



BENTEL[®]
SECURITY



GSM CELLULAR INTERFACE

B-GSM

V4.2 BUF 0.4 220300



General features

- Supplies a simulated PSTN line.
- PSTN line trouble detection with automatic switching to GSM network.
- Incoming and outgoing call management.
- Open-collector output with trouble warning LED.
- Signal strength gauge.
- Device status signalling on display.
- Supplied in tamper protected metal box.

Overview

The B-GSM analogue interface supplies a simulated line to telephone diallers and, where necessary, can totally replace the PSTN line. This analogue interface switches ordinary two-wire PSTN telephones to the GSM network, and allows them to function as **wireless** telephone devices. It can be used in numerous telematic applications, and is the perfect way to enhance the protection level of security system telephone-diallers.

The B-GSM manages calls to Central stations, and all incoming and outgoing voice calls. Thus allowing all the functions available on the BENTEL SECURITY B-TEL99, and on other similarly advanced telephone diallers, to be controlled via telephone.

CONTACT-ID protocol, 10bps protocols and, in areas with an optimum signal strength, also SIA protocol, transmit adequately over the GSM network.

Due to the characteristics of GSM networks, the B-GSM cannot be used as a modem for fax or data transmission.

The performance of the device greatly depends on the signal strength and the selected GSM network.

TECHNICAL SPECIFICATIONS

Model	B-GSM/12	B-GSM/230
Power supply voltage	13.8V $\overline{=}$	230 V \sim \pm 10% 50 Hz
Operating current	1000 mA	130 mA
Operating temperature	5 \div 40 $^{\circ}$ C	
Dimensions (W x H x D)	170 x 268 x 57.8 mm	
Weight (without battery)	1500 g	1700 g

After installation test calls should be made to the Central Station to check proper functioning of the B-GSM.

Available in the following models:

- **B-GSM/12** powered by a 13.8V $\overline{=}$ continuous current;
- **B-GSM/230** powered by 230 V 50 Hz network.

Installation

The B-GSM should be installed in a safe place, away from radio transmitters and similar devices, and should not be installed in buildings with particularly thick walls. **The B-GSM/12** must be connected to a 13.8 V $\overline{=}$ 1 A min. power supply (usually supplied by the burglar control panel and the internal battery). **The B-GSM/230** must be connected to the 230 V 50 Hz 130 mA. Both models must be connected to the internal standby battery **10** and to a telephone device (usually a telephone dialler).

Unfasten the 4 screws and remove the metal cover **1**. Lay the cables and pass them through the cable hole **9** on the backplate of the B-GSM.

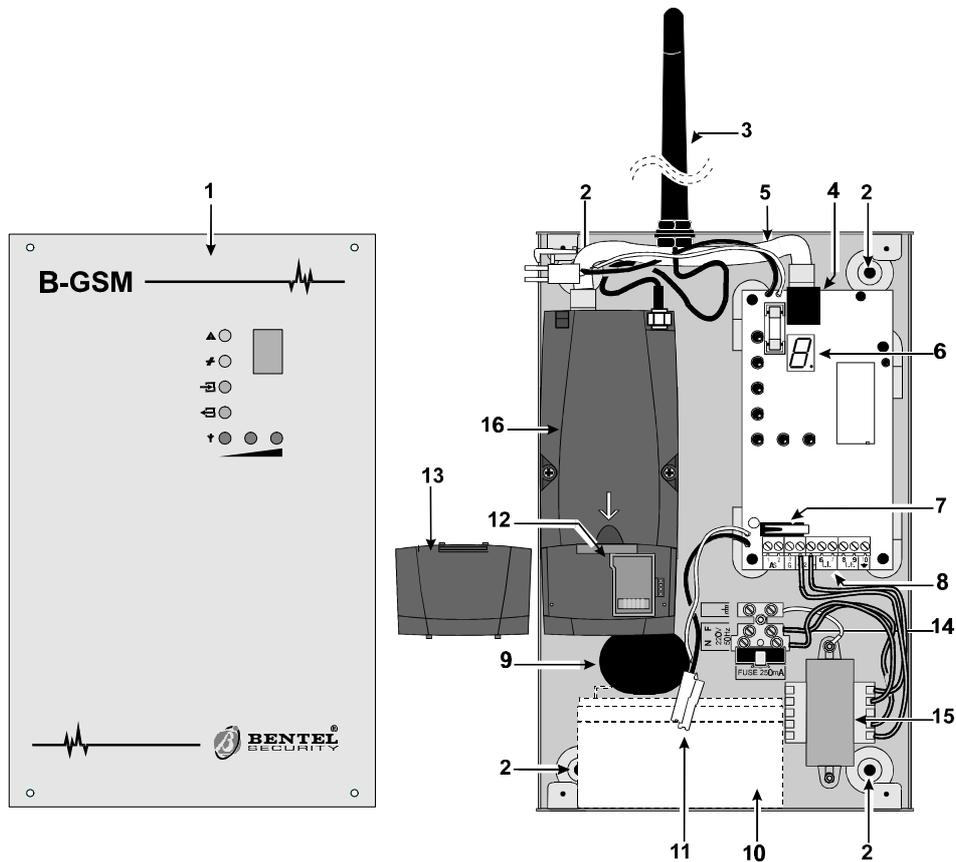


Fig. 1 - Parts

PARTS	
1	Metal cover
2	Wall mounting holes (4 x Ø 5.5 mm)
3	Antenna
4	GSM Module connector
5	RJ45 cable
6	Display
7	Tamper switch
8	Terminal board
9	Cable hole
10	Compartment for 12V/1.2 Ah standby battery (not supplied).
11	Standby battery connector
12	SIM card holder
13	SIM card cover (press down to open)
14	Terminal board for the Mains connection
15	Linear transformer (only version 230 V~ ±10% - 130mA)
16	GSM Module

Check for cable conduits and water pipes before drilling the holes 2.

Mount the backplate, remove the SIM CARD cover 13, and insert the SIM CARD in the holder (make sure the SIM CARD security PIN is disabled).

Make the connections on the terminal board 8 (see instructions), and then close the B-GSM.

+ **Screw the antenna securely into place.**

+ **Check the GSM network signal strength.**

Connections

+ **Use shielded cable for the connections. One end of the shield must be connected to ground and the other left free.**

Connect terminals 1-2[A.S.] in series to the tamper line of the burglar system.

Terminal 3[G] will signal Communication and GSM network signal failure.

Terminal 3[G] is normally open; In the event of Communication trouble, a signal as per figure 3a will be present on terminal 3[G]. In the event of GSM network signal failure a signal as per figure 3b will be present on terminal 3[G].

The LED connected to terminal 3[G] will be OFF during standby status (see figure 2). Communication trouble and GSM network signal failure will be signalled as follows:

Communication trouble - **single flash** with pauses of 2 seconds (see figure 3a);

GSM network signal failure - **double flash** with pauses of 2 seconds (see figure 3b).

Connect the terminals of the telephone device (L.E. on BENTEL SECURITY products) to terminals 6-7[L.I.] of the B-GSM interface.

Terminals 8-9 [L.E.] can be connected, if required, to the PSTN telephone line.

Connect terminals 4[+12 V] and 5[⚡] to a 1 A a 13.8 V $\overline{\text{min}}$. power supply. In the B-GSM/230 the transformer is already connected to these terminals.

+ **Connect the standby battery to assure proper functioning.**

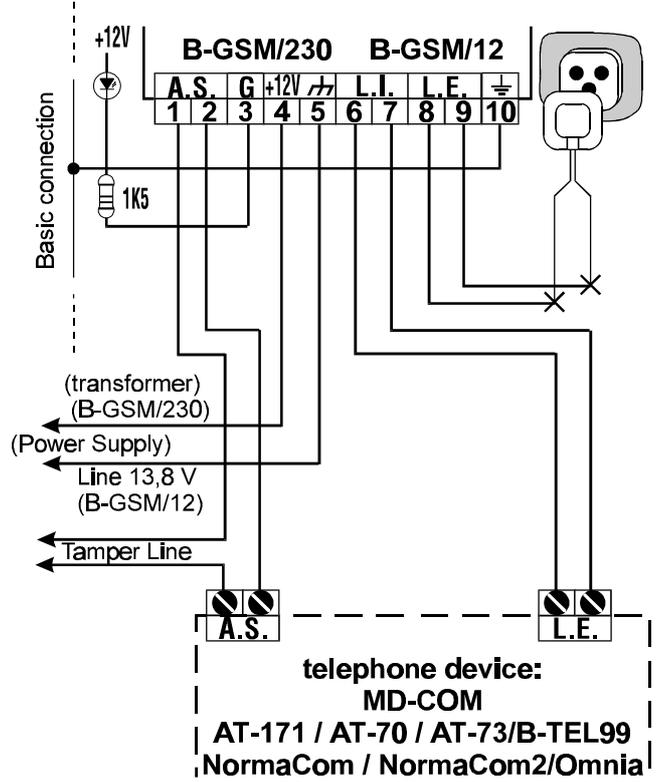


Fig. 2 - Connection example.

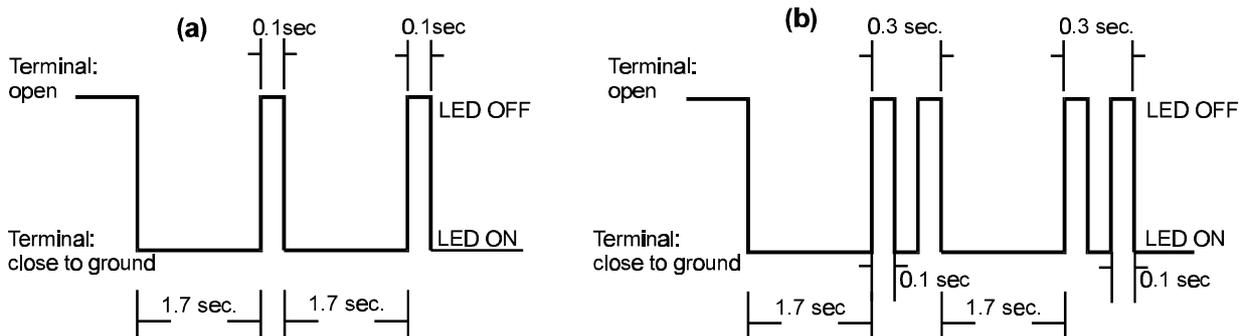


Fig. 3 - Diagram of the signal on terminal 3[G]

TERMINALS	
1-2[A.S.]	Tamper: - these terminals must be connected to the tamper switch 7: they are short-circuited when the B-GSM is properly closed, and will open when the B-GSM cover is removed.
3 [G]	Open-collector output: - this output will be activated in the event Communication trouble or GSM network signal failure.
4[+12V] 5[⚡]	Power Supply: - to guarantee proper functioning of the interface and GSM module, these terminals must be connected to a 13.8 V $\overline{\text{min}}$ 1000 mA min. voltage: the same voltage must also be connected to the internal battery. In the B-GSM/230 the transformer is already connected to these terminals.
6-7 [L.I.]	Internal telephone line: - these terminals (normally connected to the external telephone line) must be connected to the terminals of the telephone device (terminals L.E. on BENTEL SECURITY telephone Diallers).
8-9 [L.E.]	External telephone line: - the PSTN line can be connected to these terminals.
10[⊥]	Ground: - to protect the AT-GSM against overvoltage on the telephone line, in compliance with the Telecommunications network safety standards, this terminal must be connected to Mains ground.

LED SIGNALLING	
	<i>LED normally OFF: ON (solid) signals Communication trouble between the board and the GSM module; check that the RJ45 cable is connected properly, if this status persists call the installer for service.</i>
	<i>LED normally OFF: ON (solid) signals PSTN line trouble and the successive switching to the GSM network. If this status persists call the installer for service.</i>
	<i>LED normally OFF: this LED will go ON (solid) in the event of an incoming call on the B-GSM.</i>
	<i>LED normally OFF: this LED will go ON (solid) in the event of an outgoing call on the B-GSM.</i>
	<i>LED normally ON: indicates the signal strength (to be read from left to right).</i>

Fig. 4 - LED signalling

Operating principles

When trouble is detected on the PSTN line, the B-GSM interface will switch immediately to the GSM network .

This is done by a simulated line (continuous tone) which supplies the line and ring voltage for incoming calls, and also decodes DTMF and pulse dialling.

When the voltage on the PSTN line (terminals [L.E.]) drops below 3 V for 45 seconds the B-GSM will switch to the simulated line. The connected device will be switched to the GSM net-

work for 15 minutes, regardless of the PSTN line status. After 15 minutes the B-GSM will check the PSTN line:

- if restored the B-GSM will switch back;
 - if not the B-GSM will remain connected to the GSM network until the PSTN line is restored.
- No switching from GSM to PSTN will occur during calls.

Only the green LEDs are ON during standby status, indicating the signal strength.

The red LED OUTGOING CALL will go ON when the telephone device, connected to the B-GSM interface, dials a telephone number.

The red LED INCOMING CALL will go ON when the telephone device, connected to the B-GSM interface, receives a call on the SIM CARD number.

The B-GSM has a seven segment LED display, which will indicate: Line hooked; PSTN line; GSM network and the dialled number, as shown in fig. 5.

The speed at which the numbers appear on the display is that of the dialling speed of the connected telephone device.

LED DISPLAY	
	<i>Line hooked by the device connected to terminals [L.I.] (the L will be solid)</i>
	<i>The B-GSM is on the PSTN line (the t will flash)</i>
	<i>The B-GSM is on the GSM network (the G will flash)</i>

Fig. 5 - LED signalling on the display

BENTEL SECURITY reserves the right to modify the technical specifications of this product without prior notice.