

MAGX²

P28 3G/GPRS/GSM Module Installation



Arkon Flow Systems

Nováčkova 11, 614 00 Brno, Czech Republic

Tel. +420 543 214 822

Enquiries/ Orders/ General questions: arkon@arkon.co.uk

Marketing support/ Brochures: marketing@arkon.co.uk

Technical support: support@arkon.co.uk

www.arkon.co.uk

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1. Introduction

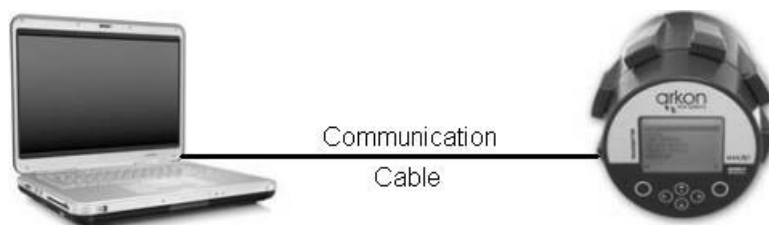
This document provides the mechanical installation and setup the 3G/GPRS/GSM module and MAGX2 transmitter. The 3G/GPRS/GSM module is possible to use it in MAGX2 device from firmware version 21.10.

1.2 Design of 3G/GPRS/GSM module

The 3G/GPRS/GSM module is a device, designed to get communicated with MAGX2 devices, which has the only possible way to reach them called GSM. There is one way to use this device: as a slave mode, to which the server connects. Slave is a mode to which the server connects. It is useful when you use several devices and in order to control or follow their work from your computer.

Designed with quad band GSM capabilities, which supports all four GSM bands - GSM 850 / GSM 900 / DCS 1800 / PCS 1900 MHz, and with GPRS multislot class 10, GPRS module can operate on any GSM/GPRS network to provide data communications.

The 3G/GPRS/GSM module can connect your MAGX2 devices with your PC for controlling, monitoring and administrating (Picture 2).



Picture 1. Wire connection



Picture 2. Wireless connection via GPRS module

1.2 System requirements

The hardware and software requirements of your computer must be at least equal or better than those listed below to ensure that the software works correctly.

- MS Windows 95, Windows 98, Windows Me, Windows XP, Windows Vista operating system or higher.
- MAGX2 software or other with MODBUS communication protocol RTU.
- MAGX2 flowmeter with some communication module (RS232, RS485, USB, Bluetooth, TCP/IP) and 3GGPRS/GSM module.
- PC or other system with internet connection.

2. Configuration

2.1 PC Software configuration of 3G/GPRS/GSM module

Before using of 3G/GPRS/GSM module you must set up the MAGX2 transmitter. You must use the MAGX2 software or another with MODBUS RTU communication protocol.

- 1) Launch the MAGX2 software on your PC.
- 2) Connect the MAGX2 flowmeter with PC via some MAGX2 communication module (USB, RS232, RS485, Bluetooth, TCP/IP).
- 3) Turn on the MAGX2 flowmeter.
- 4) Click to Service button and then click to GPRS tab (for enter use User password).



Picture 3. Example of settings

- 5) Setup GSM Gateway (Access Point Name) of your mobile provider
- 6) Setup your Login and Password (you get it from your mobile provider)
- 7) Choose TCP/IP communication port (0 – 1024). Default value is 987.
- 8) Set up Personal Identification Number (PIN) of your SIM card, if you have SIM card with enabled PIN. MAGX2 transmitter will store the PIN in memory and whenever the device restarts, MAGX2 transmitter will enter the PIN automatically. We recommend disabling PIN query of your SIM card than PIN box can be blank or 0.

2.2 Configuration of MODBUS communication protocol

Before normal use of the 3G/GPRS/GSM module you must set up the MODBUS communication protocol in MAGX2 transmitter. MODBUS communication protocol is in the User menu. You can use MAGX2 software or another one with MODBUS RTU communication protocol for set up. You can also set it up manually via the touch buttons.

Necessary settings of MODBUS communication protocol

Baud Rate: 19200

Parity: None, 1 stopbit



Picture 4. MODBUS communication protocol settings

3. Installation information

Installation of the 3G/GPRS/GSM module can be only performed by qualified staff or a person who has safety requirements.

3.1 SIM Interface

Before inserting or replacing SIM card – MAGX2 transmitter must be switched off! Otherwise, MAGX2 transmitter, SIM card or 3G/GPRS/GSM module may get damaged!

The 3G/GPRS/GSM module incorporates a SIM interface, which conforms to the GSM 11.11 and GSM 11.12 standards that are based on the ISO/IEC 7816 standard. These standards define the electrical, signalling and protocol specifications of a GSM SIM card.

The manufacturer does not supply the SIM card, which is mandatory for a connection to the GSM network! The SIM card may be purchased from your GSM (mobile) service provider! You must insert a GPRS enabled SIM card into 3G/GPRS/GSM module.

3.2 SIM card installation

Insert the SIM card to the 3G/GPRS/GSM module according to picture bellow.



Picture 5. SIM card installation

3.3 Antenna installation

Install antenna according to pictures bellow.



Picture 7. Antenna installation

3.4 3G/GPRS/GSM module installation



Picture 6. GPRS module location

3.5 Antenna and Transmission Safety Precautions

The unit must be installed to provide a certain separation distance of at least 20 cm or more, between the antenna and person, it must not be placed or operate in conjunction with any other antenna or transmitter to satisfy FCC RF exposure requirements for mobile transmitting devices.

Do not operate the equipment in the presence of flammable gases or fumes. Operation of any electrical equipment in such an environment constitutes a definite safety hazard.

4. PC internet connection

Your PC or your special system must be connected to the internet. There are two choices of connection: via dial-up connection (cell phone, GPRS modem) or direct connection via LAN or WIFI.



4.1 Connection to the internet via LAN or WIFI



In this case you must have the SIM card with static and public IP address for you MAGX2 flowmeter. The SIM card with static and public IP address may be purchased from your GSM (mobile) service provider!



4.2 Connection to the internet via cell phone or GPRS modem

If you are using the same mobile service provider on your cell phone or GPRS modem and MAGX2 flowmeter and you are in a VPN you can not pay for public IP address. You can use only non-public and static IP address. You can make connection to the internet via your cell phone or GPRS modem. Connect you cell phone to the PC and create a new Dial-Up Modem connection. You need to create a new internet connection in Windows XP. Go to Control Panel -> Network Settings -> Network Connections -> Create a new Connection. You want to choose a manual setup for a dial-up modem. For T-Mobile, the dial-in number is *99#, with name and password (name and password depends on you mobile service provider). If you get an error when you try to connect, enter *99***1# instead.



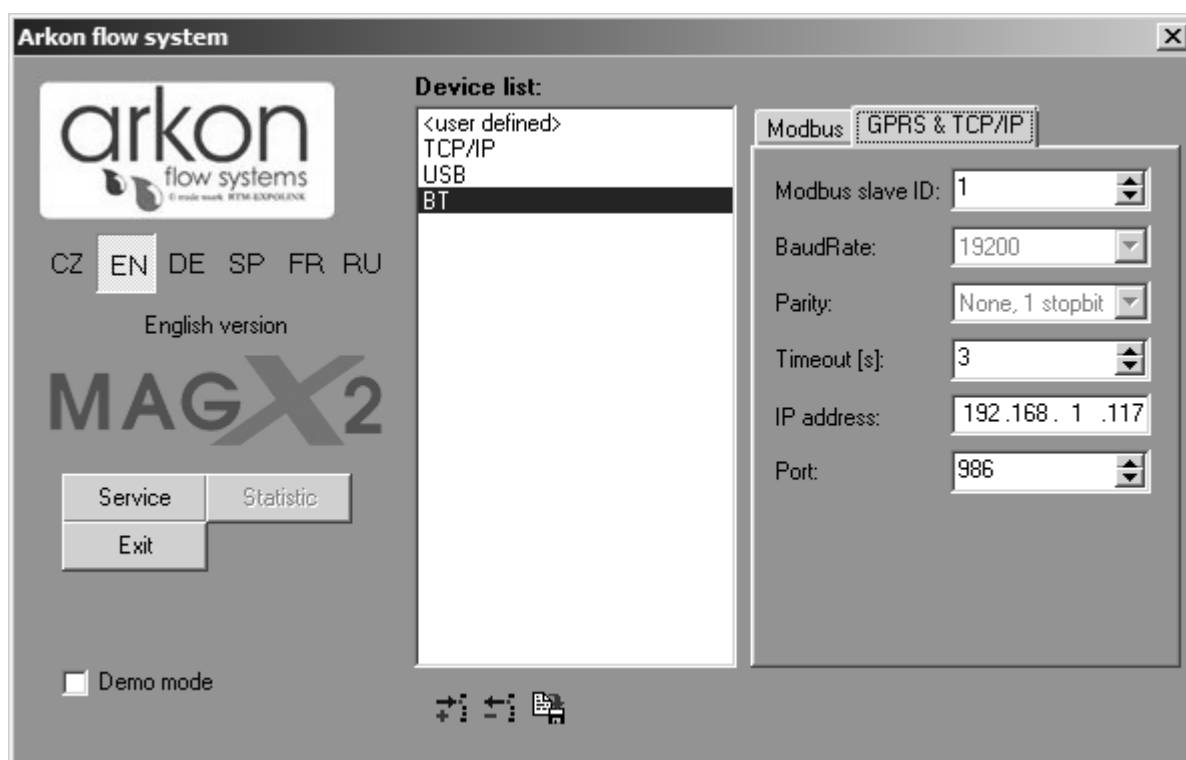
If you cut costs for static IP address, you could use the dynamic non-public IP address. But there is one problem. If the MAGX2 restarts the IP address will be different than before. You can read the recent IP address from MAGX2 display. The IP address is stored in Info menu in IP address item.

4. MAGX2 software

5.1 Starting MAGX2 software

After successfully connection between 3G/GPRS/GSM module and antenna you can launch the MAGX2 software. Choose tab GPRS and enter right parameters. You must enter Modbus slave ID, Timeout, IP address of your MAGX2 device and communication port which you set in section 2.1. The Timeout should be set to 6s or more for communication through 3G/GPRS/GSM module.

An example of setting GPRS connection, see following picture.



Picture 8. Setup of MAGX2 software

Note:

- If you make connection via 3G/GPRS/GSM module and then you do not communicate during 10 minutes, the 3G/GPRS/GSM module automatically close the connection. After that, you have to restart MAGX2 software or another control system.
- Do not change Modbus parameters if you communicate via GPRS, because Modbus settings have to be followed by 3G/GPRS/GSM module: Baud Rate 19200, Parity none, 1 stopbit.
- After restarting MAGX2 device, it is normal when the error message is showed on the display for less than 1 minute.