Vemer SpA

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CE

Mod. X.Code BUS

User Manual
GSM PHONE DIALLER
Read all instructions carefully

(A)

(B)

(C)

■ The **X.Code BUS** phone dialler is a radio-frequency device for the remote control:
  - of a relay's ON/OFF status
  - of a serial bus on a RS-485 line
by sending a SMS message (short message service). As regards the details for use with the thermostats and programmable thermostats in the Vemer range, reference is made to the instructions for the specific product.

SAFETY INSTRUCTIONS

During the installation and operation of the device observe the following instructions:
1) *The device must be installed by a qualified person*
2) *The device is aimed to be used in household premises and similar environments*
3) *Do not use the device for purposes other than indicated*
4) *A two-pole disconnect device shall be provided as part of the building installation*
5) *A protection device against over-currents should be installed in the electrical system, upstream of the device*
6) *When installing the device, carefully respect the wiring diagrams*
7) *Disconnect the device from the power supply before removing the cover*
8) *Do not power or connect the instrument if any part of it is damaged*
9) *The use of a GSM device can cause interference with the functioning of electronic devices non-screened from radiofrequency signals (electromedical devices, pacemakers, hearing aids etc.)*
10) *In case of fault, do not service the device yourself but contact the after-sales service*

Code	Model	Description
VE072500	X.CODE BUS	GSM phone dialler

NOTE: Relay status is maintained even during power down conditions.

TECHNICAL FEATURES

- Power supply: 230 V AC (-15%/+10%), 50/60 Hz
- Input power: 4VA
- Relay output: bistable type with C-NO contact
  contact capacity: 5A 250V AC on resistive load
- Serial bus output: RS-485 type
- GSM Quad Band module (850-900-1800-1900 MHz)
- Antenna built in the device
- Manual relay status (ON/OFF) force-switching
- Relay status indication
- GSM line indication
- Operating temperature: 0 ÷ 50 °C
- Relative humidity when in operation: 10% ÷ 90% non condensing
- Storage temperature: –10 ÷ 65 °C
- Protection rating: IPX2D

INSTALLATION

POSITIONING
The device must be placed in a position enjoying sufficient GSM line from the selected servicer provider: as a positioning aid, it is possible to use an ordinary cellular phone holding the dialler's SIM card or a card managed by the same service provider.

NOTE: Disable the PIN code for the SIM card to be used in the dialler before placing it in the dialler itself (make sure it is disabled or disable it by inserting the SIM card in a cell phone and removing the PIN CODE option).

INSTALLATION (fig. B and C)
- Open the device and carefully remove the base plate housing the electronic circuit
- Prepare power cables and cables for output devices using slots ① and ② on the dialler's mounting base. Power rating marking is on dialler's mounting base and on the inner part of the cover
- Secure the dialler's mounting base onto wall ③. Fasten it on a flush-mounting box (type 503 or similar) using the screws supplied; to fasten it directly on the wall use screws of max Ø=4mm
- Screw the base plate housing the electronic circuit back on the mounting base of the dialler
- Connect power cables and output cables as indicated in fig. D, keeping the wires apart from the antenna as much as possible so as to avoid interference.

INSERTION/REPLACEMENT OF THE SIM CARD (fig. E)
- Ensure that the power cables are disconnected before inserting the SIM card (the dialler must be off)
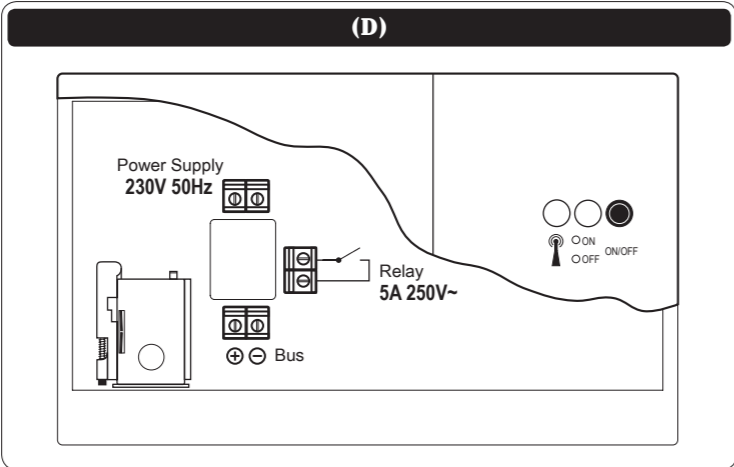
- To insert the SIM-card in the appropriate position ⑦ press the release button ⑧, remove the card holder ⑨ and slide the SIM card into the holder from below; ensure that the cut-off corner is in the lower right corner and that the contacts face the circuit. Then slide the card holder ⑨ in the appropriate housing ⑦ and lock it in its final position
- Put the cover back on the dialler and power this.

NOTE: When just powered, the device's ON/OFF LED ⑤ will flash orange. If the orange flashing does not stop, this means that the device has a problem reading the SIM card, e.g. the PIN code is enabled.

OPERATION

When correctly installed and powered and with sufficient GSM line, the device can receive and manage SMS messages to actuate the relay or send commands to the serial bus.

NOTE: When the GSM line green LED ④ stays on, it means that the device is searching for the line (device not ready)
when this LED flashes, it means that the connection is active (device ready)

It is possible to change relay status by the use of the ON/OFF button ⑥.
It is also possible to send an information SMS following a request from any of the phone numbers in the approved list (master numbers). The request is made by a simple ring to the **X.Code** number.

CONTROL OF RELAY OUTPUT
It is possible to change and verify the status of the device's relay output by sending an SMS message. The following actions can be made via SMS (cfr. SMS STRUCTURE – RELAY OUTPUT):

- switch the relay ON
- switch the relay OFF
- read relay status

NOTE: Relay status is maintained even during power down conditions.

CONTROL OF SERIAL BUS
The serial bus makes it possible to control Vemer programmable thermostats equipped with a serial interface. Once the device has been configured (cfr. CONFIGURATION), the following actions become possible by SMS (cfr. SMS STRUCTURE – BUS OUTPUT):

- switch the system on in automatic mode
- switch the system on in manual mode defining setpoint
- switch the system off
- program control status – OFF, automatic or manual defining a setpoint - for each control zone (when the system has more than one control zone)
- read the temperature measured in the various zones (when the system has more than one control zone) and the one measured by the outdoor sensor probe (if any).

HANDLING OF MASTER NUMBERS
"Master numbers" are the numbers to which X.Code can send SMS messages containing information on the status of the relay output and of the programmable thermostat connected to the bus.
SMS messages are sent after one of the master numbers has rung the **X.Code** number (the call will not be answered and will cost nothing).
To store master numbers in memory cfr. CONFIGURATION or SMS STRUCTURE – HANDLING OF MASTER NUMBERS.

NOTE: If the number calling is in the list of master numbers it is possible to avoid the password prompt in the structure of the SMS message.

MESSAGE FORWARDING
This function sends all the SMS messages received by X.Code (excluding device control messages) to a pre-determined number.
This is useful to receive messages from the phone service provider (cfr. SMS STRUCTURE – FORWARDING CONTROL).

REFERENCE STANDARDS

Conformity to EU Directive **99/05/CE** (R&TTE)
is declared with reference to the following harmonised standards:
EN 60950-1 and **EN 301489-1/7**

(D)

Power Supply
230V 50Hz

Relay
5A 250V~

Bus

(E)

SIM-CARD
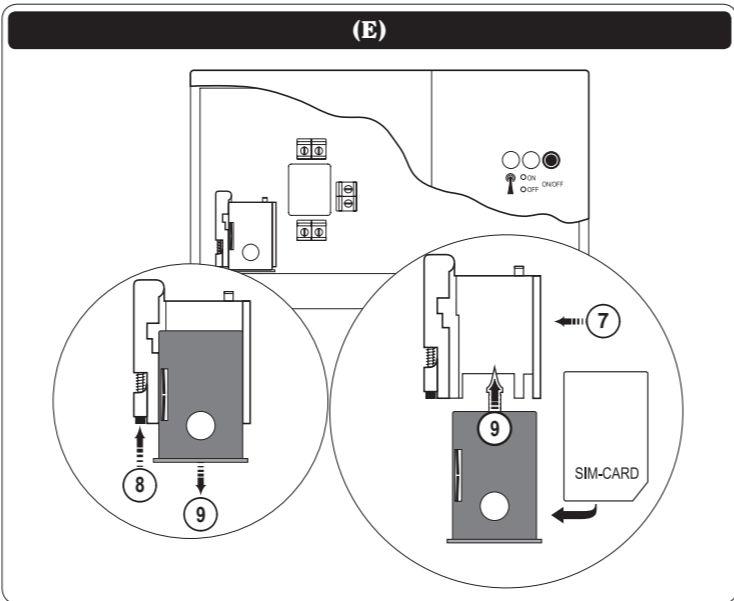
CONFIGURATION

CONFIGURATION PROCEDURE

Possible configuration procedures:

A. configuration of password
B. configuration of serial bus
C. configuration of "master numbers"

To start the configuration procedure press ON/OFF button ⑥ for approximately 10s: this status will be indicated by the flashing of LED ⑤. The display will stay in configuration mode for approximately 5' or until the configuration procedure is finished.
To abort the configuration procedure press the same button again for 10s.

A. PASSWORD CONFIGURATION

Once the configuration procedure has been started, it is possible to enter the X.Code device's password by sending an SMS message.

Syntax: **XCODE PASS [psw]**

[psw] selected password: the password must consist of a series of up to 16 alphanumeric characters (chars beyond 16 will be cut off)

B. CONFIGURATION OF BUS DEVICES

Once the configuration procedure has been started, it is possible to configure the devices that can interact with the X.Code dialler.
As for the details concerning configuration procedure, cfr. the relevant section in the instructions for the specific device.

C. CONFIGURATION OF "MASTER NUMBERS"

When the configuration procedure has been started, it is possible to store a "master number" by calling the X.Code number and letting it ring at least once.
the number calling (unless it is hidden) will then be put in the list of "master numbers", i.e. those to which **X.Code** answers with **SMS information messages**, when a ring is received.

NOTE: It is possible to store 5 master numbers.

To restore factory settings, hold down ON/OFF button ⑥ for approximately 5s while switching the X.Code device on.
Orange LED ⑤ will go on: wait until it becomes GREEN or RED (this may take some ten seconds).
Default parameters:

Password	12345678
RelayOut	OFF
Programmable thermostat	not configured
Master numbers	none

STRUCTURE OF SMS MESSAGES

The device will answer to the sender of each SMS message structured correctly and including the correct password (unless the sender's number is hidden). Concerning the SMS message syntax it is important to highlight that:

- the XCODE device is not "case sensitive", which means that it does not distinguish between uppercase and lowercase,
- [...] stands for a word, i.e. an alphanumeric character string
- words are separated by 1 or more space characters
- optional words are separated by character '/'
- if the SMS message does not have a subject (OUT, CRONO, ...) the device will reply: XCODE SUBJECT NOT FOUND
- if the SMS message subject is not phrased properly (OUTPUT instead of OUT, ...) the device will reply: XCODE SUBJECT NOT KNOWN

PASSWORD

SMS message for password change

To remote-change the password without entering the configuration procedure:

Syntax: **XCODE [psw] PASS [new psw]**

[psw] current password
[new psw] new password

Example: **XCODE 12345678 PASS 567890**

When requested to change the password, the device answers back with a confirmation SMS message:
XCODE PASS OK

Otherwise it replies as follows:
XCODE CAMBIO PASSWORD NON ESEGUITO

RELAY OUTPUT

SMS message for relay actuation

To remote-actuate the relay:

Syntax: **XCODE [psw] OUT ON** (relay ON)
  XCODE [psw] OUT OFF (relay OFF)

[psw] password

Example: **XCODE 12345678 OUT ON**

When requested to actuate the relay, the device answers back with a confirmation SMS message:
XCODE OUT=ON (relay ON)
XCODE OUT=OFF (relay OFF)

SMS di richiesta stato

To enquire about the relay status:

Syntax: **XCODE [psw] OUT**

[psw] password

Example: **XCODE 12345678 OUT**

When enquired about the relay output, the device answers back with an SMS message:
XCODE OUT=ON (relay ON)
XCODE OUT=OFF (relay OFF)

NOTE: If the device is unable to understand the command, it will send an error SMS message:
XCODE AZIONE DI OUT NON RICONOSCIUTA

BUS OUTPUT

SMS message to change global status

To switch all zones to one operating mode:

Syntax: **XCODE [psw] CRONO [AUTO/OFF/MAN/MAN SET tt.t]**

[psw] password

AUTO all zones to automatic
OFF all zones off
MAN all zones manual with current setpoint
MAN SET tt.t all zones manual with setpoint tt.t

Example: **XCODE 12345678 CRONO MAN SET 18.1**

SMS message for zone status change

To set each zone separately:

Syntax: **XCODE [psw] CRONO [Z1/Z2/Z3/Z4] [AUTO/OFF/MAN/MAN SET tt.t]**

[psw] password

Z1 select zone 1
Z2 select zone 2
Z3 select zone 3
Z4 select zone 4
AUTO set the zone to automatic
OFF set the zone off
MAN set the zone to manual with the current setpoint
MAN SET tt.t set the zone to manual with the setpoint tt.t

It is possible to extend the command to other zones by repeating the portion [Z1/Z2/Z3/Z4] [AUTO/OFF/MAN/MAN SET tt.t].

Example: **XCODE 12345678 CRONO Z1 MAN SET 19.8 Z2 AUTO Z4 OFF**

If the status change is successful, an SMS message will be received containing the info (in brackets) about the device connected to the bus:

- the temperature read by the outdoor sensor, if any (EXT=tt.t)
- the temperature read for each zone configured (Z1...Z4)
- the operating mode (RISC=heating and COND=air conditioning)
- the operating mode (AUTO=automatic, MAN=manual, OFF)
- the manual setpoint temperature, if in manual mode status

Example:

XCODE CRONO INFO
(EXT=23.6)
(Z1=23.7 COND. MAN=18.6)
(Z2=23.6 RISC. MAN=21.3)
(Z3=23.1 COND. OFF)

SMS message for status enquiry

To learn the above information plus:
- relay output status
- message forwarding status, if any

Syntax: **XCODE [psw] INFO**

[psw] password

Example: **XCODE 12345678 INFO**

If the enquiry is successful, a reply SMS message will be received:

Example:

XCODE INFO
(EXT=23.6)
(Z1=23.7 COND. MAN=18.6)
(Z2=23.6 RISC. MAN=21.3)
(Z3=23.1 COND. OFF)
(OUT=OFF)
INOLTRA ON (TEL. [xxxx])

[xxxx] number to which SMS messages are forwarded

If the device is unable to understand the command, it sends an error SMS message:
XCODE AZIONE DI CRONO NON RICONOSCIUTA

If it is unable to interact with the bus device, the following error SMS message will be sent:
XCODE ERRORI NELL'ESECUZIONE DEI COMANDI DI BUS

HANDLING OF MASTER NUMBERS

SMS message enquiring about master numbers

To view the list of master numbers:

Syntax: **XCODE [psw] MASTER**

[psw] password

Example: **XCODE 12345678 MASTER**

When enquired about the list of master numbers, the device answers back with an SMS message:
XCODE MASTER INFO [list]

[list] list of stored master numbers

SMS message to enter a new master number

To remote-enter the sender number in the list of master numbers without accessing the configuration procedure:

Syntax: **XCODE [psw] MASTER ADD**

[psw] password

Example: **XCODE 12345678 MASTER ADD**

When requested to enter a new master number the device replies:
XCODE MASTER INCLUSO

If the device has already reached the maximum number of master numbers, the device will reply:
XCODE MASTER NO SPAZIO

SMS message to remove master numbers

To erase all master numbers:

Syntax: **XCODE [psw] MASTER CLEAR**

[psw] password

Example: **XCODE 12345678 MASTER CLEAR**

When requested to erase the master numbers, the device replies:
XCODE MASTER CLEAR

NOTE: If the message sent was not correct, the device replies:
XCODE AZIONE DI MASTER NON RICONOSCIUTA

FORWARDING CONTROL

Received SMS messages that do not have to do with the control of the X.Code device, are forwarded to the number that sends the SMS message enabling message forwarding.

SMS message to enable message forwarding

Syntax: **XCODE [psw] INOLTRA ON**

[psw] password

When forwarding is enabled the device replies:
XCODE INOLTRA ON

SMS message to disable message forwarding

Syntax: **XCODE [psw] INOLTRA OFF**

[psw] password

When forwarding is disabled the device replies:
XCODE INOLTRA OFF