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CMGSM (2006)
version 01.00

User's manual

Version 1.00g

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Content

CMGSM version 1.0, User's manual, version 1.00f

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Basic Characteristics

Introduction - Basic Features and principles of operation

Figure 1 – CMGSM

CMGSM is the communication module for FATEK PLC systems using GSM net to transfer the data. **TC-65** JAVA OPEN CODE SIEMENS GSM module **900/1800/1900 MHz** is used. With the same HW and SW, there are four different ways of operation available:

- **monitoring and remote control by SMS. CMGS** reads PLC registers to generate status or event outgoing SMS and writes other registers according to the content of incoming SMS. In **SMS mode** module can work with logical inputs X and outputs Y of the PLC system and with any PLC element (M, R, D etc.). The I/O number is limited only by FBs serie PLC capacity that is 255 logical inputs and 255 logical outputs.

- **dial up data transfer via GSM net** is the second way of communication with PLC via CMGSM. The connection can be only incoming for CMGSM, that might be initiated from a control center after the event SMS for the purpose of remote system analysis and PLC software tuning and modification.

- **GPRS data connection** The third and fourth way of GSM net communication is using TCP/IP protocol. The only difference is the way of opening the connection. CMGSM opening the connection in **GPRS client mode** can use any SIM card, that can provide internet connection. Connection command with TCP/IP destination data is sent by SMS to CMGSM, that will open the connection to a public and fixed IP address, that must be available on the computer, where GMSM is making the connection. **GPRS server mode** connects CMGSM to internet like a server with public and fixed IP address, special SIM card required for CMGSM in this mode. Any computer connected to internet can open the TCP/IP connection with CMGSM fixed IP address, but only one client can be connected any time. .

Highlights

- Four ways of GSM net data communication
- WinProlad remote GSM data transfer connection
- USB port for module configuration, monitoring and local WinProlad use
- Li-Ion 600mAh battery - 24 hours of no power operation
- Lowest level super watchdog function (HW PWR OFF)
- Additional 3 hardware PLC independent 24V logical inputs/outputs available
- Can be used directly with FBs-xxMC (P3) or via CA with FBs-xxMA (P2)
- Basic function of the module in SMS mode is completely PLC program independent
- SMS outgoing messages generated from any PLC register status – monitoring of whole system
- Incoming SMS can modify any PLC register – remote control function – set parameters via SMS
- Extended functionality requires PLC program interaction (fast changes latching)
- One CMGSM can work for network of PLC units, inputs and outputs can be placed at different places

- Unlimited number of logical and analog inputs and outputs can work with one CMGSM (PLC network)

Specification

Mechanical dimension: 25x70x93 mm

- Plastic case: similar to FBs-CMxx
- Fixing: DIN rail or flat panel screw fixing
- Power : from 5V power supply of PLC main unit (or from USB for configuration)
- Backup power: 3,7V 600mAh internal Li-Ion battery
- Inputs/ Outputs: total 3, function SW selectable
- HW log. Inputs: 12-30V 10mA DC insulated
- HW log. Outputs: max. 60V 100mA insulated
- Temperature range: from -20°C to +50°C
- GSM RF power: 2W max., aerial 50 Ohm, SMA con.

Typical use

- all FATEK FBs control systems that should be monitored or remote controlled via GSM net
- for GSM monitoring and remote control with high number logical or analog inputs/ outputs
- for GSM monitoring and remote control if inputs and outputs are spread in large space using PLC network

OVERVIEW – GSM NET DATA COMMUNICATION MODES

FBs-CMGSM provides up to four ways of GSM net communication with FATEK PLC:

Monitoring and remote control of a PLC controlled system by SMS – method 1

CMGSM added to PLC enables monitoring and remote control of the system by SMS sent among CMGSM, supervisor PC and mobile phones of system owners or system maintenance personal. CMGSM is independent on PLC program, it behaves like master in communication with PLC and reads PLC registers to generate status or event outgoing SMS and writes other PLC registers according to the content of incoming SMS. If short and fast changes of PLC elements should be monitored, these must be latched in PLC registers first and later read by CMGSM, that reads the PLC elements only each several seconds. **CMGS** In **SMS mode** module can work with logical inputs X and outputs Y of the PLC system and with any PLC element (M, R, D etc.). The I/O number is limited only by FBs serie PLC capacity that is 255 logical inputs and 255 logical outputs.

So typical system will have CMGSM connected to one PLC main unit, which can be expanded with one or more I/O expansion units to required number of logical and analog inputs and logical outputs. For basic use of CMGSM the PLC system is used only like input/output interface without any PLC program, but it is of course possible to use PLC program for control of the system without any limitation including PLC main units networking CMGSM has additional PLC independent 3 HW logical inputs/outputs terminals for 24V logical signals, that work also from 600mAh internal Li-Ion battery. after PLC power failure. All the PLC elements and HW inputs/outputs of CMGSM can be accessed directly under their own names in PLC or CMGSM (X22, M105, H2 – hardware i/o signal of CMGSM) with GET or SET command, that are independent on CMGSM configuration and they can be used for communication of PLC controlled system with a central PC communicating with more such systems. All the PLC elements and HW inputs/outputs of CMGSM can be accessed and monitored also under symbolical names / DOOR, BOILER, HEATING, AIRCONDITIONER etc. /, that are assigned to PLC elements or CMGSM i/o signals in CMGSM configuration data. Also each logical status of a variable element can have symbolical name, e.g. for DOOR element logical zero can be named „CLOSED" and logical one "OPENED". This is useful, if system status message is received on the display of a mobile phone, because the message can be full sentence understandable to anybody like "DOOR OPENED, BOILER OVERHEATED, AIRCONDITIONER O.K. etc.

Practical use of CMGSM in SMS mode is for instant monitoring of control systems with FATEK PLC or like additional GSM remote control and monitoring system with many inputs and outputs for large systems e.g. big house with many flats, where each user can control and monitor his flat by SMS / switching ON/OFF home heating system and monitoring input information like "Door Open"/

GSM-Datacall – dial up connection – method 2

CMGSM added to PLC acts as a GSM modem, that will automatically receive incoming data call and connect the serial port of PLC to the port of a modem initiating the connection (e.g. GSM modem connected to PC). The connection can be only incoming for CMGSM, that might be initiated from a control center after the event SMS for the purpose of remote system analysis and PLC software tuning and modification. For managing the PLC via GSM net might be used Winprolad or any other SW communicating with Fatek PLC. The delay in GSM net is CONSIDERABLY HIGHER, than with line modem, it takes 0.5 …1 sec to get data block to PLC and back. CMGSM works like an infinitely long serial channel "cable".

GPRS data connection TCP-Server – method 3

GSM-GPRS TCP-Server full access from WinProllader or user communication program.

Public, fixed IP address of CMGSM required (special SIM card from GSM provider)

GPRS data connection TCP-Client – method 4

GSM-GPRS TCP-Client full access from WinProllader or any user communication program.

Public IP address required at PC initiating the connection (server on internet)

The third and fourth way of GSM net communication is using TCP/IP protocol. The only difference is the way of opening the connection. CMGSM opening the connection in **GPRS client mode** can use any SIM card that can provide internet connection. Connection command with TCP/IP destination data is sent by SMS to CMGSM that will open the connection to a public and fixed IP address that must be available on the computer, where GMSM is making the connection. **GPRS server mode** connects CMGSM to internet like a server with public and fixed IP address, special SIM card required for CMGSM in this mode. Any computer connected to internet can open the TCP/IP connection with CMGSM fixed IP address, but only one client can be connected any time.
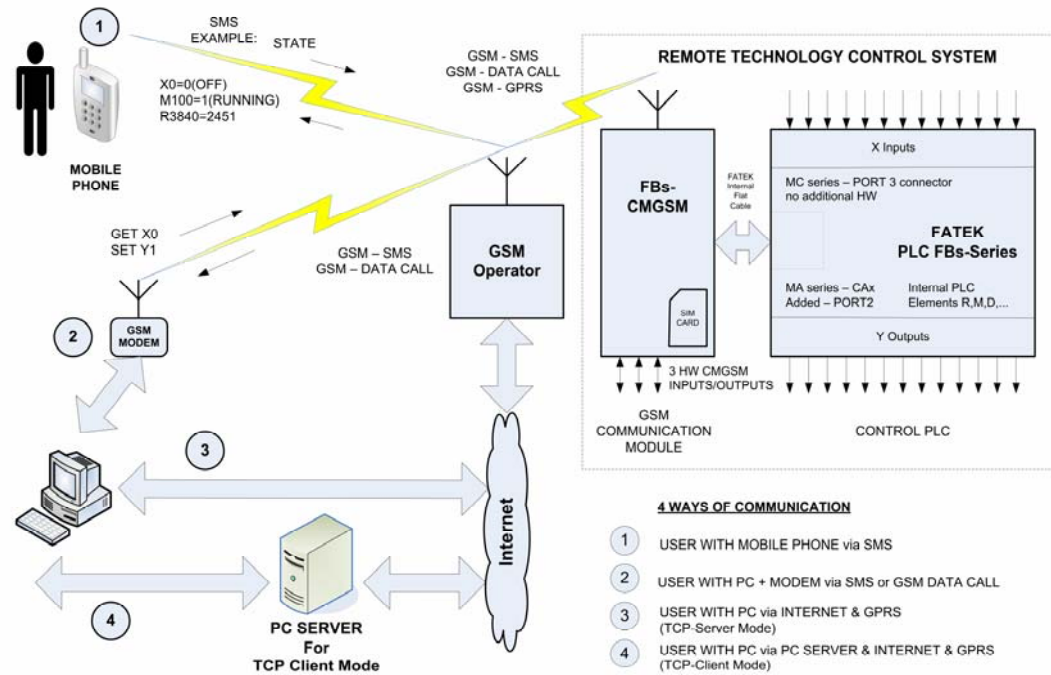

Figure 2 – PLC and CMGSM communication structure

BASIC INSTALLATION

First Steps

FBs-CMGSM comes preconfigured for a simple example application from a manufacturer. The only step the user has to do is to set his mobile **phone number** parameter in CMGSM parameter list. This can be done using configuration software "POSEIDON" which is available on a CD (see section: The configuration sw. "POSEIDON" - Installation guide)

- Prepare proper SIM card and insert it to CMGSM.
- Install USB driver for FTDI on your PC (from CD)
- Connect USB A-B cable to CMGSM.
- Install the "POSEIDON" configuration software on your PC.
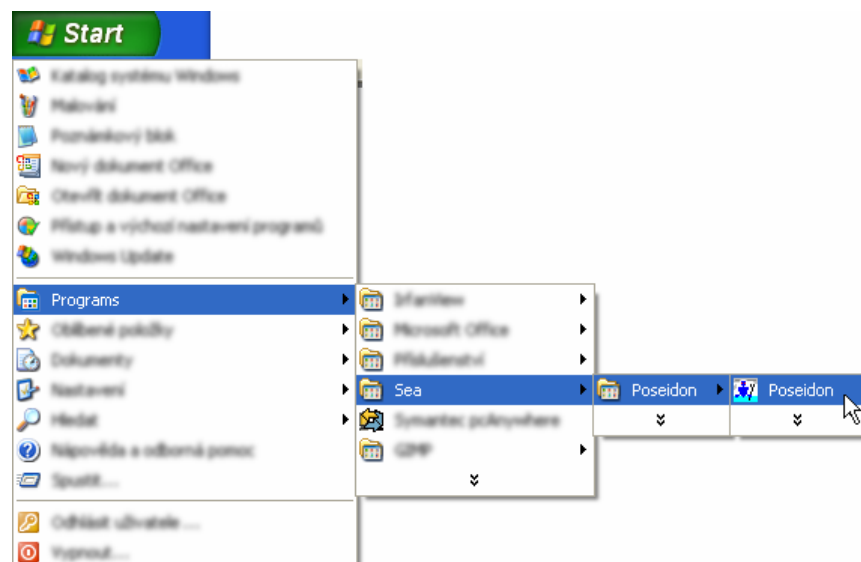- Run the Configuration program "POSEIDON".

First Configuration

Figure 3 – Start menu

To run the CMGSM configuration program "POSEIDON" Click:

START ⇨ Programs ⇨ Sea ⇨ Poseidon ⇨ Poseidon

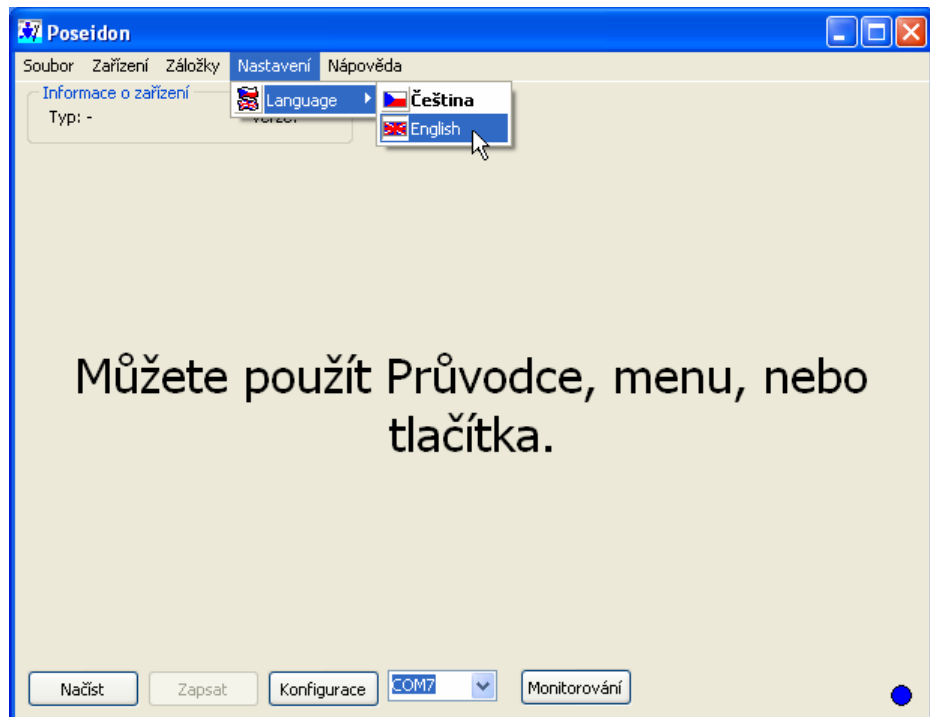To Select English Language in configuration program:

Figure 4 – Language selection
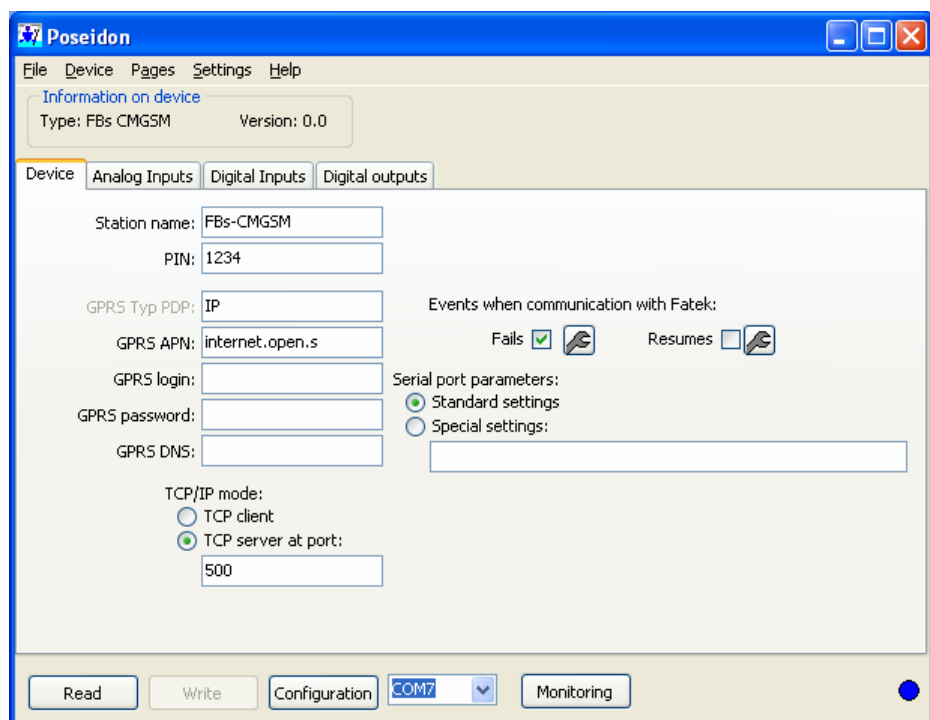
Click MENU-> Nastaveni -> Language-> English

Figure 5 – After language selection

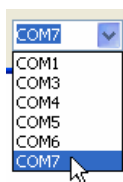Select proper serial Com (in bottom part of main window)

Figure 6 – Selection of COM port

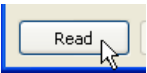Click "Read" to read Configuration parameters from a CMGSM.
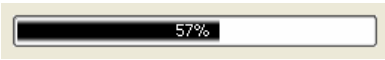

Figure 7 – Read configuration

Figure 8 – Wait progress bar

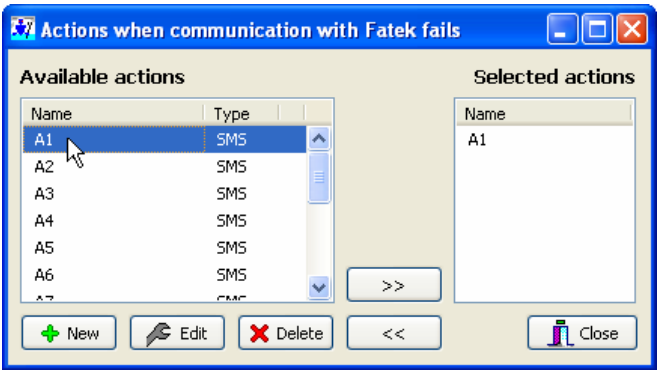Wait ...

Figure 9 – Property symbol

Click on any property symbol

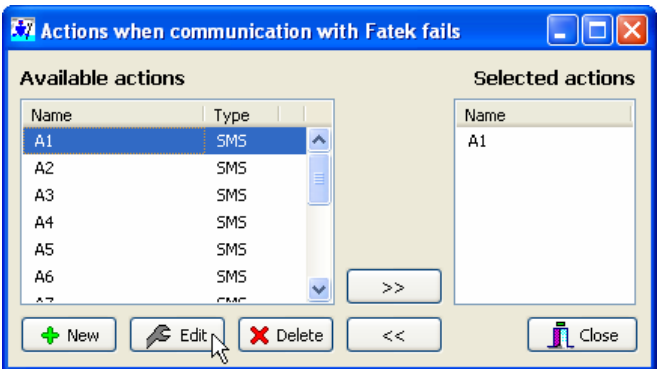**Figure 10 –**

Click on A1.
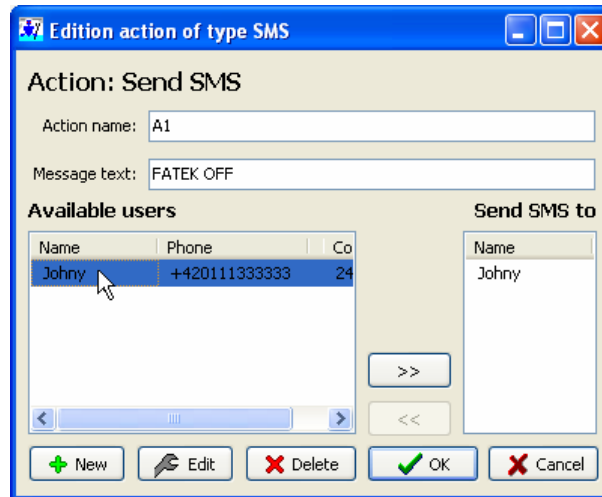

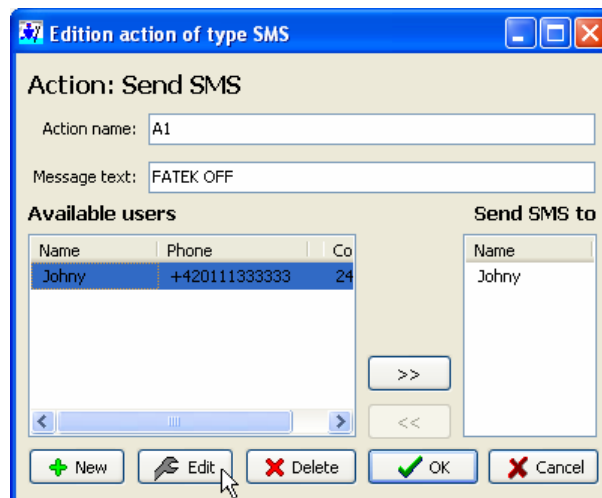**Figure 11 –**

Click Edit

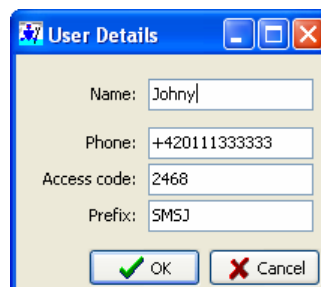**Figure 12 –**

Click on the name.

Figure 13 –
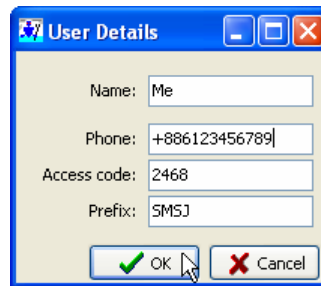
Click "Edit".

Figure 14 –

Change Name and Phone:

Figure 15 –
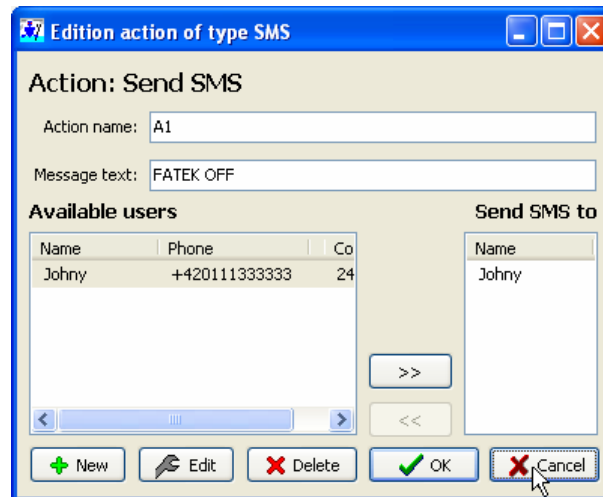
Click "OK",
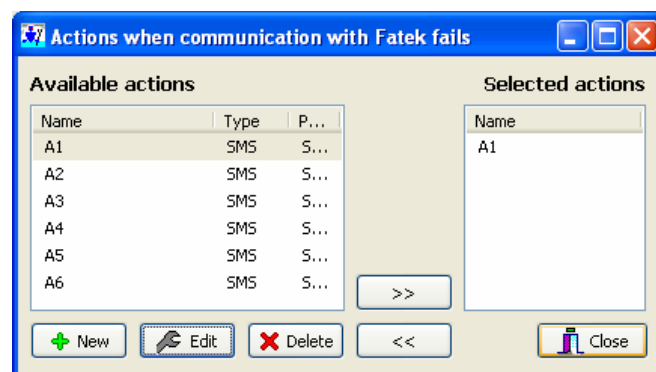

Figure 16 –

Click "Cancel",

Figure 17 –

Click "Close",
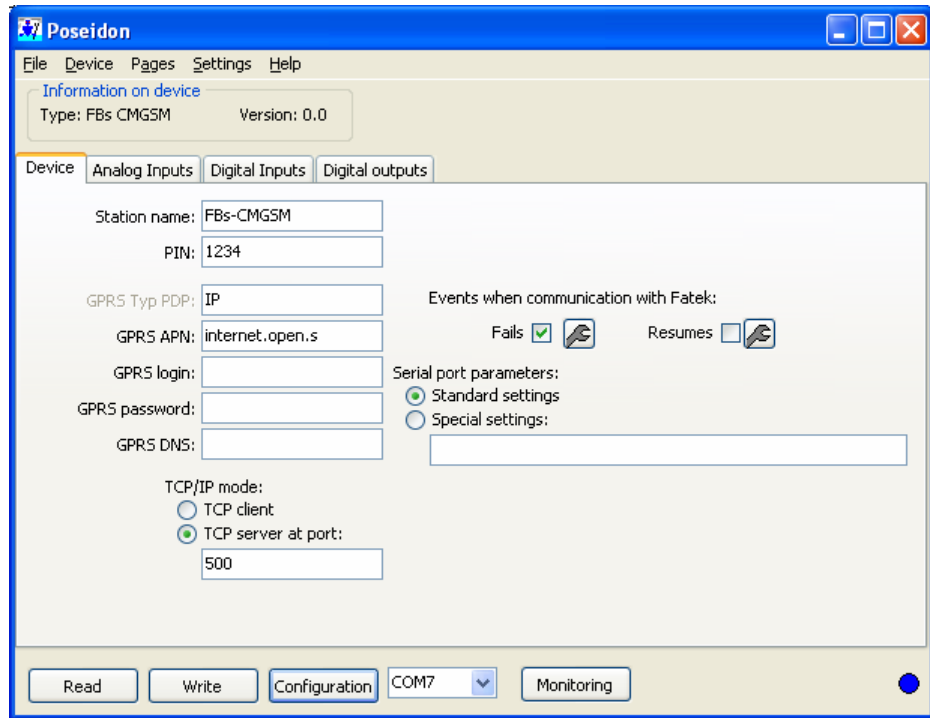
Figure 18 –

Click "Write" (to write Configuration to CMGSM).

COMMAND SMS MESSAGES

Structure of messages

Device is controlled using SMS messages via GSM network. Command messages must look like follows:

```
#<ACCESS_CODE> <COMMAND>
```

Example:

```
#1234 GET X0000
```

ACCESS_CODE

Access code is a main security item. Access code is string of numerals. The command message must begin with valid access code, which is located after the first "#" character, otherwise the command message is ignored. It means anybody who knows access code can send valid command message. Access code is possible to set in a CMGSM configuration and may be different for each user.

DELIMITER

Available delimiters are:

- space
- ;
- :
- =
- ,

COMMAND

See next chapter.

Commands

Command specifies requested action. See the following table for command syntax. Command is not case sensitive.

Command	Meaning
GET <ELEMENT>	PLC element inquiry
SET <ELEMENT> <VALUE>	PLC element settings
STATE	All configured elements inquiry
PULSE <ELEMENT>	Pulse. Pulse duration is given by a configuration of an output Y register. Default value is approximately 5s.

Available PLC Registry (elements) table:

Figure 19 – PLC elements table

Responses

FBs-CMGSM response on a valid command SMS as follows:

```
<Prefix><Station name>: <ELEMENT OF COMMAND>=<VALUE>[(STATE)] …
```

Prefix

Prefix is sent only if specified in configuration

Station name

Station name depends on configuration.

Element of command

Element in command SMS.

Value

Element value in command SMS.

State

If an element is specified in configuration it's zadán v konfiguraci bude v odpovědi podle hodnoty elementu uveden i stav.```

Examples

All following examples are based on CMGSM Default (Factory) configuration.

Configuration summary:

- Station name = FBs-CMGSM
- Access code = 1234

Register	Name	State L	State M	State H	Level LM	Level MH
X0000	Switch	OFF		ON	0	1
H0	HWin	PASIVE		ACTIVE	0	1
R03840	Voltage	low	O.K.	high	1000	1500
Y0001	PLC-Y1	off		on	0	1

Command SMS message	Response SMS message
`#1234 GET X0000`	`FBs-CMGSM: X0000=0(OFF)`
`#1234 SET Y0004=0`	`FBs-CMGSM: Y0004=0`
`#1234 SET PLC-Y1=1`	`FBs-CMGSM: PLC-Y1=1(on)`
`#1234 SET M0010=1`	`FBs-CMGSM: M0010=1`
`#1234 SET H1 1`	`FBs-CMGSM: H1=1`
`#3456 SET Y0000 0`	
`#1234 SET Y0:0 GET X0000`	`FBs-CMGSM: Y0=0 X0000=0(OFF)`
`#1234 SET Z0000 1 GET X0`	`FBs-CMGSM: Z0000=Err.00 X0=0(OFF)`
`any text #1234 GET Y0`	`FBs-CMGSM: Y0=0(OFF)`
`#1234 state`	`FBs-CMGSM: VOLTAGE=1880(high) SWITCH=0(OFF) HWIN=0(PASIVE) PLC-Y1=1(on)`
`#1234 pulse PLCY`	`FBs-CMGSM: PLCY=L->H`

"POSEIDON" - THE CONFIGURATION SOFTWARE - INSTALLATION GUIDE

Insert CD or contact a manufacturer for a latest software version (obchod@seapraha.cz). Find the file like *Poseidon_setup_0-9-8-1.exe* and click on it with a mouse. Sorry, our company installer of PC software is not available in English, so the installation screen is in Czech language…..
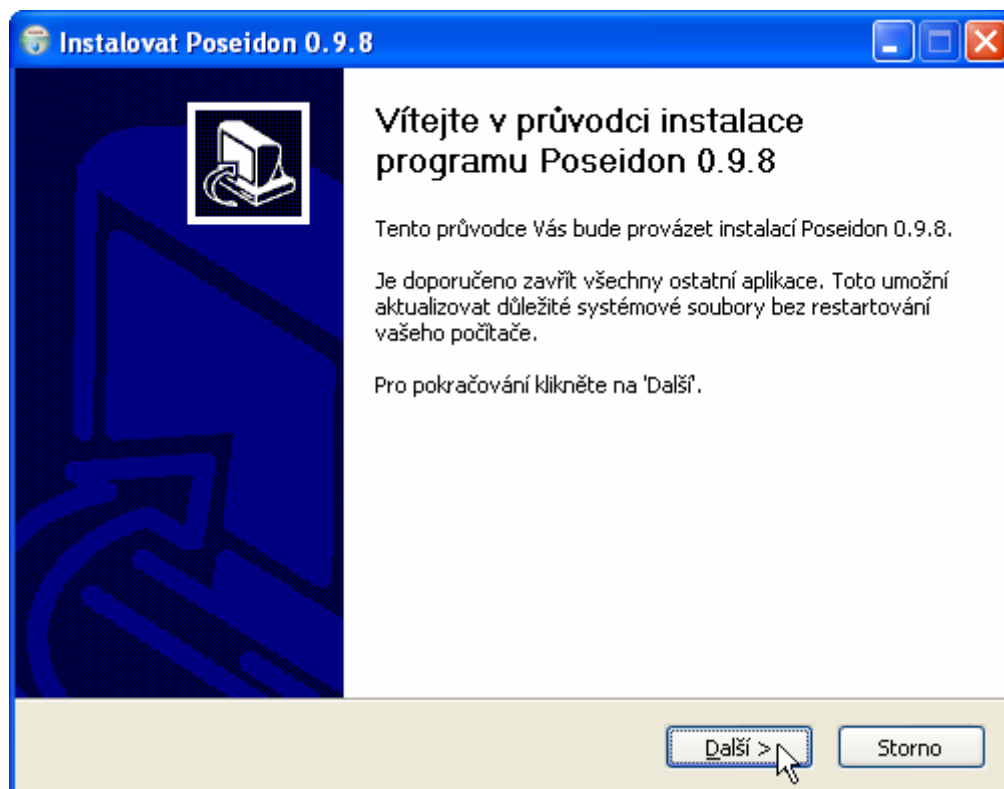
Click "Dalsi" to continue.
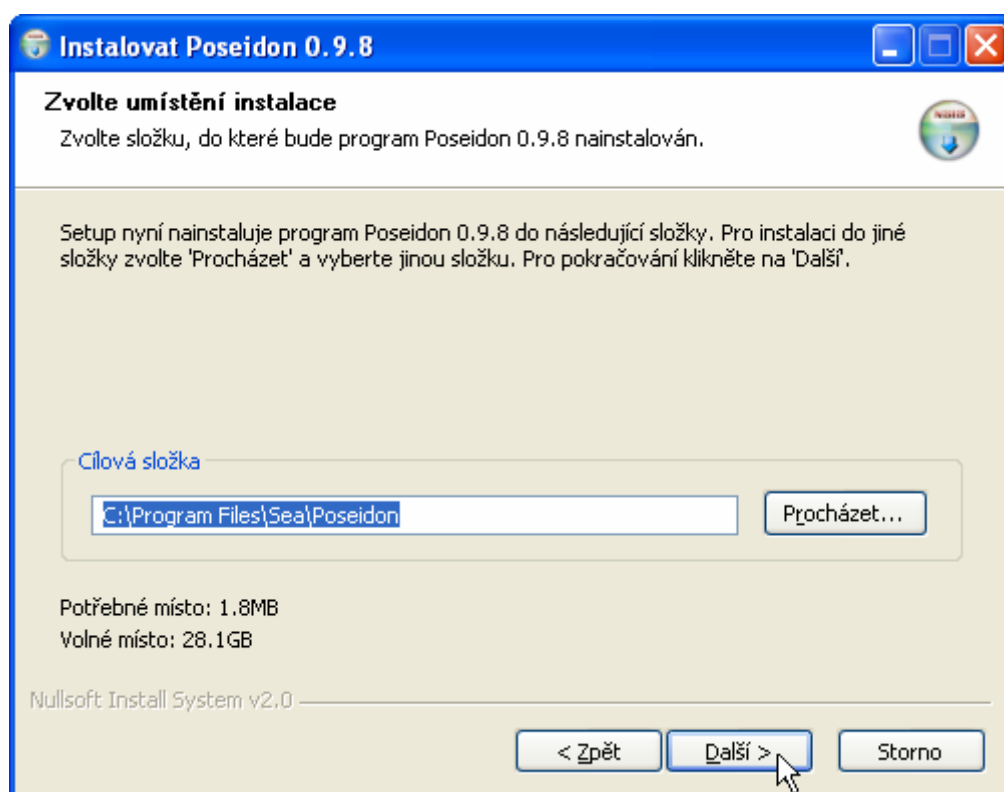
Click "Dalsi" to continue.
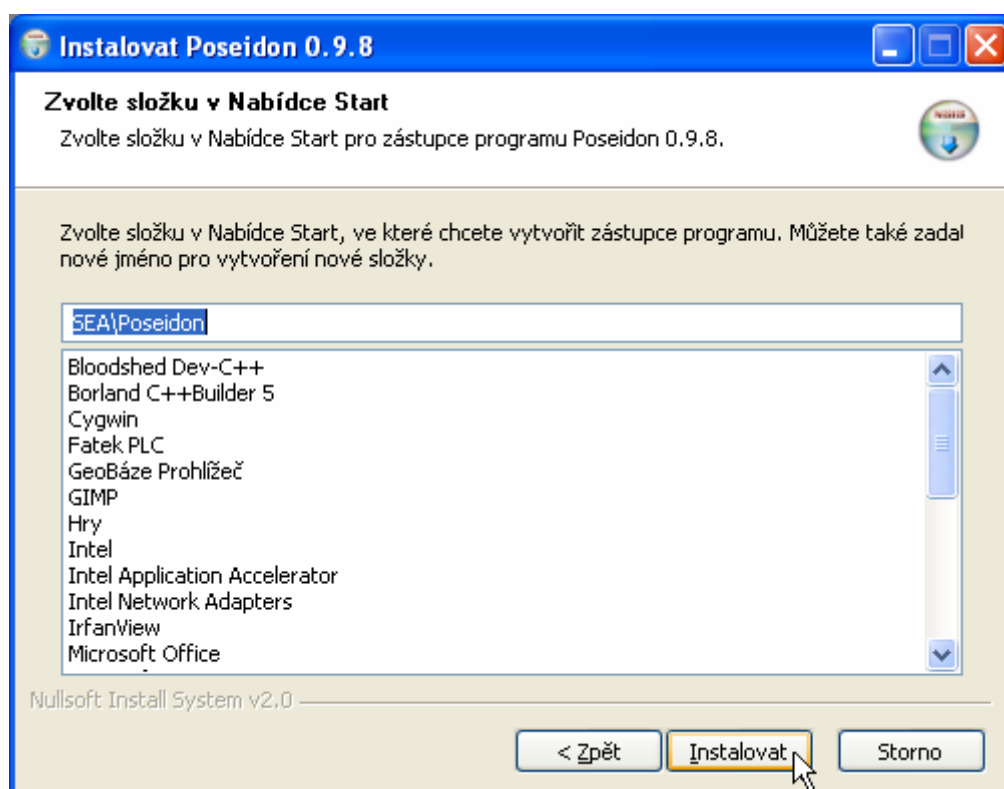
Click "Instalovat" to continue.

Installation in progress: Wait ....

Click "Dokoncit" to finish installation.

To run the CMGSM configuration program "POSEIDON" Click:
START --> Programs --> Sea --> Poseidon --> Poseidon

CMGSM – Troubleshooting

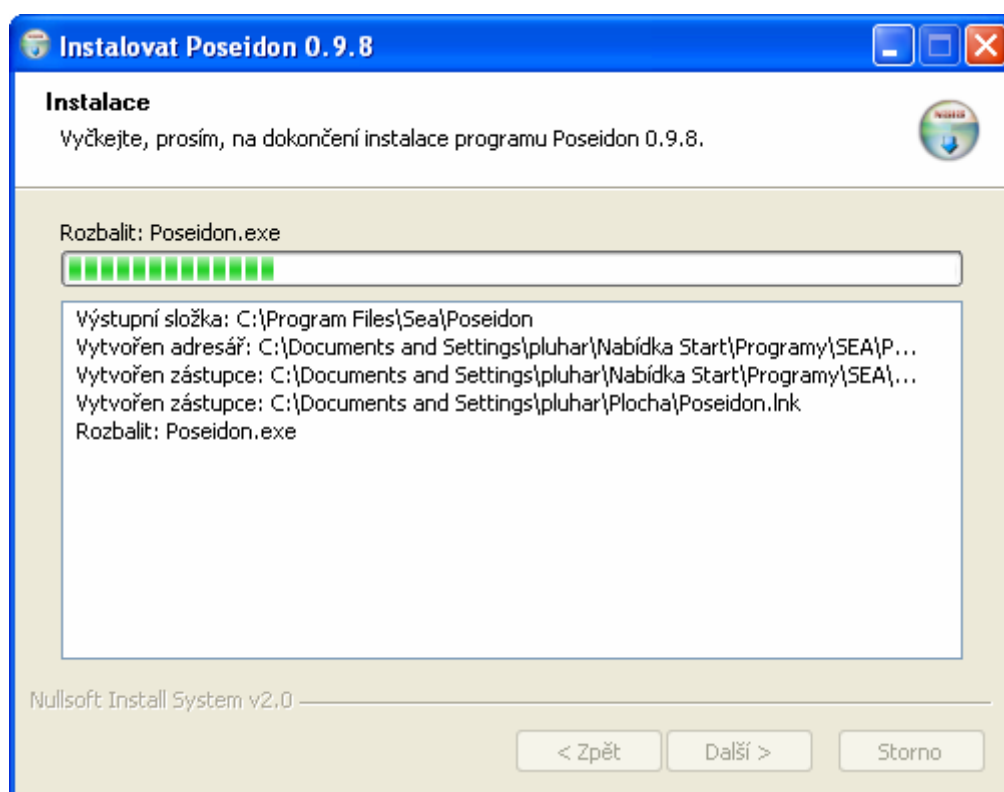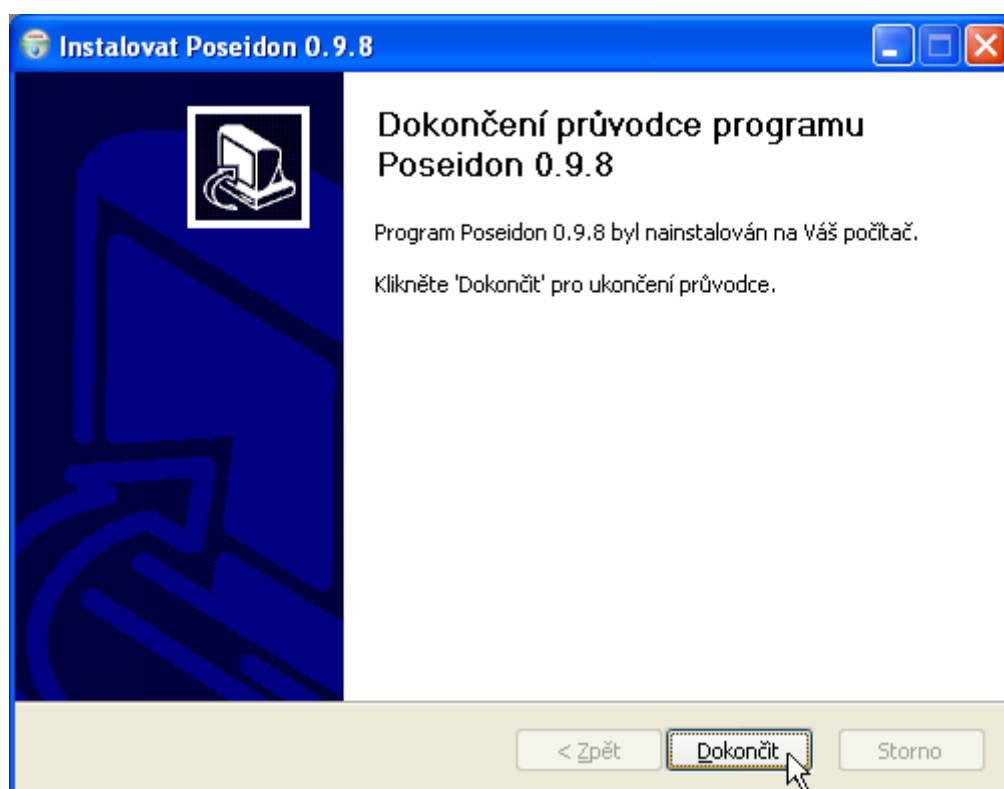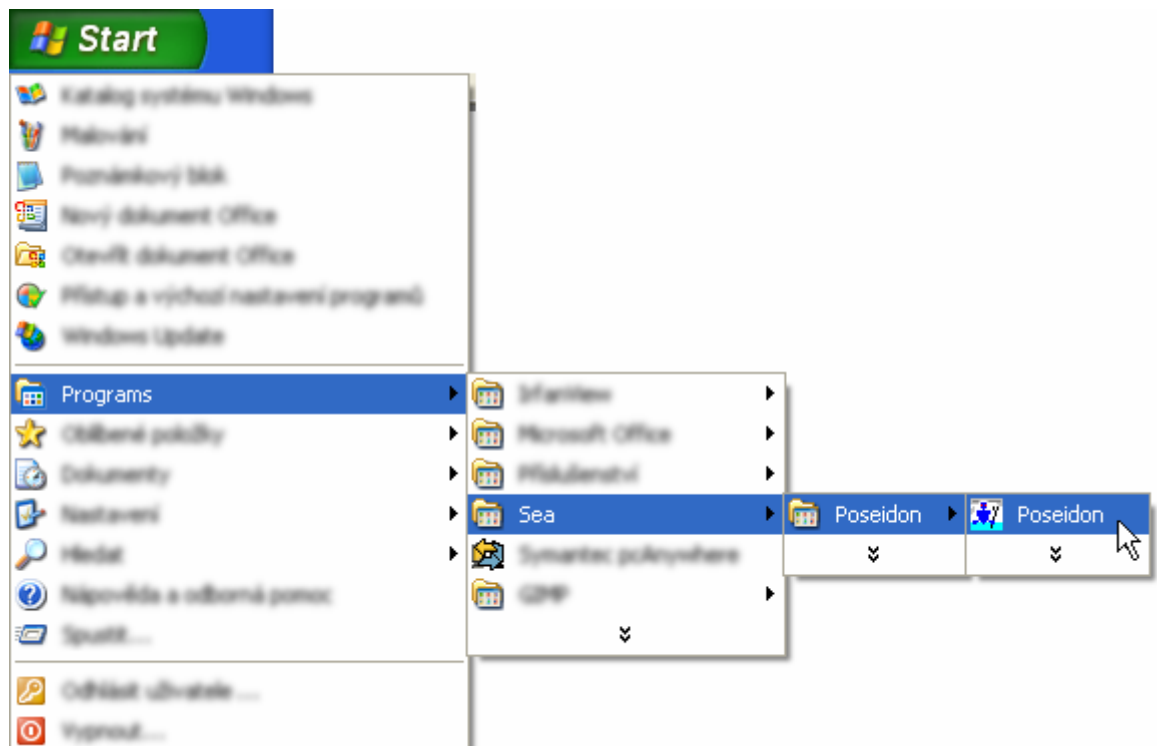| Problem	Possible reason	Solution
Unable to connect from configuration program "POSEIDON" to CMGSM (locally via USB cable)	Wrong COMx port number	Make sure you've set correct COMx port number in the configuration program "POSEIDON". (Especially when using some USB->COM adapters on Your PC)
It's not possible to make GPRS connection to CMGSM (Never worked before)	Wrong CMGSM configuration (bad GPRS connection parameters)	Check the configuration parameters concerning GPRS connection. (Program "POSEIDON"). Eventually contact your GSM Operator for a proper GPRS parameter setting.
Unable to connect from WinProladder to CMGSM with connected PLC FATEK using TCP connection. (CMGSM operates like TCP-Server via GPRS)	Possible connection problem caused by network firewall (either on a local computer software firewall or by a firm firewall)	Try connection on TCP port 80, which is usually not blocked by firewall
Problems with TCP connection (the connection disconnects after a short time)	Bad TCP connection	Set WinProladder parameters "CommTimeOut" and "Retry" to maximum.
After a sudden disconnection of GPRS connection it's not possible to connect again.	This concerns CMGSM when operates like TCP-Server. CMGSM tests the connection. If there are no data within one minute, CMGSM ends the connection. CMGSM is then ready for the next TCP connection after approximately two minutes.	Wait two minutes before the next connection.
It's not possible to make GPRS connection to CMGSM (Already worked before)	The SIM card has been changed - another GSM operator - another tariff / prepaid SIM card	Check the configuration parameters concerning GPRS connection. (Program "POSEIDON"). Eventually contact Your GSM Operator for proper GPRS parameters setting.
It's not possible to read/write configuration from/to CMGSM	Wrong setting of S1, S2 switches on CMGSM	Please check the setting of S1, S2 switches on the CMGSM front panel

CMGSM - How To?

Q: How to configure CMGSM HW signal as an output?
A: HW signal is configured as an output automatically whenever it is not configured as an input. These outputs are assigned as H0, H1, H2 in SMS commands.

Q: How to assign user's name to HW outputs (when using "POSEIDON" configuration program)?
A: It's not possible to assign user's name to HW outputs at all. These outputs are named H0, H1, H2 in SMS commands.

Q: When using GPRS connection: What is the difference between TCP-Server and TCP-Client? Is there a different software in CMGSM?
A: Software and hardware for TCP-Server and TCP-Client are identical. The only difference is in a CMGSM parameter setting and mode of operation (see the connection diagram).

Important recommendation:
Before testing of CMGSM, please, check the SIM card price features (especially the price per kByte in GPRS connection) to avoid unpleasant surprise in an invoice. One of the best solutions is a prepaid SIM card with an unlimited GPRS data for a fix price.

Technical specifications

Parameter		Symbol	Conditions	Minimum	Typical	Maximum.	Unit
Dimensions	Width	w			25		mm
	Height (w/o the antenna)	h			70		mm
	Depth	d			93		mm
Power Supply		5V max.300mA from PLC or from USB.					
Backup Power Supply	Type	-		Li-Ion battery			
	Voltage	V_{BCKP}			3.7		V
	Capacity	-			600		mAh
Temperature	Storage	t_{STG}		-40		+60	°C
	Operation	t_A		-20		+50	°C
GSM	GSM module			Siemens TC45			-
	Transport service			GPRS			-
	Type			GSM900 GSM1800			-
	Antenna impedance	Z_A			50		Ω
	Output power	P				2	W
	Antenna connector			SMA			

Contents of the delivery

The delivery of the CMGSM contains the following components:

- **1 pc CMGSM device**,

- 1 pc USB A-B cable for device configuration,

- 1 pc configuration software CD (containts documentation and USB drivers),

- printed documentation

Optionally can be ordered:

- cable for JAVA software upgrade and TC 45 module firmware upgrade

- CA xx communication adapter for CMGSM for FBs xx MA units: CA0 without connector for communication port 1, CA2 with RS232 connector at communication port 1, CA5 with RS485 at communication port 1, CA25 with ORed RS232 and RS485 at communication port 1.

Theory of operation

SIM card for CMGSM

The GSM net widely used for making phone calls with mobile phones provides also option of internet connection used usually for notebooks and other computers. Normal SIM card providing option of GPRS connection to internet via mobile phone or GSM modem uses dynamical IP address, that makes possible to get internet at a notebook computer but it cannot be used for remote PLC connection using the data transfer protocol TCP or UDP. The function of TCP is dependent on the knowledge of IP address of the station, that should be connected from the computer, that means CMGSM IP address on the internet. If the address is assigned dynamically, it can be different after each restart of the module and so you cannot use this address like destination address for communication program to make a connection to PLC. It is the same situation like with a modem with PLC, the phone number of which is not known… you cannot connect to such modem and PLC. It is why the **SIM card for CMGSM must be special one WITH FIXED IP ADDRESS** and normal SIM card for Internet connection cannot work in CMGSM. The same requirements are there for UDP protocol, where both IP addresses connected together must be public IP addresses without any "port" numbers.

GPRS operation

After CMGSM is on power it switches on the GSM module TC45 inside, that starts JAVA program inside. Java program reads the PIN from configuration file, input AT command with PIN and the module is logged on GSM net / like mobile phone after switch ON /. Then after the module is logged on the net Java program sent at command to make GPRS connection to internet and starts TCP server, that are waiting for a client connection request. **Only one client can be connected to CMGSM TCP server !!!** The other connection requests are not refused but you cannot get any data transfer – Telnet connection can be established even after one client is connected, but no data will come from CMGSM. **When the connection is closed, it takes about 20 seconds, till the module is ready to connect again** – this is the feature of Java TCP server implementation and it cannot be influenced by Java program itself. This can make problem for some PLC communication software, like OPC servers, that normally open TCP connection, transfer data and close connection for each PLC scan. This standard way can be used with CMGSM only, if the scan time is not less than 30 seconds, otherwise there will be not enough time for TCP server to close the connection and be able to reopen it for next data scan. For the case there is a need to make remote reset CMGSM, this can be done by calling the telephone number of CMGSM SIM card. The call will be refused and CMGSM will reset completely and will again log to GSM network and connect to internet by GPRS and will be waiting for a client asking for TCP connection…

The behavior of the call made to the SIM CARD of CMGSM depend on the device status and may be different for different GSM providers. With EUROTEL – CZ it was possible to make successful call and reset only, when there was no client connected to the TCP server of Java GSM module. If there was a connection / WinProlad to PLC /, the number was announced like not reachable and so remote reset was not possible.

For future SW version there is a plan to delay starting GPRS reconnection after CALL reset about 3..5 minutes to get chance to make data call to CMGS and connect with PLC via data call if TCP – GPRS connection is not working / e.g. internet connection firewall problem /.

GPRS activity monitoring for debugging purposes

Java program, that starts automatically in GSM module after Power ON or after RESET, sends out messages about its current activity and data processed. These messages can be monitored using Posseidon SW / the same SW like for CMGSM configuration /. The massages from Java program can be displayed in terminal window on computer screen and all the messages captured during monitoring session can be saved like text file and send to CMGSM SW making people to analyze it and give proper advice to the user of CMGSM to make the device working correctly. Perform following steps:

- Install USB driver for CP2001 Silicon Labs USB chip
- Install Posseidon software and run it
- Click "Device Monitoring" and "Next" in the Wizard widow
- Select proper Virtual Com Port corresponding to USB link to CMGSM
- Press "Monitoring" button
- Check, if DIP switches are in correct positions and click "OK"
- In the Terminal window you can see debug info lines from Java program

- You can save all the monitoring messages into a file….

Configuration of CMGSM-GPRS

The functions and properties of device behavior are fully user-selectable through a personal computer and the **configuration software Poseidon**, shipped on CD with the standard device.
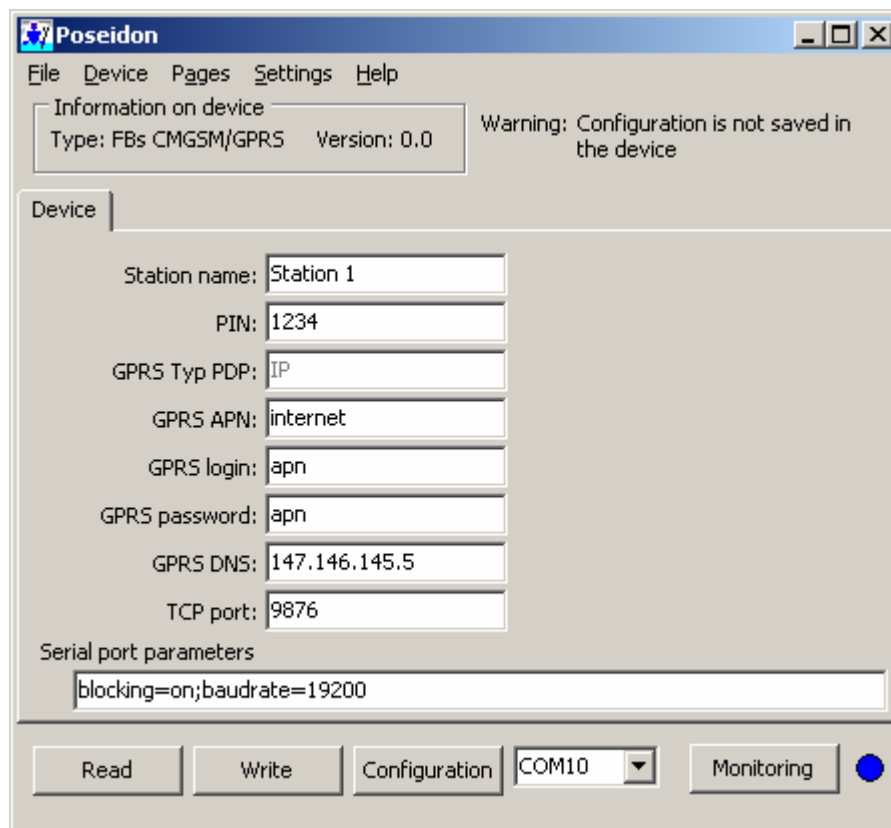
Figure 2 – CMGSM configuration software Poseidon

Usage

This software includes a wizard, which runs when you start the software. Follow instruction in this wizard.

Parameters

Station name	identification of station, only for users. Leave empty if you are not sure.
PIN	PIN code for SIM cars, needed to log on. You **MUST** fill in correct value for SIM card you inserted to device.
GPRS APN	GPRS settings. This value you can obtain from you GSM provider. It is typically "internet". You **MUST** fill in correct value.
GPRS login	GPRS settings. This value you can obtain from you GSM provider. It is typically "apn" or empty. You **MUST** fill in correct value.
GPRS password	GPRS settings. This value you can obtain from you GSM provider. Is is typically "apn" or empty. You **MUST** fill in correct value.
GPRS DNS	GPRS settings. This value you can obtain from you GSM provider. Leave empty if not sure.
TCP port	TCP settings. Fill in the port number you want device to listen on. Fill 500 is not sure.

Serial port parameters   Settings for serial port to PLC. Recommended value is "blocking=on;baudrate=19200". This mean that port will have following settings: *19200 baud, 8 data bits, 1 stop bit, no parity*. You can change baud rate but not count of data bits nor parity.
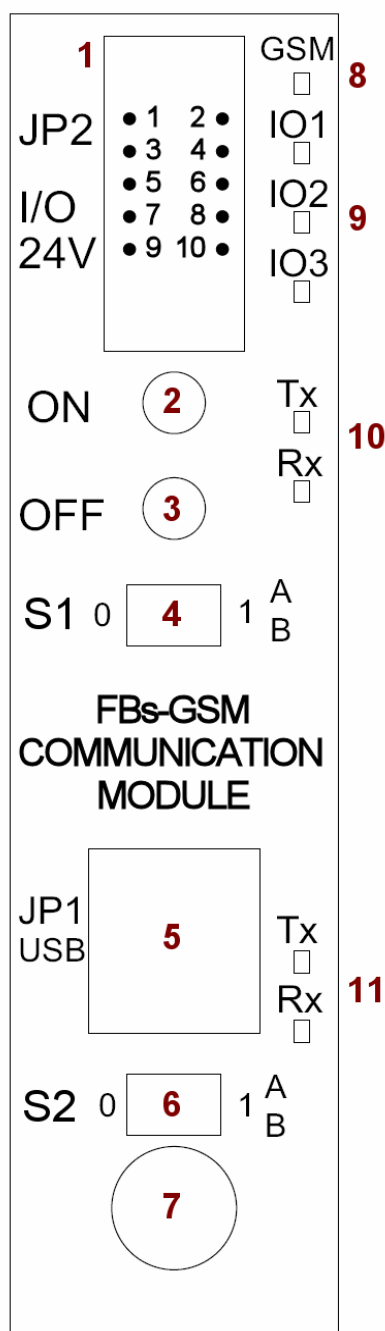
Hardware

Power Supply

Device is supplied from connected FATEK PLC via flat cable (5 V).

Backup Power Supply

Inside device is built-in rechargeable battery, used for supplying device when main power from PLC failed.

Front Panel

JP2 - HW Logical I/O (H0, H1, H2)

1,2 OUTPUT (6 0 (60 V, 100 mA MAX)
3 + INPUT1 1
4 - INPUT1
5 common OUT1, OUT2
6 OUT1
7 OUT2
8 common + INPUT1, INPUT2
9 - INPUT1
10 - INPUT2

S1 - USB Communication Switch

Debug message output
(115 200 baud, 8 bit, 1 stop, no parity,
no hardware handshake)

Device configuration, PLC monitoring
(9600 baud, 7 bit, 1 stop, even parity,
no hardware handshake = FATEK default)

Communication switch controled by
RTS signal on USB port

Do not use!

S2 - TC45 Ignition Switch

Normal position
(automatic ON)

Firmware upload
position

or   Do not use!

Figure 20 – Front panel

1. 10-pin connector for HW (PLC independent) inputs and outputs has no function for CMGSM-GPRS – do not connect.

2. Button for switch on the device from internal Li-Ion battery. Device will start automatically when main power from PLC is present or when USB cable between device and PC is present. User can start device manually with this button, when no PLC or USB power is present.

3. Button for shutting down device working from battery power. If there is either main power from PLC present or USB cable with power, device cannot be switched off. It will

automatically start again after few seconds for security reasons. It can be only reset, kept without power during the time the button is pressed. After releasing it the device will switch on again.

4. A switch for debugging purposes (USB port direction). For configuration the following settings is needed: **S1.A position 1 and S1.B position 0**!

5. USB connector for configuration. May be also used for communication with the PLC via USB.

6. A switch for firmware uploads. (Special Siemens software is needed and special cable is needed.) For configuration or normal function MUST be **S2.A position 0 and S2.B position 1**!

7. FMA Antenna connector – connect GSM aerial

8. Green LED indicating state of GSM modem (1:1 flash means not logged in network /after power ON/, long light with short dark means normal function = the device is logged on network).

9. Indication of state of independent inputs and outputs. Light means active input or output.

10. Indication of traffic on communication line to PLC. Yellow LED Tx will light continuously whenever PLC is on power and CM GSM is temporarily off (i.e. after reset or switch on).

11. Indication of traffic on communication line to USB.

SIM Card insertion or exchange

In order for the device to function properly, a SIM (Subscriber Identification Module) card that allows working in the GSM network is also required. A SIM card can be obtained from the GSM network operator that is selected for the operation of the device.

The SIM card reader is located at the bottom of the plastic box in the place, where the device is fixed to DIN rail. So, for inserting or changing SIM card you must remove the device from DIN rail and disconnect it from PLC unit. Do this only with PLC power OFF!

Use some small screwdriver or some other sharp tool and push the circular pushbutton in the hole besides square shape hole. After pushing the button the SIM card holder goes a little out of the square hole, pull it out, insert SIM card into the holder and push the holder inside of CMGSM.

Guarantee

Warranty for software in GSM device microprocessor and programming PC software

The software in the microprocessors of the offered devices and the programming PC software is offered as is. It was developed by our software experts and carefully tested in our laboratory and in operation by our customers. Despite all this care, the software may reveal errors or problems in relation to a specific property of GSM of given GSM provider at the place of using the device may occur. Should you encounter any such errors, we shall remove these errors for free provided that you deliver the device with detailed error description to our company and then will take the device back. **Our company as the producer SHALL NOT BE LIABLE for any damage, costs or any other detriments** (either expressed or implied) on the user's side or to any other legal or physical persons to whom these errors occurred or might occur. **Our company as the producer SHALL NOT BE LIABLE for any damage, costs or any other detriments** (either expressed or implied) occurred by non-transmitting any SMS message or non-establishing connection with GSM network.

In case of a software error and description thereof delivered to our company, best by e-mail with attached configuration files or recorded messages, we can provide the customer with a new processor with the software or CD with installation of PC software for free. The customer shall replace the processor at his own expense and the customer shall be required to return the original processor at his own expense to our company within 14 days to avoid voiding warranty for the delivered devices.

Until full payment, the delivered device remains the property of SEA s.r.o., which reserves the right, in case of non-payment within 10 days of the first notice, to take the device out of service. In this case, the customer and end user have no right to compensation for any damages or costs occurred and associated with commissioning of the device.

List of Figures

Document History

(CMGSM-GPRS)

18.02.2005 version 0.01	• Creating of the document
04.10.2005 version 1.00	• Changes for GPRS version • Poseidon description

(CMGSM-SMS)

2006-04-26 (V1.00d)	Preliminary version (plu)
2006-05-03 (V1.00g)	GPRS+SMS all in one document (plu)

Errata

-Doplnit, kdy má uživatel po konfiguraci přepnout S1,S2

-Fotografie čelíčka zretušovat S3->S1;S4->S2