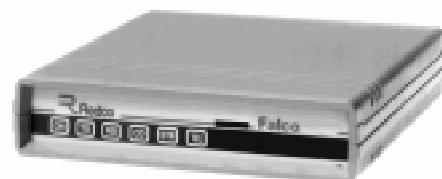


GSM DESK-TOP MODEM

GSM 712 Eng.



- Uses GSM 900/1800 MHz digital telecommunication networks
- Communication with GSM remote modems



1.APPLICATION

GSM 712 modem is used in "TELECOSTER" telemanagement systems for transmitting data to and from remote plants (e.g. boiler plants) where GSM modems are installed.

2.FUNCTIONS

GSM 712 is a GSM dual band modem (900/1800 MHz) with a transmitting speed adjustable from 1200 to 9600 bps both in non-transparent mode (with error correction) and transparent (without error correction). It supports AT+ controls in conformity with ETSI GSM 07.07 standard. It incorporates a self-diagnosing function that indicates the GSM network signal strength. The digital interface conforms to ITU-TV.24 and V.28 Recommendations.

3.REFERENCE STANDARDS

The protocols are based on the following standards:

- ETSI GSM 07.07 : European digital cellular telecommunication system (phase 2). At command set for GSM Mobile Equipment.
- ETSI GSM 07.05 : European digital cellular telecommunication system (phase 2). Use of DTE/DCE interface for Short Message service and cell broadcast service.
- ITU-T V.25ter : "serial asynchronous automatic dialling and control"

4. TECHNICAL DATA

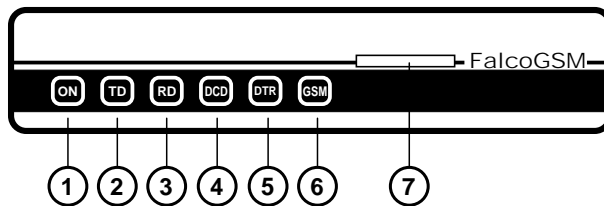
• Transmission data:

Data format	asynchronous start-stop
Character format	7/8 data bits, 1/2 stop bits, parity odd/even/none
Transmission speed	1200 ... 9600 bps
Transmission standard	V.22bis, V.32
Transmission mode	full duplex
Interface speed	300 bps ... 115.2 Kbps
Data Terminal Equipment interface	conforms ITU-T V.24/V.28 tested on female connector DB25 (ISO.2110)
Data Terminal Ready	the OFF status of DTR prevents the transmission/reception of the modem
Traffic control	RTS/CTS
Power RF output (max)	33 dBm ± 2 dB (900) 30 dBm ± 2 dB (1800)
RF antenna	FME connector

• Electrical & mechanical

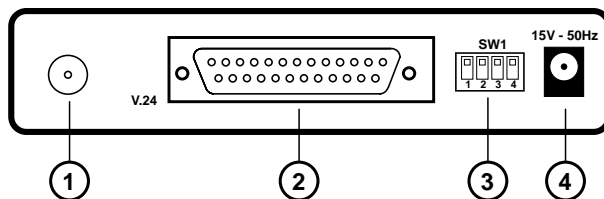
Power supply	external transformer (supplied with modem) Input : 230 V ~ ± 10 % Output : 15 V ~ 200 mA
	or: 12 V - self-reset 0.5 A fuse
Protection	Italian Electrotech. Committee (CEI)
Construction standards	
Ambient temperature:	
- operation	- 20 ... + 55 °C
- storage	- 25 ... + 70 °C
Dimensions	130 x 135 x 27 mm (W x D x H)
Weight	0.2 kg

5.FRONT PANEL – DESCRIPTION OF LEDs



- 1 - **ON** : green LED: lit indicates that modem powered; off indicates not powered.
- 2 - **TD** : (transmit data) flashing red LED indicates data transmission.
- 3 - **RD** : (receive data) flashing red LED indicates data reception.
- 4 - **DCD** : (data carrier detect) red LED lit indicates presence of the carrier signal (modem connected).
- 5 - **DTR** : (data terminal ready) red LED lit indicates that computer connected and ready for reception/transmission of data.
- 6 - **GSM** : red LED lit indicates modem is seeking GSM carrier; slow flashing (every 2 seconds) indicates that connected to GSM carrier but not operative; rapid flashing (every 1 second) indicates incoming call active; Off indicates the absence of the GSM carrier signal.
- 7 : slot for inserting SIM card

6. REAR PANEL – DESCRIPTION OF MICROSWITCHES



- 1 : connector for input RFantenna.
- 2 : female connector RS232.
- 3 : microswitches "SW1" for configuring modem hardware:
 - switch - 1 : ON = RTS always ON
OFF = RTS follows the request state from RS232 (default)
 - switch - 2 : ON = DTR always ON (DTR LED remains Off)
OFF = DTR follows the request state from RS232 (default)
 - switch - 3 : ON = Loudspeaker disabled
OFF = Loudspeaker enabled (sounds only to signal an incoming call "RING") (default)
 - switch - 4 : not used
- 4 : connector for external power.

7. CONNECTIONS

– Female connector RS232.

The RS232 female 25-pin D connector (DB25) conforms to recommendation ITU-T V. 24/V.28.

Permits connecting to the telemanagement computer installed in the offices of the telemanager or in those of supervisory staff.

– Connector for RF antenna.

The connection of the magnetic antenna, supplied with the modem, must be carried out by screwing up as tightly as possible the threaded locking nut, located at the end of the antenna cable, on the GSM connector on the rear panel.

WARNING: Ensure that the modem is switched off before connecting or disconnecting the antenna.

– Power supply connector

Use the transformer supplied with the modem. Insert the cable connector in the 15V- 50 Hz socket on the rear panel of the modem. The European plug of the transformer is then inserted into the U.K. 3-pin adaptor & the latter is plugged into the main 3-pin socket.

Each time it is switched on the modem carries out a test lasting about 20 seconds at the end of which the "ON" LED remains lit and the modem is ready to function.

As an alternative, power the modem with a 12 V DC supply; **Warning Correct Polarity Must Be Observed** in this case the centre pole of the power connector is the positive of the 12 V input.

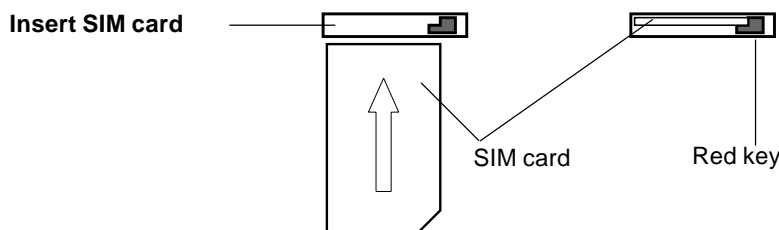
– Connector SIM card.

On the front panel is the slot for inserting the SIM card in the modem.

The SIM card must be inserted with the gold side facing downwards and with the cut-off corner facing towards the right (as in the diagram), pushing it until a light click is felt.

To remove the SIM card depress the red key lightly (see diagram) which will then release the SIM card for extraction.

WARNING: UNDER NO CIRCUMSTANCES MUST THE SIM CARD BE INSERTED OR REMOVED WHILE THE MODEM IS SWITCHED ON. SUCH OPERATIONS MUST BE CARRIED OUT ONLY WHEN THE MODEM IS SWITCHED OFF.



8. SIM CARD

It is advisable to purchase your SIM card from your chosen GSM network service provider's agent.

When purchasing it is indispensable to:

- ask for a card enabled for the transmission and reception of data and fax.
 - Usually, the network operator will supply a SIM card with three telephone numbers:
 - a VOICE number to be used for voice TELEPHONE calls.
 - a FAX number to be used for fax communications.
 - a DATA number to be used for telemanagement.
- ask for the following modes for communication data:
 - Asynchronous – "TRANSPARENT" (error correction disabled)
 - Asynchronous – "NON TRANSPARENT" (error correction enabled)

Before installing the SIM card in the modem it is essential to disable the PIN code on the card.

This can be done by inserting the SIM CARD in a cellular telephone and altering the security settings of the SIM using the phone menu system.

Before first using it, configure the SWC701 telemanagement program with the communication mode (transparent or non-transparent) as chosen for the card.

9. SIGNAL QUALITY

Using the SWC701 telemanagement program and carrying out "AT" commands it is possible to know the network signal strength:

Quality of network signal: control : **AT+CSQ** reply: **(level),(ber)**.
 Level : up to **14** low level possible connection problems.
 Over level **14** good.
 Ber : (BIT error rate), 0 in good transmission conditions; 99 indicates signal cannot be detected.

10. OPERATION

Every time it is switched on, and after inactive periods of more than 30 Seconds, GSM 712 carries out a 2-second self-test to check the GSM signal presence.

The result of the test is indicated by LED "GSM" (5.7) on the front panel which:

- flashes every two seconds to indicate detection of GSM network signal;
- flashes every one second to indicate detection of GSM network signal and of incoming call;
- completely Off indicates GSM signal not detected.

At the end of the test the modem is ready to function and the "DTR" LED (5.5) is lit provided the telemanagement program SWC701 has been opened.

Connection with remote modems is indicated by the lighting of the "DCD" LED (5.4).

In case of error, failed connection or incorrect operation, the modem provides the program with the necessary indications for identifying the fault.

11. ACCESSORIES

Each GSM 712 modem box contains:

- 1 GSM 712 modem
- 1 user instructions
- 1 RF Dual Band antenna
- 1 mains power supply transformer & U.K (Schuko to 3 pin) mains adapter



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