre-recorded alarm messages

PAR.	VALUE	DEFAULT	TYPE OF MESSAGE	NOTE
30	00 or 02 - 20	00 = Parameter not programmed	02 - 20 = **Identityfication message**	Value from 02 to .. = duration of the message in seconds
31	02 - 20	Please keep……..	**Reassurance message in cabin**	
35	02 - 15	Person….	**Main Allarm to the phone line**	

Example of chained messages:

Message	Presentation	Location	Reason	Instruction
Type of message	System (not recordable)	User (recordable)	User (recordable only for main alarm) System (test, battery, end of alarm, ecc)	System (not recordable)
Example 1: Messagge provi-ded	***Plant Number (followed by the ID code autoge-nerated)***	***Elevator located in Reeding, street A, building B***	***Person in the cabin***	***Push 5 to talk to an operator …….***

C.3.2) - MAIN ALARM - END OF ALARM

MAIN ALARM					
Parameter	**Value**	**Default**	**Your Value**	**Function**	**Notes**
81	Max 20 digits	-	-	1° tel **main alarm**	Your n°:
82		-	-	2° tel **main alarm**	Your n°:
83		-	-	3° tel **main alarm**	Your n°:
84		-	-	4° tel **main alarm**	Your n°:
85		-	-	5° tel **main alarm**	Your n°:
20	0-9	2		N° loops of **main alarm calls**	0 = Endless
21	0 or 2-9	2		Minimum time to press the main alarm	In seconds 0 = start immediately without warning message
23	1 / 2	1		Working mode of the contact of the main alarm	1 = NO (Normally Open) 2 = NC (Normally Closed)
24	0 / 1	1		Playng “warning message”	0 = Disabled 1 = Enabled (Irrilevant with par. 21 = 0)
Fixed		5	-	Time between 2 failed calls	In seconds
		30	-	Time between the end of a loop and the next one	
END OF ALARM					
80	Max 20 digits	-	-	Number tel **end of alarm**	Your n°:
25	0 - 9	2		N° loops for **end of alarm** calls	0 = Endless
26	1 - 3	1		How to manage the end of alarm or alert notifications of acceptance	1 = Start end of alarm only with the intercom handset 2 = Start end of alarm with the intercom handset and by remote phone 3 = Automatic end of alarm by acceptance of alarm with key 5
27	0 / 1	0		Ways of alert	0 = Vocal call 1 = Call in CALLER ID (CLI) mode (see section C.3.9)
Fixed		3	-	Time between 2 failed calls	In Minutes

C.2.1.10) Answer to an alarm call generated by the TSA 2

When the operator of the call center answers the call, he receives the identification message followed by the type of alarm and the request to accept it and enable the communications with the cabin. The messages are repeated until the operator answers the call pressing the key "5"

The command “5” activate the voice communication with the cabin and start the programmed timeout; it also can switches on the relay 2 (alarm received) for the programmed time . (Section C.3.7 parameter "72").

When approaching the end of timeout (10 seconds from the end) a short message or beeping tones are played. Pressing any key number regenerates the time out.

While connected it is possible to access to "remote controls" (Section C.2.2) using the relevant codes.

The communication is ended and the TSA 2 returns to the idle state in the following cases:

- when receiving the digit "9"
- when receiving a busy signal from the telephone line
- at the end of "communication timeout"

C.2.2) System access and control codes

You can access the system by calling the TSA 2 from a touch tone phone, at the answer type the asterisk key, the password, and then the control codes.

CONTROL CODES		
Function	**Code**	**TSA 2 Action**
End of alarm	0	Starts the END OF ALARM procedure
Relay 1	1	Control the relay 1 if not programmed otherwise (see Section C.3.7parameter 70)
Relay 2	2	Control the relay 2 if not programmed otherwise (see Section C.3.7parameter 71)
ID request (identity code)	4	Send in line with DTMF tones the ID number programmed in sez. C3.1 param. 04, and the code of type of call (sez. C.3.1 param. 11)
a. Enable conversation b. Confirm and accept the call c. Reload the communication timeout	5	a. Connect audio in the cabin b. Consider the call succesfull c. Reload the conversation time
TEST CALL request	6	Start the auto test call back
Listen to the LOCATION MESSAGE	7	Plays the location message for the call in progress.
a. Close the conversation b. Hang up the call	9	Close the communication
Enter in program mode	#	Wait for the programming or reading code

C.3) PROGRAMMING

TSA 2 allows to read and write parameters into the system with the following syntax:

To write:
WRITE CODE (11) + PARAMETER + ASTERISK (*) + VALUE + ASTERISK (*)
To read:
READ CODE (12) + PARAMETER

PROGRAMMING CODES		
FUNCTION	**CODE**	**TSA 2 ACTIONS**
Enter in program mode	#	Wait write or read code
Exit program mode		Wait control code or hang up
WRITE code	11	Scrive un valore in un parametro
READ code	12	Legge il valore in un parametro

To start programming:
1 From a remote telephone connect to the system (call the TSA 2, and after listening to the message digit an asterisk *)
2 Wait for the prompt for any password
3 Enter the password (PW disabled will be skipped here)
4 Wait for the message “correct password”
5 Enter the character # (pound)
6 Wait for the prompt message
7 Enter the programming code with its parameters according to the syntax described above
- For each correct change the system acknowledges with the message: "correct code"
- For each incorrect programming, not recognized or not possible, the system give the message: "wrong code"

1 To exit programming hang up or type the # (pound)
- The system delivers the message: "program output"

Example:

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

Where "*" allows you to access the system, "1234" is the password, "#" allows access to programming, "11" writing code, "02" parameter concerned, "*" beginning of the value of the "5 " is the new value of the parameter to be changed and " * " is the end of the value of the parameter.

Once entered programming mode it is possible to read or write all the parameters in sequence without having to hang up and / or exit programming.

Example:
* 1234 # 11 02 * 5 * 11 20 * 3 * 11 41 * 01 * ... and so on ...

When in programming mode the system has a timeout of 60 seconds; after this time it delivers the message: "Timeout expired" and exits the programming mode. Repeat the programming procedure to re-enter programming mode.

C.3.1) SYSTEM SETTINGS

SYSTEM PARAMETERS					
PARAMETER	**VALUE**	**Default**	**YOUR Values**	**FUNCTION**	**NOTES**
00	00	-	-	Reset program settings	Reset all parameters to default values (don’t delete messages)
01	0000 - 9999	1234		Password	0000 = password disabled
02	1 - 9	1		Rings	N° of rings to answer to incaming calls
04	000000 - 999999	000000		Identity code of the system installed	-
05	01 - 99	02		Timeout of communication	In Minutes. Time of the communication between handsfree and called phone.
06	010 - 999	060		Awaiting confirmation	In Seconds. Time waiting between starting of dialing and confirmation digit(5)
07	-	-	-	Software version	Example: 10 is software version 1.0
11	1 - 3	1		How to manage codes identifyng the type of call	1 = DTMF 1 mode TELEDIF 2 = DTMF 2 mode 3 = ADEMCO C.ID see section “C.3.11”
12	-	-	-	Voltage supply	in tenths of VOLT (+/- 0,1V) Example: 125 = 12,5 Vcc
13 (*)	1 - 9	5		Amplitude DTMF tone	1 = Amplitude min 9 = Amplitude max
14 (*)	0 - 9	2 (100ms)		DurationDTMF tone	Step by 20msec: 0 = 60msec 9 = 240msec
15 (*)	0 - 9			Pausa intercifra toni DTMF	
16	1 - 9	2		Time waiting before dialing.	In Seconds
17 (*)	0 - 4	2		Amplitude of the differential frequency of the DTMF tone	in dB
18	1 - 9	5		Sensitivity of recognition of busy tone	1 = Max sensibility: faster in recognizing the busy tone
19	0 or 1	1		Controllo presenza linea telefonica prima di comporre il numero telefonico	0 = No 1 = Si
28	05 - 90	10		Input ring duration setting	In tenths of msec. 10 = 100 msec.

*: You should change the parameter marked only by indications of the Teledif Techincian.