

## Phone dialer



### TFCOM



PSTN phone dialer, approved for use in combination with TFA fire detection systems. Integrated PSTN phone carrier. Optional phone carriers: GSM-GPRS. 8 communicators/channels for phone notification of events, 1 CALL BACK communicator/channel dedicated to the connection with the management centre. 33 categories of transmissible events. 5 types of transmissible zone events. 2 phone numbers or IP addresses for each communicator. 29 communication protocols functional to phone notification carriers. Transmission formats: Voice, SMS, Ring, DTMF, Data. Security: encrypted communication, supported encryptions AES 128 Bit and AES 256 Bit, independent passphrase setting for each communicator. Automatic diagnostic functions: communications carriers, power supply, battery, serial communication. Front panel with 6 LED signalling operating states. Fault output. Full RSC® management of the device: setup, remote management and control of all functional parameters. Built-in flash memory for vocabulary customization, manageable from a personal computer as an external disk. USB interface. RS485 bus connection. Addressable device. Metallic enclosure. Class of protection IP30. Battery housing: 1 12V-7Ah. Dimensions (L x H x P) 315 x 255 x 82mm. Black.

**EN 54-21:** 2006. Homologation certificate 0051-CPR-0454.

Item no. TF2TFCOM

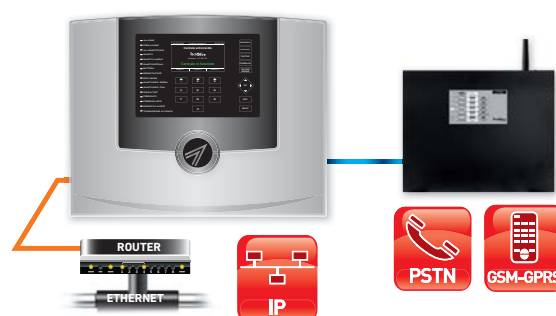
### OBLIGATIONS AND NOTICES

The TFCOM phone dialer can be used only if connected to an expansion serial bus of the Tecnofire control units models: TFA1-298, TFA2-596 and TFA4-1192. During design and installation, it is necessary to observe and apply the applicable regulations.

### OVERVIEW

The TFCOM phone dialer allows to expand the transmission carriers and the phone notification communication methods of the following Systems: TFA1-298, TFA2-596 and TFA4-1192. The phone dialer belongs to the category "Expansion devices". The Systems TFA2-596 and TFA4-1192 can manage up to 16 expansion devices, the System TFA1-298 can manage up to 5 expansion devices. The telephone dialer can be connected according to the control unit used and to the System topology to the Master or Slave Bus, in open loop or closed loop mode. The System Buses are supervised, the control unit is able to detect and report a connection line break, with closed-loop configuration the control unit still maintains the normal operation of the network. The Tecnofire Systems can manage multiple TFCOM dialers.

### TFA2-596 and TFA4-1192 systems communications carriers



### TFA1-298 System communications carriers



## Phone dialer

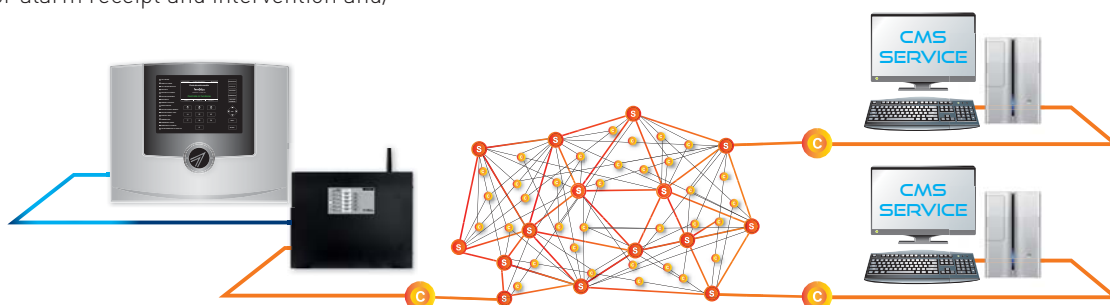
### REGULATED BY UNI9795: 2013

Important Notice Here are the literal contents of the requirements of the applicable standard UNI 9795: 2013, paragraph 5.5.3.2.

When the control unit is not under constant monitoring by the personnel involved, there must be a system through which fire and fault alarms and out of service notifications shall be transferred to one or multiple alarm units for alarm receipt and intervention and/

or manned places, from which the employees can implement at any time and in a timely manner the necessary measures.

The connection with the above units must be constantly monitored, so the devices used must comply with EN 54-21.



### CONNECTION TO THE SERIAL LINE

The connection line is balanced, the balance must be set by dip switches or jumpers only on the last device connected.

To connect the devices it is mandatory to use multipolar shielded cable with flexible wires. The signal connection wires A and B must be twisted.

The maximum length allowed for Bus lines of the system is 1000mt. You can achieve greater distances using an optical fiber connection instead of an electric cable.

For reasons of electrical safety and to improve the immunity to interferences, the shielding of the cables must be connected so as not to break their path and must be connected to the ground terminal only inside the fire detection control unit.

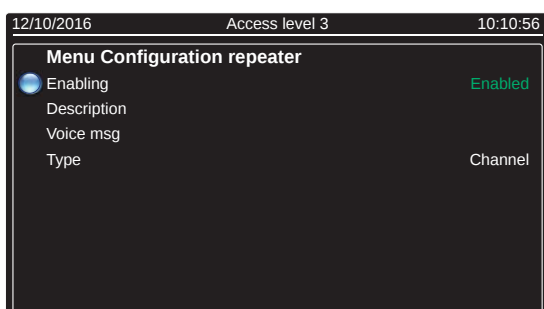
### Bus extension / cable specifications

| Max. extension 1000 m | Minimum section         | Electrical resistance |
|-----------------------|-------------------------|-----------------------|
| Power supply wires    | 2 x 1.5 mm <sup>2</sup> | <13,3 Ohm x Km        |
| Signal wires          | 2 x 1 mm <sup>2</sup>   | <19,5 Ohm x Km        |

### ADDRESSING AND IDENTIFICATION

The serial identification physical address of the TFCOM phone dialer is set via the SW2 Dip-switch located inside the cabinet, on the motherboard where the cables are connected.

The TFCOM dialer is an expansion device, the numeric range of the addresses allowed for the expansion devices is address 1 to 16. Please note that setting address 0 disables the dialer. The address set on the dialer must be enabled from the relevant "Repeaters Setup" menu of the control unit. Access to the menu is allowed only to users provided with Level 3 password.



| Repeaters Setup |                                        |
|-----------------|----------------------------------------|
| Enabling        | Enabled or Disabled                    |
| Description     | Menu to enter alphanumeric description |
| Voice msg       | Menu to select the voice message       |
| Type            | Selection of the type of Repeater      |

| Selection of the type of Repeater |                                 |
|-----------------------------------|---------------------------------|
| Dialer                            | TFCOM Dialer                    |
| Repeater                          | TFT-7 repeater panel            |
| Dashboard                         | TFT-7S dashboard repeater panel |

| Repeater phrase menu |                                                                                |
|----------------------|--------------------------------------------------------------------------------|
| Word                 | Selection of 4 words that make up the voice message that identifies the device |
| Word                 |                                                                                |
| Word                 |                                                                                |

### Repeater title menu

| Enables or disables the Repeater |                          |
|----------------------------------|--------------------------|
| Enabled                          | The Repeater is enabled  |
| Disabled                         | The Repeater is disabled |

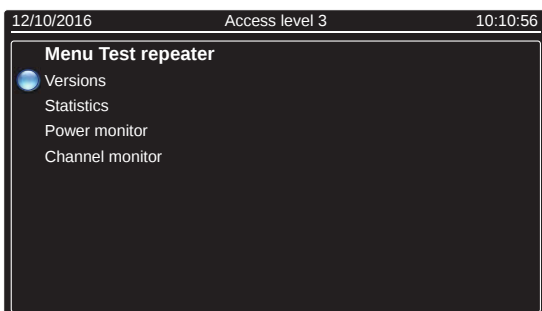
## Phone dialer

### DIAGNOSTIC FUNCTIONS

The control unit manages a set of specific diagnostic functions for the expansion devices.

The diagnostic functions that are available for the phone dialer allow to:

- Identify the equipment and versions of the resources.
- Read the statistics from the communication monitor
- Monitor the value of the power voltage.



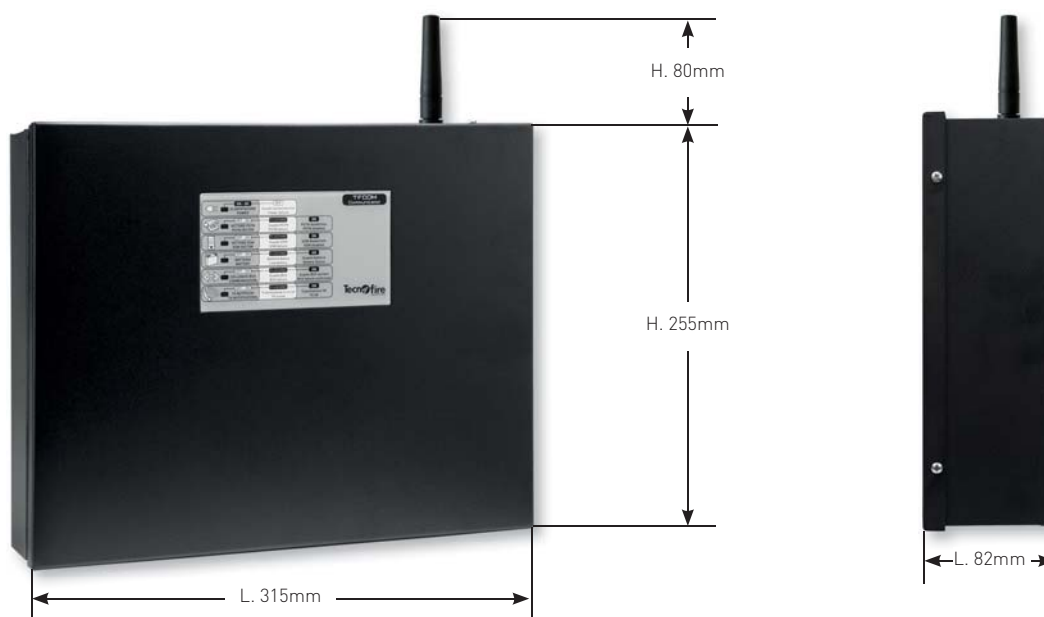
| Repeater test          |                                  |
|------------------------|----------------------------------|
| <b>Versions</b>        | Resource equipment and version   |
| <b>Statistics</b>      | Communication monitor statistics |
| <b>Power monitor</b>   | Power supply sources monitor     |
| <b>Channel monitor</b> | Functional monitor of the dialer |

| Dialer Monitor    |                                          |
|-------------------|------------------------------------------|
| <b>PSTN</b>       | Device status (Enabled-Disabled)         |
| <b>GSM</b>        | Device status (Enabled-Disabled)         |
| <b>GSM Status</b> | Registration to the mobile phone network |
| <b>Operator</b>   | Displays the phone carrier ID            |
| <b>Field</b>      | Displays the GSM signal level            |
| <b>Firmware</b>   | Device firmware version                  |

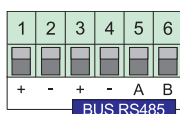
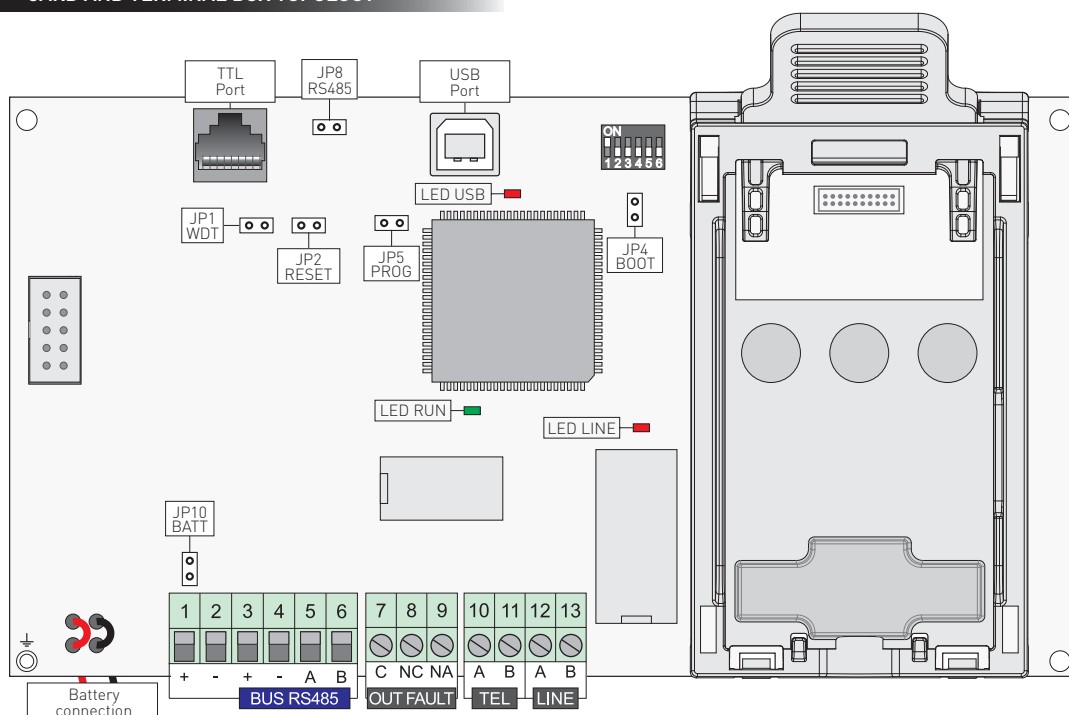
| Power supply monitor   |                                   |
|------------------------|-----------------------------------|
| <b>Supply voltage</b>  | Detects the external power supply |
| <b>Battery voltage</b> | Detects the battery supply        |

| Statistics          |                              |
|---------------------|------------------------------|
| <b>Frames sent</b>  | Communication frames counter |
| <b>Errors</b>       | Faulty frames counter        |
| <b>Success Rate</b> | Percent value                |
| <b>Error rate</b>   | Percent value                |

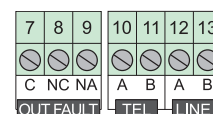
| Versions             |                             |
|----------------------|-----------------------------|
| <b>Firmware</b>      | Device firmware version     |
| <b>Writings</b>      | Set of writings used        |
| <b>Dictionary</b>    | Dictionary version          |
| <b>Serial number</b> | Serial number of the device |
| <b>Licences</b>      | Enabling string             |



### CARD AND TERMINAL BOX TOPOLOGY



| Pin | Symbol | Description             | Function               | Voltage |
|-----|--------|-------------------------|------------------------|---------|
| 1   | +      | Supply positive         | Supply input           | 24V DC  |
| 2   | -      | Supply negative         |                        |         |
| 3   | +      | Supply positive         | Supply output          | 24V DC  |
| 4   | -      | Supply negative         |                        |         |
| 5   | A      | Communication channel A | Communication channels | Data    |
| 6   | B      | Communication channel B |                        |         |



| Pin | Symbol | Description              | Function                                                                                  |
|-----|--------|--------------------------|-------------------------------------------------------------------------------------------|
| 7   | C      | Common contact           | Fault output<br>Relay (free contact)<br>Protected contacts (PTC I <sub>max</sub> , 0.75A) |
| 8   | NC     | Normally closed contact  |                                                                                           |
| 9   | NO     | Normally open contact    |                                                                                           |
| 10  | A      | Phone output (A)         | V DC phone line                                                                           |
| 11  | B      | Phone output (B)         |                                                                                           |
| 12  | A      | Telephone line input (A) |                                                                                           |
| 13  | B      | Telephone line input (B) |                                                                                           |

#### NOTICE - Limitations of use of the outputs

The FAULT output (terminals 7, 8, 9) is not supervised (type J according to EN 54-1 nomenclature) and therefore, in accordance with EN 54-2, should not be used to control devices for the transmission of fault notifications

#### NOTICE - Device power supply

The serial line power supply consists of two pairs of power supply terminals, in accordance with EN 54-21 (terminals 1-2 and 3-4).

| Identification | Operating state | Jumpers function                                                                                                                                                                                                   | Supervision                                                                |
|----------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| JP1 - WDT      | ● ● Open        | Watchdog reset disable                                                                                                                                                                                             | Supervised operation state. In normal operation, the jumpers must be open. |
| JP2 - RESET    | ● ● Open        | Hardware reset                                                                                                                                                                                                     |                                                                            |
| JP4 - BOOT     | ● ● Open        | Used to upgrade the product firmware via the USB port and during DEBUG                                                                                                                                             |                                                                            |
| JP5 - PROG     | ● ● Open        | Used to update the firmware of the product via the serial port                                                                                                                                                     |                                                                            |
| JP8 - RS485    | ● ● Open        | With the jumper open, the Bus is not terminated. Open the jumper when the communicator is not the last device connected on the Bus. Condition valid for both wiring configurations of the line Bus: open or closed |                                                                            |
|                | ■ Closed        | With the jumper closed, the Bus is terminated. Close the jumper when the communicator is the last device connected on the Bus. Of course only if the connection Bus is in open line configuration.                 |                                                                            |
| JP10 - BATT    | ● ● Open        | With the jumper open, the battery is automatically released due to low battery voltage for V <sub>bat</sub> < 8.9V DC. The polarity reversal safety is enabled.                                                    |                                                                            |
|                | ■ Closed        | With the jumper closed, the battery automatic release function is disabled. The polarity reversal safety is disabled.                                                                                              |                                                                            |

| Identification | Colour | Function                                                                                  |
|----------------|--------|-------------------------------------------------------------------------------------------|
| RUN LED        | Green  | LED monitoring the functional state of the communicator. Flashing: normal operation state |
| LINE LED       | Red    | LED signalling the use of the PSTN phone line by the communicator                         |
| USB LED        | Red    | LED monitoring the activities of the USB port; flashes to indicate data exchange          |

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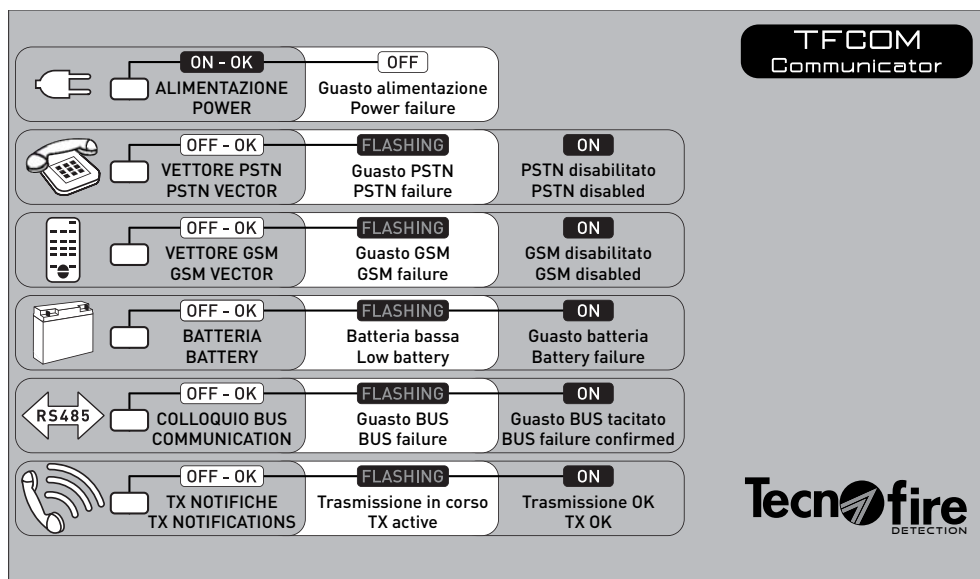
### LOCAL REPORTS

The LED on the front panel display locally the operating states of the phone dialer.

The information displayed are also transmitted at system level to the control unit.

The phone dialer functionally tests its components in a continuous manner or at preset times.

Under conditions of normal operation, that is: no transmission of notifications and total absence of faults and deactivations, only the green LED "POWER SUPPLY" is on.



| Notification                         | Colour        | Type of notification                                                                                            | Notification modes    |                                                  |
|--------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------|
| <b>ALIMENTAZIONE POWER</b>           | <b>Green</b>  | Reports the power supply status of the device                                                                   | <b>Off</b>            | Power supply off                                 |
|                                      |               |                                                                                                                 | <b>On</b>             | Power supply on                                  |
| <b>VETTORE PSTN PSTN VECTOR</b>      | <b>Yellow</b> | Reports the status of the PSTN section                                                                          | <b>Off</b>            | PSTN Dialer OK                                   |
|                                      |               |                                                                                                                 | <b>Flashing</b>       | PSTN Dialer KO                                   |
|                                      |               |                                                                                                                 | <b>On</b>             | PSTN dialer not enabled                          |
| <b>VETTORE GSM GSM VECTOR</b>        | <b>Yellow</b> | Reports the status of the GSM section                                                                           | <b>Off</b>            | GSM Dialer OK                                    |
|                                      |               |                                                                                                                 | <b>Flashing</b>       | GSM Dialer KO                                    |
|                                      |               |                                                                                                                 | <b>On</b>             | GSM dialer not enabled                           |
| <b>BATTERIA BATTERY</b>              | <b>Yellow</b> | Reports the status of the buffer battery: battery low or defective/missing                                      | <b>Off</b>            | Battery charged and operating                    |
|                                      |               |                                                                                                                 | <b>Flashing</b>       | Low battery (drained)                            |
|                                      |               |                                                                                                                 | <b>On</b>             | Battery fault or missing battery                 |
| <b>COLLOQUIO BUS COMMUNICATION</b>   | <b>Yellow</b> | Indicates the state of the connections between the devices connected on BUS485 (control units and/or repeaters) | <b>Off</b>            | Communication with devices on BUS485 OK          |
|                                      |               |                                                                                                                 | <b>Flashing</b>       | Communication fault on BUS485 (not acknowledged) |
|                                      |               |                                                                                                                 | <b>On</b>             | Communication fault on BUS485 (acknowledged)     |
| <b>TX NOTIFICHE TX NOTIFICATIONS</b> | <b>Red</b>    | Reports the transmission states of phone notifications to remote receiving devices.                             | <b>Off</b>            | No phone notification transmitted                |
|                                      |               |                                                                                                                 | <b>Quick flashing</b> | Telephone notification transmission in progress  |
|                                      |               |                                                                                                                 | <b>On</b>             | Telephone notification transmitted successfully  |

Note: Battery LED - the notification remains visible until the alarms are reset, only if automatic acknowledgement of faults is turned off.

## Phone dialer

### CENTRO SOFTWARE

The dialler can be set using a PC running the configuration software "Centro"

The table lists the programming menus of TFCOM with a brief functional description.

|  | Menu              | Description                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                   | Phone dialer      | Setting of the eight notification phone communicators and of the Call back communicator. For each communicator it is possible to set a primary and a secondary phone number, a communication protocol and an identification code. |
|                                                                                   | Report codes      | The associations between report codes and phone communicators is free. Each event can be associated with one or more communicators.                                                                                               |
|                                                                                   | Zone report codes | The associations between zone report codes and phone communicators is free. Each System zone can be associated with one or more communicators.                                                                                    |
|                                                                                   | Timers            | Timer settings that determine communicators activation delay (only for fire alarm events) and the delay in reporting no power supply from RS485 bus line.                                                                         |
|                                                                                   | Security          | Setting of the Passphrases used by the communicators for communication encryption.<br>Please note: the use of the Passphrase should be agreed with the recipients of the communication.                                           |
|                                                                                   | Options           | Setting of the automatic acknowledgement of system faults, of the global muting of the phone cycle, of the initial voice message, of the redirection to GPRS and of the redirection to IP.                                        |
|                                                                                   | PSTN              | Setting of functional parameters of the PSTN phone carrier, enabling of the responder function, selection modes, line testing, enabling to control of answer and control unit phone tones.                                        |
|                                                                                   | GSM               | Enabling of GSM telephone carrier, enabling of the responder function, setting of the number of rings on answer, entry of SMS header.                                                                                             |
|                                                                                   | GPRS              | Enabling of the GPRS communication carrier and setting of network access parameters.                                                                                                                                              |
|                                                                                   | SMS - Credit      | Setting of phone credit request mode for prepaid SIM Cards.                                                                                                                                                                       |

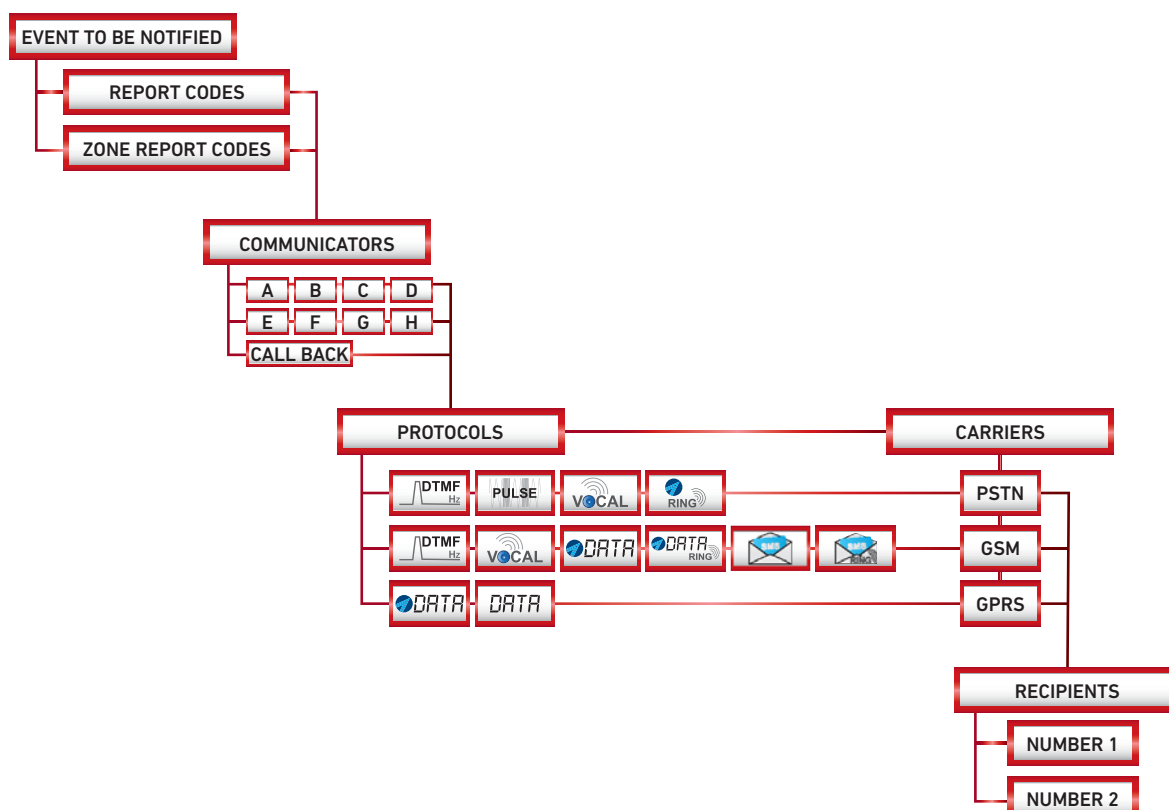
### OPERATING LOGIC

The operating logic of the TFCOM phone dialer can be summarized as follows: System functional events are notified by the communicators, with the communication modes and the carrier defined by the protocol. In detail, settings define the function and the communication mode of the eight phone communicators. The settings associate to the communicators the events to be notified and the

communication protocol to be used, the protocol in turn defines the transmission means, that is the communication carrier.

The last setting necessary to forward notifications is the target phone number or IP address of phone notifications.

The logical interaction of the elements described is schematically shown in the following block diagram.



## Phone dialer

### OPERATING PARAMETERS

The eight communicators operate independently according to the operating parameters set:

#### Phone numbers

Phone numbers no. 1 and no. 2 are the recipients of event notifications (for GPRS protocols in place of the number you can set the IP address). The first number is the primary recipient, the second number is called only if the communication to the first recipient fails.

For the syntax of the IP addresses you can use two modes, address only or address and communications port:

IP address - The IP address consists of 4 numeric fields, interspersed by a character, dot or dash, in this case the dialer uses the port set for the TECNOSERVER TECNOALARM Client channel.

IP address and communication port - In this case a 5<sup>th</sup> numeric field that defines the port is appended to the 4 numeric fields of the IP address. The 5 fields must be separated by the dot or dash character.

#### ID (identification)

Numeric code (max. 6 digits), with which the recipient (alarm reception centre) identifies the origin of the notification.

If the ID is not set, the communicator sends the identification of the control unit.

#### Protocol

Communication mode of the notification.

The communication protocol can be either audible or digital.

The use of digital protocols should be agreed with the receiving reception center.

See table of available protocols.

### PHONE COMMUNICATORS

To send alarm notifications, the dialer uses the PSTN phone carrier and, if available, the optional TFESP GSM-GPRS module, provided with GSM and GPRS communications carriers.

The dialer manages 8 independent phone communicators, identified with the characters A through H.

The forwarding priority of the alarm notifications sent by the communicators are managed by the System according to a priority criterion, based on the alphabetic identification of the communicator (communicator A has the highest priority, communicator H has the lowest priority).

Therefore, it is necessary that the most important notifications are associated with the priority communicators, privileged in issuing notifications in the following order:

A, B, C, D, E, F, G and H (where H has the lowest priority).

The communicators are logical units that deal with managing communication in the following manner:

Dialling the phone number of the addressee of the notification.

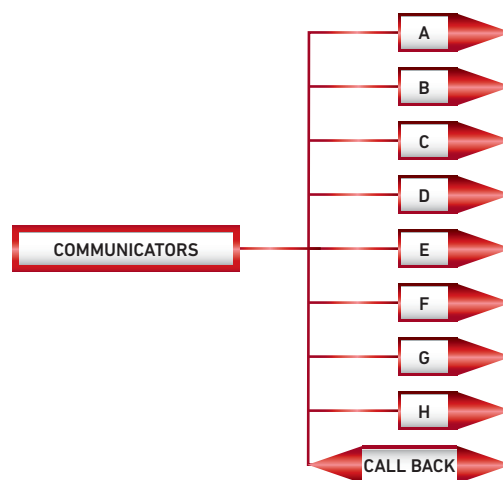
Carrying out the communication, and if necessary repeat the attempt according to the rules dictated by the notification cycle.

Recording in the Event log the outcome of the communication.

Managing the dialer signalling LED

"TX NOTIFICATIONS".

Reporting any faults related to its functioning and to the success of the phone notification cycle.



### EVENT QUEUE

When an event occurs, the dialer checks whether the event is associated with a communicator. If the event is associated it becomes an item of the "Event Queue".

The Event Queue can hold up to 64 items.

The Event Queue is processed according to the following rules:  
Communicator - Order of priority of communicators from A (highest priority) to H (lowest priority).

Forwarding Priority - Order of priority of communicable event categories: 1 High Priority, 2 Medium Priority, 3 Low priority.

History - Chronological order, in case of equal priority the oldest event is processed.

When an event with a higher priority than the queue under management occurs, the current call is aborted to manage the priority event, the aborted call is queued and will be handled as soon as possible.

The communicator sends within the same communication session all the events of the queue associated with it.

### COMMUNICATION PROTOCOLS AND CARRIERS

The protocol is the way in which the phone notification is communicated. Each protocol contains its own operating rules, concerning how the message is notified (how do I communicate it?) and the means of communication, that is the carrier with which the message is forwarded to the recipient (what do I use to communicate it?). The selection of a communication protocol must be made as a function of the communication carrier that you want to use (I communicate it with!), and of the recipient to whom you want to send the message (how I communicate it!). The communication carriers are the transmission means through which the notifications are sent to the

recipient in the mode defined by the protocol.

The communication carriers of the TFCOM dialer are:

PSTN - public switched telephone line, basic provision.

GSM/GPRS - Phone module TFESP GSM-GPRS, optional expansion.

The "Carrier Protocols" tables list the available communication protocols sorted by carrier. For each protocol the following information is provided: the numerical identification code, the name, the description, the transmission mode, the Encryption used and the Timestamp when available and whether the protocol operates in Backup mode.

| PSTN carrier protocols                                                              |               |             |                            |         |            |           |
|-------------------------------------------------------------------------------------|---------------|-------------|----------------------------|---------|------------|-----------|
| Carrier                                                                             | Number / Name |             | Description                | Mode    | Encryption | Timestamp |
|  | 000           | Tecno       | Tecnoalarm                 | DTMF Hz |            |           |
|                                                                                     | 001           | Vocal       | Voice message              | VOCAL   |            |           |
|                                                                                     | 008           | Tecno RING  | Tecnoalarm Tecno ring      | RING    |            |           |
|                                                                                     | 009           | Voc.CF      | Voice message w.conf.      | VOCAL   |            |           |
|                                                                                     | 114           | SIA 1       | fsk sia 1                  | PULSE   |            |           |
|                                                                                     | 122           | SIA 2       | fsk sia 2                  | PULSE   |            |           |
|                                                                                     | 131           | DTMF C.ID s | Ademco Contact ID (single) | DTMF Hz |            |           |
|                                                                                     | 139           | DTMF C.ID   | Ademco Contact ID          | DTMF Hz |            |           |
|                                                                                     | 196           | Vocal       | Voice message              | VOCAL   |            | GSM (193) |
|                                                                                     | 200           | Tecno       | Tecnoalarm                 | DTMF Hz |            | GSM (160) |
|                                                                                     | 204           | Vocal CF    | Voice message w.conf       | VOCAL   |            | GSM (201) |
|                                                                                     | 209           | DTMF CID    | Ademco Contact ID          | DTMF Hz |            | GSM (208) |
|                                                                                     | 212           | DTMF CID    | Ademco Contact ID France   | DTMF Hz |            | GSM (211) |

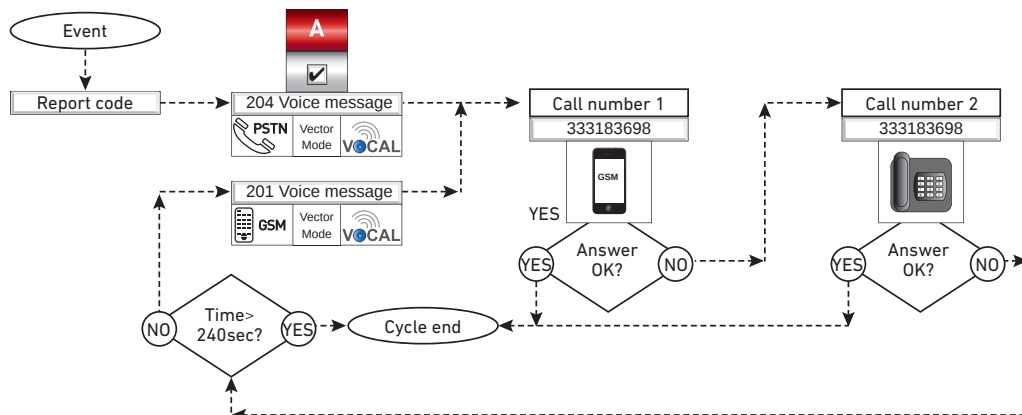
| GSM carrier protocols table                                                         |               |                |                          |           |            |           |
|-------------------------------------------------------------------------------------|---------------|----------------|--------------------------|-----------|------------|-----------|
| Carrier                                                                             | Number / Name |                | Description              | Mode      | Encryption | Timestamp |
|  | 166           | SMS            | SMS                      | SMS       |            |           |
|                                                                                     | 167           | SMS RING       | SMS whit ring            | SMS RING  |            |           |
|                                                                                     | 175           | Tecno GSM-DATA | Tecnoalarm GSM-DATA      | DATA      |            |           |
|                                                                                     | 183           | SMS Credit     | SMS whit airtime request | SMS       |            |           |
|                                                                                     | 190           | Tecno RING GSM | Tecno GSM DATA Ring      | DATA RING |            |           |
|                                                                                     | 193           | Vocal          | Voice message            | VOCAL     |            |           |
|                                                                                     | 201           | Vocal CF       | Voice message w.conf     | VOCAL     |            |           |
|                                                                                     | 208           | DTMF CID       | Ademco Contact ID        | DTMF Hz   |            |           |
|                                                                                     | 211           | DTMF CID       | Ademco Contact ID France | DTMF Hz   |            |           |

| GPRS carrier protocols                                                              |               |                 |                                  |      |                     |           |
|-------------------------------------------------------------------------------------|---------------|-----------------|----------------------------------|------|---------------------|-----------|
| Carrier                                                                             | Number / Name |                 | Description                      | Mode | Encryption          | Timestamp |
|  | 115           | SIA-GPRS-T      | SIA-GPRS-T Reporting [TCP-2007]  | DATA |                     | ✓         |
|                                                                                     | 116           | C.ID-GPRS-T     | C.ID-GPRS-T Reporting [TCP-2007] | DATA |                     | ✓         |
|                                                                                     | 117           | SIA-GPRS128b    | SIA-GPRS Encrypt 128 [TCP-2007]  | DATA | AES 128 BIT ENCRYPT |           |
|                                                                                     | 118           | C.ID-GPRS 128b  | C.ID-GPRS Encrypt 128 [TCP-2007] | DATA | AES 128 BIT ENCRYPT |           |
|                                                                                     | 156           | SIA-GPRS 256b   | SIA-GPRS Encrypt 256             | DATA | AES 256 BIT ENCRYPT |           |
|                                                                                     | 157           | C.ID-GPRS 256b  | C.ID-GPRS Encrypt 256            | DATA | AES 256 BIT ENCRYPT |           |
|                                                                                     | 182           | Tecno GPRS-DATA | Tecnoalarm GPRS-DATA             | DATA | AES 128 BIT ENCRYPT |           |

## Phone dialer

### BACKUP PROTOCOLS

A Backup Protocol normally carries out its phone cycle using the PSTN carrier. If for any reason the PSTN carrier fails to notify the event, the Backup protocol automatically activates the GSM carrier and, using a protocol compatible with the carrier, repeats the attempt to execute the phone notification cycle.



### NOTIFICATION CYCLE

The phone notification cycle is governed by a maximum execution time of 240 sec., within which the cycle of calls in progress must end. When the maximum time has elapsed, the phone cycle stops and the communication fault report is activated.

The communicators execute alarm notification calls according to precise functional rules defined by the Notification Cycle.

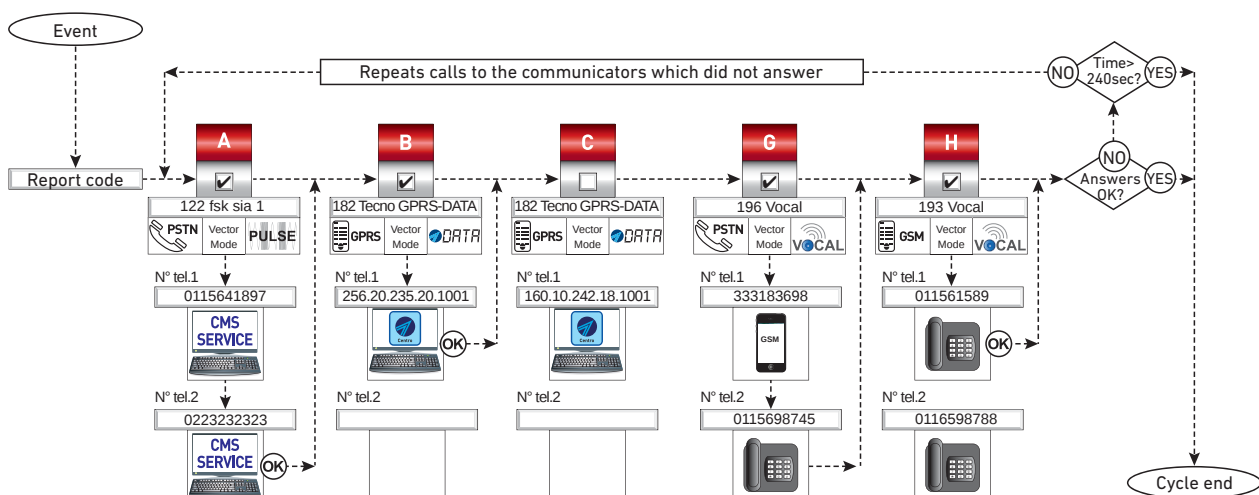
The Notification Cycle is performed according to the following rules:

The recipient no. 1 (main) is contacted, if it cannot be reached, the recipient no. 2 (secondary) is contacted.

If both recipients do not answer, the dialer selects the possible next communicator associated with the event, repeating the calls. If the communicator within 240 sec fails to notify the events to the phone numbers associated with it, the control unit activates the communication failure report. The failure is also recorded in the event log of the control unit.

Note: the maximum time limit of the phone cycle is set by the standard EN 54-21: 2006.

To avoid unnecessary fault messages due to the continuation of the telephone cycle, it is recommended to limit its duration and to avoid associating too many phone communicators to the events.



### REPORT CODES

The dialer notifies the System events by sending report codes. The TFCOM dialer manages two types of report codes, the first called "Report Codes" sorts all System events in homogeneous categories. Enabling the category you enable transmission of all events grouped in it. The second, called "Zones report codes" only includes events relating to Zones, and provides the possibility to freely associate the events of each zone and of each single control unit to the telephone communicators.

The table "Categories of transmissible events" lists

all report codes categories. The grouped events, their description and transmission priority are provided for each of them. To simplify the setting procedure, the events are grouped into homogeneous categories. Enabling a category you enable the transmission of all the events grouped in it.

The communicator sends within the same communication session any events associated with it. The phone cycle is momentarily stopped if events with highest priority must be transmitted by other communicators.

| Report codes categories |                                                     |                                               |            |                                                       |                                               |                           |       |                       |
|-------------------------|-----------------------------------------------------|-----------------------------------------------|------------|-------------------------------------------------------|-----------------------------------------------|---------------------------|-------|-----------------------|
| CR and CRZ              | Zones Alarm<br>Priority 1 (high)                    | Zones Alarm                                   | CR         | System General Reporting<br>Priority 3 (low)          | Line reset                                    |                           |       |                       |
| CR                      | Module sensor alarm<br>Priority 1 (high)            | Sensors alarm                                 | CR         | System Fault<br>Priority 2 (normal)                   | System failure                                |                           |       |                       |
|                         |                                                     | Modules alarm                                 |            |                                                       | System fault reset                            |                           |       |                       |
| CR and CRZ              | Zones alert<br>Priority 1 (high)                    | Zones alert                                   | CR         | Zones exclusion<br>Priority 3 (low)                   | Zones exclusion line reset                    |                           |       |                       |
| CR                      | Sensor Modules Alert<br>Priority 1 (high)           | Sensors alert<br>Modules alert                | CR         | Zones inclusion<br>Priority 3 (low)                   | Zones inclusion                               |                           |       |                       |
| CR and CRZ              | Zones Technical Alarm<br>Priority 3 (low)           | Zones Technical Alarm                         | CR         | Devices Exclusion (BUS485)<br>Priority 3 (low)        | Devices exclusion                             |                           |       |                       |
| CR                      | Module sensor technical alarm<br>Priority 3 (low)   | Sensor Technical Alarm                        | CR         | Devices Inclusion (BUS485)<br>Priority 3 (low)        | Devices inclusion                             |                           |       |                       |
|                         |                                                     | Module Technical Alarm                        | CR         | Control Unit repetition exclusion<br>Priority 3 (low) | Repetition exclusion                          |                           |       |                       |
|                         |                                                     | Sensor technical alarm reset                  |            |                                                       |                                               |                           |       |                       |
|                         |                                                     | Module technical alarm reset                  |            |                                                       |                                               |                           |       |                       |
| CR and CRZ              | Zones Fault<br>Priority 2 (normal)                  | Zones Fault                                   | CR         | Control Unit repetition inclusion<br>Priority 3 (low) | Repetition inclusion                          |                           |       |                       |
| CR                      | Module sensor fault<br>Priority 2 (normal)          | Sensor fault                                  | CR         | Manned<br>Priority 3 (low)                            | Manning activation                            |                           |       |                       |
|                         |                                                     | Module fault                                  |            |                                                       | Manning deactivation                          |                           |       |                       |
| CR                      | Devices Fault (RS485)<br>Priority 2 (normal)        | Device Fault                                  | CR         | Sirens<br>Priority 3 (low)                            | Sirens muting                                 |                           |       |                       |
|                         |                                                     | Timer Reset                                   |            |                                                       | Sirens Reset                                  |                           |       |                       |
|                         |                                                     | Device fault reset                            |            |                                                       | CR                                            | Reset<br>Priority 3 (low) | Reset |                       |
| CR                      | Alarm Acknowledgement<br>Priority 3 (low)           | Alarm category acknowledgement                | CR         | Evacuation<br>Priority 3 (low)                        |                                               |                           |       | Evacuation activation |
| CR                      | Alert acknowledgement<br>Priority 3 (low)           | Alert category acknowledgement                | CR         | Cyclic test<br>Priority 3 (low)                       |                                               |                           |       | Cyclic test           |
| CR                      | Technical alarm acknowledgement<br>Priority 3 (low) | Technical alarm category acknowl-<br>edgement | CR and CRZ | Zone Technical Alert<br>Priority 3 (high)             | Zone Technical Alert                          |                           |       |                       |
| CR                      | Fault acknowledgement<br>Priority 2 (normal)        | Fault category acknowledgement                |            |                                                       | Zone technical alert reset                    |                           |       |                       |
| CR                      | User operations<br>Priority 3 (low)                 | Alert automatic acknowledgement               | CR         | Module sensor technical alert<br>Priority 3 (high)    | Sensor technical alert                        |                           |       |                       |
| CR                      | Module sensor exclusion<br>Priority 3 (low)         | Sensor exclusion                              |            |                                                       | Module technical alert                        |                           |       |                       |
|                         |                                                     | Module exclusion                              |            |                                                       | Sensor technical alert reset                  |                           |       |                       |
| CR                      | Module sensor inclusion<br>Priority 3 (low)         | Sensor inclusion                              |            |                                                       | Module technical alert reset                  |                           |       |                       |
| CR                      | Module sensor inclusion<br>Priority 3 (low)         | Module inclusion                              | CR         | Technical alert acknowledgement<br>Priority 3 (low)   | Technical alert category acknowl-<br>edgement |                           |       |                       |
| CR                      | Event download request<br>Priority 3 (low)          | Event memory download                         |            |                                                       |                                               |                           |       |                       |

**Report code classification** - the acronyms CR and CRZ indicate the classes: **CR = Report Codes - codes = CRZ Zone Report Codes**

**Note** - The report codes of Zone functional states can be associated with the communicators in the modes: General Association and/or Specific Association.

**General association** - To define general associations, from Centro software use the setting screen "Report Codes".

**Specific association** - To define specific associations, from Centro software use the setting screen "Zone Report Codes".

With the general association the communicator/s are associated with the type of event for all the zones of all the control units.

With the specific association, the events of each zone of each control unit that makes up the system can be freely associated to the communicators.

## Phone dialer

| General Association - Report Codes                                                                                                                                                                                                              | Specific Association - Zone Report Codes                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                          |
| <p><b>Example</b> - The "Zone Alarm" report code that groups the Alarms of all the zones is associated with communicators A and B. The two communicators transmit Zone Alarm phone notifications to the phone numbers associated with them.</p> | <p><b>Example</b> - The "Alarm" report codes in zones 1, 2, 3 and 4 are independently associated to communicators A, B, G and H. Each communicator transmits the "Alarm" phone notification of the Zone or Zones associated with it.</p> |

### ACKNOWLEDGEMENTS

The recipients of the calls, either users or automatic alarm reception devices, can stop the call in progress with set commands.

Muting from alarm reception centre

After a call, all the alarm reception centres automatically send the muting command to the dialer.

#### Voice calls

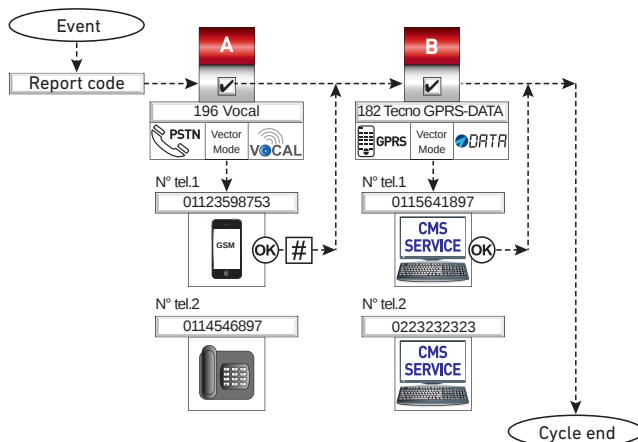
For voice calls, it is the online user that sends the muting command. During the call, after listening to the

message, the user can mute the communicator by typing from the keyboard of his telephone the key (\*) or (#).

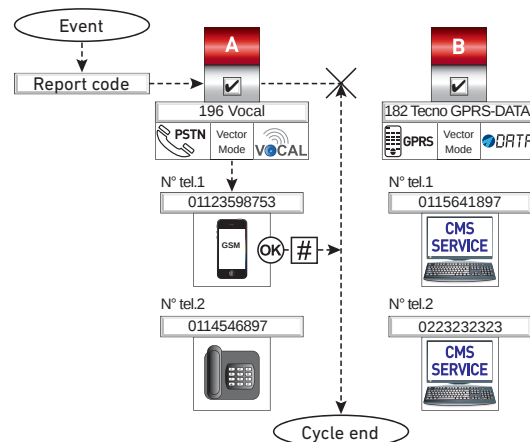
#### Global muting of communicators

Muting can also be set as global muting, enabling the function "Dialer global muting" in the Options menu. In this case a muting command stops the current call and disables all subsequent calls to all the communicators associated to the muted event

#### Muting



#### Global muting

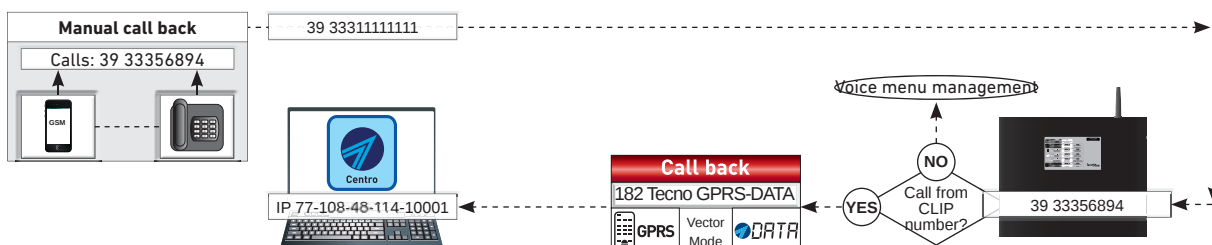


### TCP/IP REMOTE MANAGEMENT

With the Call back communicator you can remotely manage the System. Remote management can only be executed via the GPRS carrier. The Tecnoserver (TCP/IP remote management) allows to execute the Call back request in CLIP mode. The Call back request can be forwarded to the TFCOM dialer with any phone, provided that its number is equal to the number set in the CLIP field of the Call back Communicator. The TFCOM dialer verifies the number the call is coming from and if it is

equal to the CLIP number, activates the Call back call using the GPRS carrier with the communication protocol 182 GPRS-DATA.

| Call back                    |                                       |
|------------------------------|---------------------------------------|
| IP 77-108-48-114-10001G      | Address and port of the Centro TCP/IP |
| CLIP 39 3331111111           | Telephone number used for stimulation |
| Protocol 182 Tecno GPRS-DATA | Communication protocol                |



## Phone dialer

### DEDICATED ACCESSORIES

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |                          |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--------------------------|
| <b>TFESP<br/>GSM-GPRS</b> |        |  |  |  |  |  |                          |
|                           |  <p>The TFESP GSM-GPRS is a GSM 2G interface for the telephone communicator TFCOM. Transmission formats: Voice, SMS, Ring, DTMF, Data - AES 128 bit and AES 256 bit data encryption - Independent passphrase for each channel - Automatic airtime request for prepaid SIM cards - Plug-in connection to TFCOM board<br/>EN 54-21:2006 - Certification number 0051-CPR-0454 (approved for use with TFA1-298, TFA2-596 and TFA4-1192 control panels)</p>                                                              |  |  |  |  |  |                          |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  | Item no. TF2TFESPGSMGPRS |

### TFCOM - Technical data and functions

|                                                                                     |                              |                                        |                           |                                          |                              |
|-------------------------------------------------------------------------------------|------------------------------|----------------------------------------|---------------------------|------------------------------------------|------------------------------|
| Overview                                                                            | Device Name                  | TFCOM                                  | Buffer battery            | Flammability class                       | V-2 or higher                |
|                                                                                     | Description                  | Phone dialer                           |                           | Trip voltage                             | For Vbat <8,9V               |
|                                                                                     | Communication protocol       | FIRE-BUS                               |                           | Current for battery charger              | 0.85A maximum                |
|                                                                                     | Addressing                   | Dip-switch                             |                           | Charge time                              | 100% in 12 hours             |
|                                                                                     | Connection                   | Bus RS485                              |                           |                                          |                              |
| Telephony                                                                           | Speech synthesis             | Yes                                    | Electrical specifications | Power supply                             | From Serial Bus              |
|                                                                                     | Communicators                | 8                                      |                           | Rated Voltage                            | 24V DC                       |
|                                                                                     | Phone numbers - IP addresses | 8+8 (24 characters)                    |                           | Operating voltage                        | 20V...27.6V DC               |
|                                                                                     | Communicable events          | 33 (categories)                        |                           | Typical draw (idle)                      | 90mA @ 24V DC                |
|                                                                                     | Transmittable zone events    | 5 (types)                              |                           | Max draw (when signalling)               | 140mA @ 24V DC               |
|                                                                                     | Communication protocols      | 29                                     |                           |                                          |                              |
|                                                                                     | Telephone queue items        | 32                                     |                           |                                          |                              |
| PSTN carrier                                                                        | PSTN phone transmitter       | ATE2                                   | Physical specifications   | Operating temperature:                   | -5°C...+40°C                 |
|                                                                                     | PSTN carrier compliant       | ETSI ES 203 021-1                      |                           | Relative Humidity                        | 10%...93% (non condensing)   |
|                                                                                     | Transmission time D4 10sec   | Vocal mode 12sec.<br>Contact ID17 sec. |                           | Battery housing                          | 1 (12V/7Ah)                  |
|                                                                                     | Transmission time M3 60sec   | Vocal mode 12sec.<br>Contact ID19 sec. |                           | Protection class                         | IP30                         |
| GSM-GPRS carrier                                                                    | GSM-GPRS carrier (optional)  | TFESP GSM-GPRS                         |                           | Enclosure                                | Metal                        |
|                                                                                     | GSM phone transmitter        | ATE4 (GPRS)                            |                           | Dimensions (L x H x D)                   | 315 x 255 x 82mm             |
|                                                                                     | Transmission time D4 10sec   | SIA IP DC-09 10sec                     |                           | Antenna height                           | 65mm                         |
|                                                                                     | Transmission time M3 60sec   | SIA IP DC-09 10sec                     | Weight                    | 2.5Kg                                    |                              |
| Hardware specification                                                              | Data memory                  | Flash 1Gbit                            | RTTE 99/05/EC conformity  | Class 1/TTE                              | CE 0889                      |
|                                                                                     | Management interface         | USB port                               |                           |                                          |                              |
| Outputs                                                                             | Fault signalling relay       | Protected - I <sub>max</sub> 750mA     | Reg. 305/2011 conformity  | Fire standard                            | EN 54-21:2006                |
|                                                                                     |                              |                                        |                           | Phone standard                           | EN 50136-1-1<br>EN 50136-2-1 |
|                                                                                     |                              |                                        |                           | Approval certificate                     | 0051-CPR-0454                |
|                                                                                     |                              |                                        |                           | Year of CE marking                       | 16                           |
|                                                                                     |                              |                                        |                           | Number of the declaration of performance | 016_TFCOM                    |
|                                                                                     |                              |                                        |                           | Certification body                       | IMQ                          |
| Approved for use in combination with control units TFA1-298, TFA2-596 and TFA4-1192 |                              |                                        |                           |                                          |                              |

N.B. The declarations of conformity and performance can be found at: [www.tecnofiredetection.com](http://www.tecnofiredetection.com)