

# REMOTE GSM DUAL-BAND MODEM

**C ← BUS**

## GSM 622 C1 Eng.



- **Uses digital GSM 900/1800 MHz digital telecommunications**
- **Communicates with modems :**
  - MCV 711 (discontinued)
  - MCV 712 (in replacement of MCV 711)
  - GSM 714 (to be used only in non-central, provisional stations, with laptop PCs)
- **Supplied with RF Dual Band antenna**
- **C-Bus communication speed adjustable from 1200 to 9600 baud (factory setting: 1200)**
- **Power supply 230 V~; DIN rail mounting**

### 1. APPLICATION

GSM 622 modem is suitable for “TELECOSTER” telemanagement systems, installed in a remote position (e.g. central heating site) for data communication to and from the central sites.

### 2. FUNCTIONS

GSM 622 modem is an E-GSM dual-band modem (900/1800 MHz) with a transmission speed configurable from 2400 to 14400 bps in non-transparent mode (with error correction).

**It cannot communicate with modems having a transmission speed below 2400 bps (e.g. MCT 710).**

It supports AT+ controls in conformity with standard ETSI GSM 07.05 & 07.07 & V.25ter.

The digital interface conforms to the ITU-T.V24 and V.28 recommendations.

It incorporates autodiagnosis that indicate the presence of the GSM signal.

Every six hours resets itself automatically.

It is possible to reset manually by connecting a push-button switch to terminals E-D.

### 3. REFERENCE STANDARDS

The protocol details are based on the following standards:

- 1999/5/CE of March 9 1999, R & TTE, as having been designed in conformity with the requirements of following Reference Standards : EN 60950, EN 301 489-1, EN 301 489-7, EN 301-419-1, EN 301-511

### 4. ACCESSORIES

Code	Description	Data sheet
<b>APA 812</b>	5 meter cable for extending antenna for GSM 622	–
<b>APA 812 C1</b>	4 meter cable for extending antenna for GSM 622 C1	–
<b>ACS 232</b>	RS 232 cable with male DB 9.	–
<b>ALM 688</b>	Backup battery	T 350
<b>TCB 908</b>	Tester for connections and telephone calls	–

### 5. TECHNICAL DATA

#### • Electrical & mechanical:

Power supply	230 V ~ ± 10 %
Frequency	50...60 Hz
Consumption	11 VA
Electrical protection	IP 40
Construction standard	Italian Electrotech. Committee (CEI)
Ambient temperature:	
operating	0...+ 45 °C
storage	– 25...+ 60 °C
Dimensions	105 x 115 x 71.5 mm (L x W x H)
Weight	0.7 kg

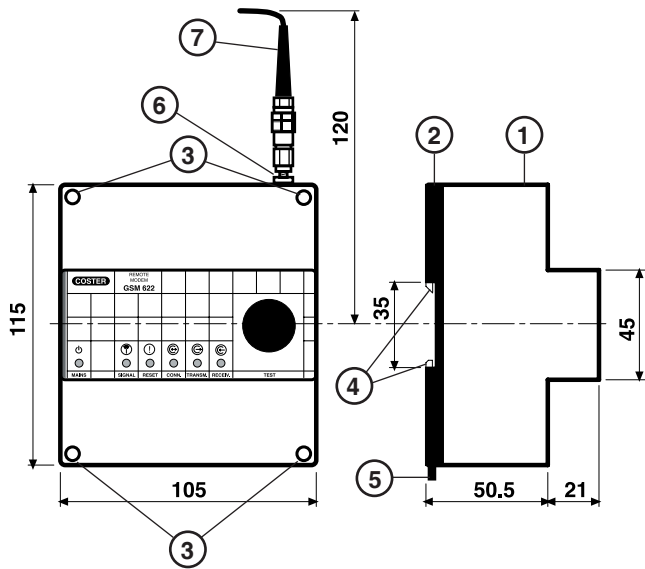
#### • Transmission data:

Data format	asynchronous start-stop
Character data	8 bits data, 1 bit stop
	none
Transmission speed	1,400...14,400 bps
RF antenna	SMA connector

#### • C-Bus communication:

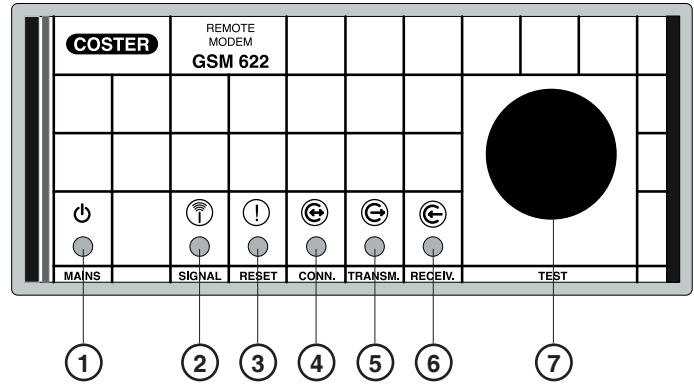
Speed adjustable	from 1.200 to 9.600 baud
via SWC 701 Remote Management software	
C-Bus line with 1.5 mm <sup>2</sup> cable	max. 2000 metres
Max. number of slaves	100

**6. OVERALL DIMENSIONS**



- 1 – Protective cover for electronic components
- 2 – Base with transformer, relay and terminal block
- 3 – Screws for securing cover to base
- 4 – DIN rail securing elements
- 5 – DIN rail release lever
- 6 – Antenna coupling
- 7 – Antenna cable

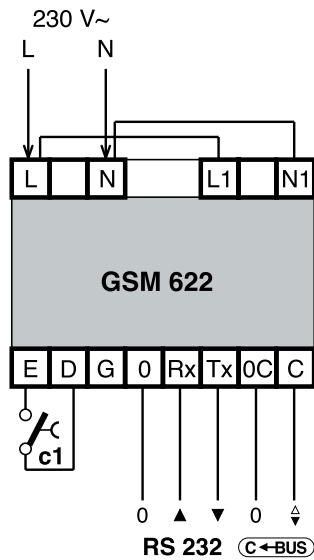
**7. FACIA**



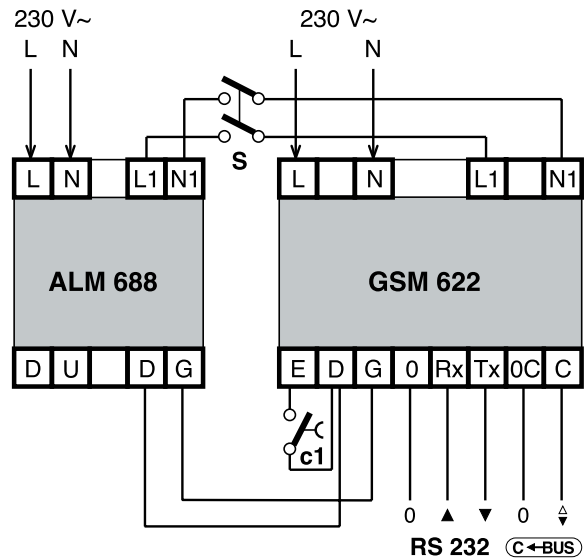
- 1 – Power
- 2 – Presence signal
- 3 – Reset modem
- 4 – Connection
- 5 – Data transmission
- 6 – Data reception
- 7 – Socket for TCB 908 tester

**8. WIRING DIAGRAMS**

**8.1 Without backup battery**



**8.2 With ALM 688 backup battery.**



- L - N – Electric power from mains (230 V~)
- L1 - N1 – Electric power from mains or from ALM 688 battery backup (230 V~)
- D - G – Electric power as direct current from battery backup (18 V~)
- c1 – Reset button
- S – Bipolar sectionner (recommended)
- RS232 – By inverting Tx and Rx it is possible to connect Coster devices (DIN format) provided with a serial input.
- C-BUS – Parallel output for connecting to Coster devices fitted with C-BUS parallel input.

## 9. SITING

The modem must be installed in a dry location that respects the relevant ambient conditions given under 5.TECHNICAL DATA. If sited in a location classified as "Hazardous" it must be installed in a cabinet for electrical equipment constructed according to the regulations in force for the class of danger concerned.

The modem can be mounted on a DIN rail and housed in a standard DIN enclosure.

The antenna must be installed in a zone covered by the chosen telephone operator, using, if necessary, the APA 812 extension.

## 10. ELECTRICAL CONNECTIONS

Proceed as follows :

- Loosen the four screws (6.3) that fix the cover to the base and separate the two parts.
- Mount the base on the DIN rail and check that the securing elements (6.4) anchor it securely
- Make the electrical connections according to the diagram and in observance of the safety regulations in force using the following cables: :
  - 1.5 mm<sup>2</sup> for the power supply and the relay control outputs.
  - 1 mm<sup>2</sup> for C-Bus and RS232 for length limits see data sheet T 021.
- Switch on power (230 V~) and check its presence at terminals L – N and L1-N1.
- Switch off power, replace cover on base/terminal block and secure it with the four screws supplied (6.3).
- Connect the antenna cable (6.8) to the coupling (6.6) using the female-female connector (6.7)

You are advised not to insert more than two cables in a single terminal and if necessary to use an external junction box .

## 11. C-BUS LINE CHARACTERISTICS

The C-Bus line's communication speed can be set at 1200, 2400, 4800 and 9600 baud.

To set the desired speed, the TCB 908 tester can be used, connected to a PC.

The desired speed can be selected via the SWC 701 Remote Management software.

**The C-Bus line can be up to 2000 metres long, with 100 slave units at the most, regardless of transmission speed.**

## 12. SIM CARDS

### 12.1 Purchase of SIM CARD.

You are advised to purchase the SIM card from your chosen GSM network service provider for business networks. When purchasing, it is essential to request a card enabled for the transmission and reception of DATA with the following communication modes: AUTOBAUDING; ASYNCHRONOUS; NOT TRANSPARENT (correction data enabled).

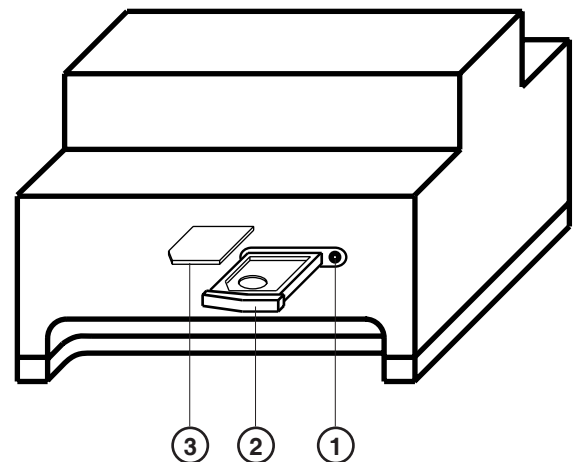
### 12.2 Inserting SIM card in GSM 622

Before inserting the SIM card in the modem **it is essential to disable the PIN code of the card.**

To do this, use a GSM cellular telephone and insert the SIM card in it; then, following the instructions received from this telephone, disable the PIN code.

To install the SIM card in GSM 622 proceed as follows:

- Ensure that the modem is switched off; **You must NOT insert or remove the SIM card while the modem is switched on.**
- Using a pointed object, press button (1) to extract card holder (2).
- Insert SIM card (3) in the holder making sure that it is the right way round
- Push in the card holder until it clicks into place.
- Power the modem.



### 12.3 GSM network signal strength indicator

LED (7.2) indicates the status of the modem :

- **off** : modem not ready;
- **on** : searching for signal, SIM card not inserted, absence of antenna or in reset stage
- **slow flashing** : signal present;
- **rapid flashing** : modem transmitting;

To know exactly the signal quality you must:

- connect GSM 622 to a computer (with SIM inserted and powered) and
- using a communication program or SWC 701 telemanagement program, send instruction "AT + CSQ" to the modem;
- read the reply coming from GSM 622:
  - from 0 to 9 = the field is almost always too weak
  - from 10 to 15 = the field is usually strong enough
  - over 15 = the field is good

Date	Revision No.	Page	Section	Amendment description	Firmware version	Software version
<b>Amendments to data sheet</b>						
22.11.04 LB		1	3. REFERENCE STANDARDS 5. TECHNICAL DATA	New directive. Variation on "Transmission speed", and elimination of some technical data.		
25.07.06 LB		1	4. ACCESSORIES	Amended accessories table		
26.10.06 LB		1		Update photograph		
01.10.07 AM		1	6. OVERALL DIMENSIONS	Update diagram "Overall dimensions"		
02.03.09 AM	<b>01</b>	3	11.3.0 GSM network signal strength indicator	Aggiornati dati del segnale di campo		
04.02.10 AM	<b>02</b>	1 and 3	5 and 11	C-Bus transmission speed updated		



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