ecoLINE GSM Adapter

INSTALLATION AND APPLICATION MANUAL

for module version v2.0 and higher

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Table of contents

1 Application area

Adaptation to GSM network of alarm control panels which are equipped with PSTN line communicator to send reports to monitoring station using DTMF based protocols (Contact ID, Ademco Express); the module makes possible the installation of such alarm systems in places where PSTN line is not available but reporting to monitoring station is requested. The module may also be used as phone line substitute, GSM line simulator; by connecting a wired phone device to the module, incoming and outgoing calls can be performed through the GSM network.

2 Functions

- Adaptation to GSM network
- Forwarding of incoming SMS messages to one adjustable phone number
- SMS forward limit (max. 5 messages/12 hours)
- Call duration limit (max. 25 minutes/call)
- Voice dialer support
- GSM signal strength query using the function button

3 Settings

- **Setting the phone number for SMS forwarding function**

The module can forward the SMS messages received on the inserted SIM card to one adjustable mobile phone number. To adjust the phone number, connect a wired phone device to the module's "TIP-RING" terminals, then pick up the receiver and dial the following:

- to set new phone number: **✶1234✶***phone number***#**
- to delete phone number: **✶1234✶#**

After setting or deleting the phone number the module confirms the execution by emitting a beep through the phone. When a new phone number is set, the module sends as a confirmation a test SMS to the given phone number with the following message: „SMS-Forward settings accepted".

Attention! The module does not forward SMS messages received from the superuser phone number!

SMS forward limit: the module is equipped with automatic limitation of outgoing SMS messages. The function allows forwarding of 5 messages/12 hours.

- **Voice dialer support**

One main characteristic of voice dialers is that they used to start playing the message if they detect no ringtone on the line in a certain time.
By enabling this function, the module generates a simulated tone signal until the call is received. This way can be avoided that the voice dialer starts to play the message before receiving the call. By default, this function is disabled. To enable/disable voice dialer support, connect a wired phone device to the module's "TIP-RING" terminals, then pick up the receiver and dial the following:

- to enable voice dialer support: **✶0000✶1#**
- to disable voice dialer support: **✶0000✶0#**

After entering the activation or deactivation command, the module confirms the execution by emitting a beep through the phone.

- **Configuring by SMS commands**

It is possible to configure the module by sending the appropriate command in SMS to the module's phone number from the phone number configured as SUPERUSER. After receiving a command, the module sends response SMS, except for SUPERUSER registration. The SMS commands are the following:

|	
SUPERUSER#	The module sets the sender's phone number as Superuser. **The module accepts this parameter only if no Superuser has been set before!** No response SMS is sent for this command!
SU=#	Deletes the current Superuser. The module accepts this command only from previously set Superuser phone number.
SFW=_phone number_**#**	Sets the phone number where incoming SMS messages will be forwarded.
SFW=#	Deletes the phone number where incoming SMS messages are forwarded.
VDS=1#	Enable voice dialer support.
VDS=0#	Disable voice dialer support.
GMIC=_X_**#**	Adjusts the microphone volume (outgoing CID volume). Substitute X with a number between 0…15. Default setting: 3.
GSPK=_X_**#**	Adjusts the speaker volume (incoming HSK/ACK volume). Substitute X with a number between 0…100. Default setting: 50.

- **GSM signal strength query**

To get the current GSM signal strength, press shortly the pushbutton found on the module. Thereafter the number of green blinks of the LED found on the module indicates the signal level on a 3-point scale.

- **Service port**

The USB service connector found on the module serves for diagnostics and eventual firmware upgrade or in-call volume adjusting.

4 Volume adjusting application

The module's USB storage contains a volume adjusting application (Volsetter.exe), which can be used to adjust the in-call volume levels, if necessary and justified. Adjusting may be necessary if voice quality or volume problem is experienced while using the module with the given GSM service provider's SIM card. The module can be connected to a PC using USB A-B cable.
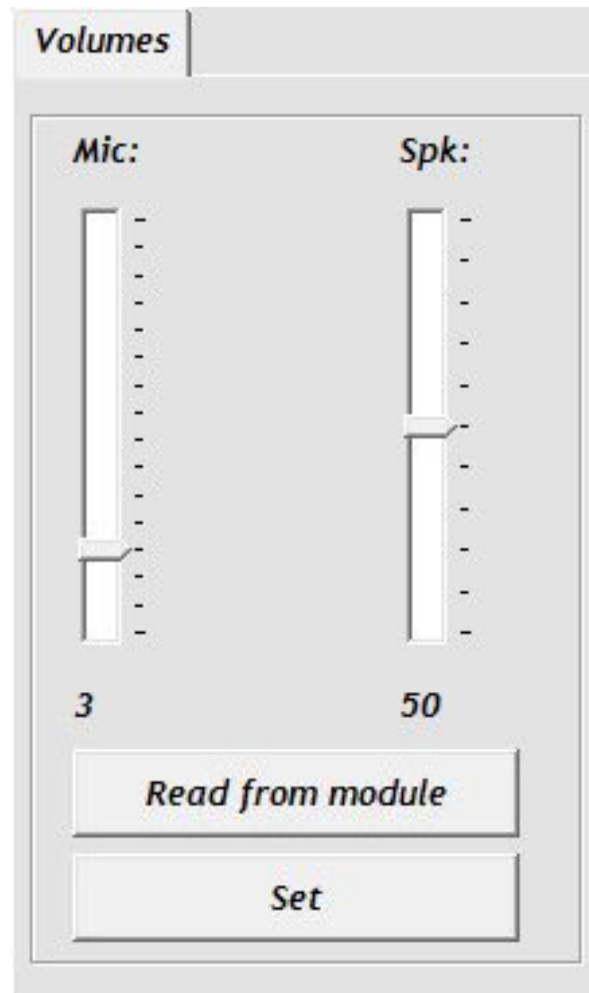

Using the software:

- Copy the software form the module's USB storage to PC, then start it.
- Connect the module to USB. The software connects to the module automatically, then "**Read**" and "**Set**" buttons become available.
- Read the actual settings from the module by pressing "**Read from module**" button.
- **Mic** volume: microphone volume (outgoing Contact-ID).
- **Spk** volume: speaker volume (incoming HSK/ACK).
- Set the desired volume level, then write the settings to the module by pressing "**Set**" button.
  Attention! Even minor level modifications cause significant changes in the in-call volume!
- The new settings are applied after writing in the very next voice call.

5 LED signals

Green blinks slowly, Red is not lit	GSM OK
Green is continuously lit	GSM reporting in progress
Red blinks slowly	Startup in progress
Red is continuously lit	Trouble

6 Wiring diagram
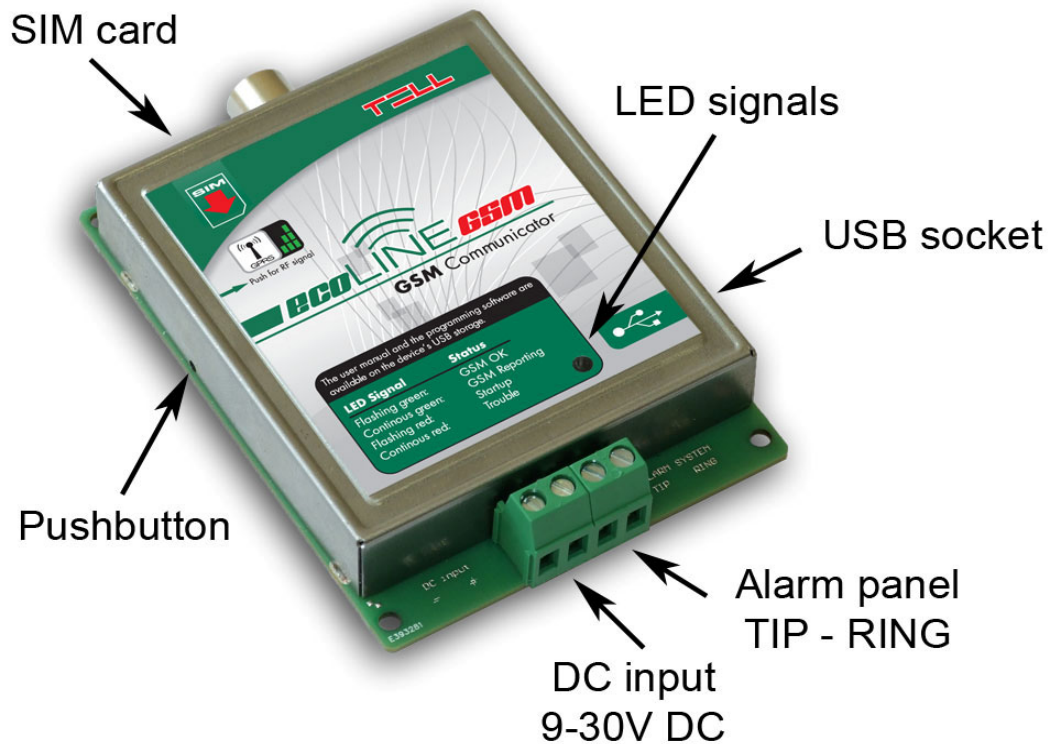
7 Installation guide

7.1 Mounting

- Test the GSM signal strength with your mobile phone. It may happen that the signal strength is not sufficient in the desired mounting place. In this case the planned installation place can be changed before mounting the device.
- Do not mount the unit in places where it can be affected by strong electromagnetic disturbances (e.g. in the vicinity of electric motors, etc.).
- Do not mount the unit in wet places or places with high degree of humidity.
- Connecting the GSM antenna: the GSM antenna can be fixed in the FME-M socket found on the panel. The antenna supplied with the module provides good transmission under normal reception circumstances. In case of occasionally occurring signal strength problems or/and wave interference (fading), use another (directed) type of antenna or find a more suitable place for the module.

7.2 Putting into operation

- Disable PIN code request, voicemail and notification in SMS about missed calls on the SIM card placed into the module.
- Enable caller ID sending service on the SIM card at the GSM service provider.
- Insert the SIM card as shown in the wiring diagram and push it into the socket until it clicks. If you wish to remove the SIM card, press it again on the part which is outside of the socket.
- Check the antenna to be fixed properly to the ecoLINE module.
- Check the wires to be connected as shown in the wiring diagram.
- The device can be powered up. Make sure that the power supply is sufficient for the load of the module. The quiescent current of the module is 110mA, however it may increase up to 400mA during communication.

8 Technical details

8.1 Technical specification

Supply voltage:	9-30VDC
Nominal current consumption:	110mA @ 12VDC, 60mA @ 24VDC
Maximum current consumption:	400mA @ 12VDC, 200mA @ 24VDC
Operating temperature:	-20ºC - +70ºC
Transmission frequency:	GSM 900/1800, 850/1900 MHz
GSM phone type:	Simcom SIM900
Dimensions:	100 x 70 x 19mm
Weight:	80g (packed: 100g)

8.2 Generated phone line specification

Line voltage:	48 V
Line current:	25 mA
Line impedance:	600 Ohm
Ringing voltage:	±72V (25 Hz)
Dial tone:	400 Hz

8.3 Contents of the package

- ecoLINE module
- GSM 900MHz / 1800MHz antenna
- Plastic spacer support / snap fasteners
- Application manual, warranty card