

AMR^{flex}

GPRS Communicator



livingas.

metreg 
Metreg Technologies GmbH

AMR^{flexS} / GPRS Communication Device (Automatic Meter Reading)

Key features

- Automatic Meter Reading system
- Remote communication for Gas volume correctors
- Communication in GSM/GPRS networks
- Installation in safe area
- Battery powered
- 1 digital pulse output
- Easy installation and easy maintenance



Device features

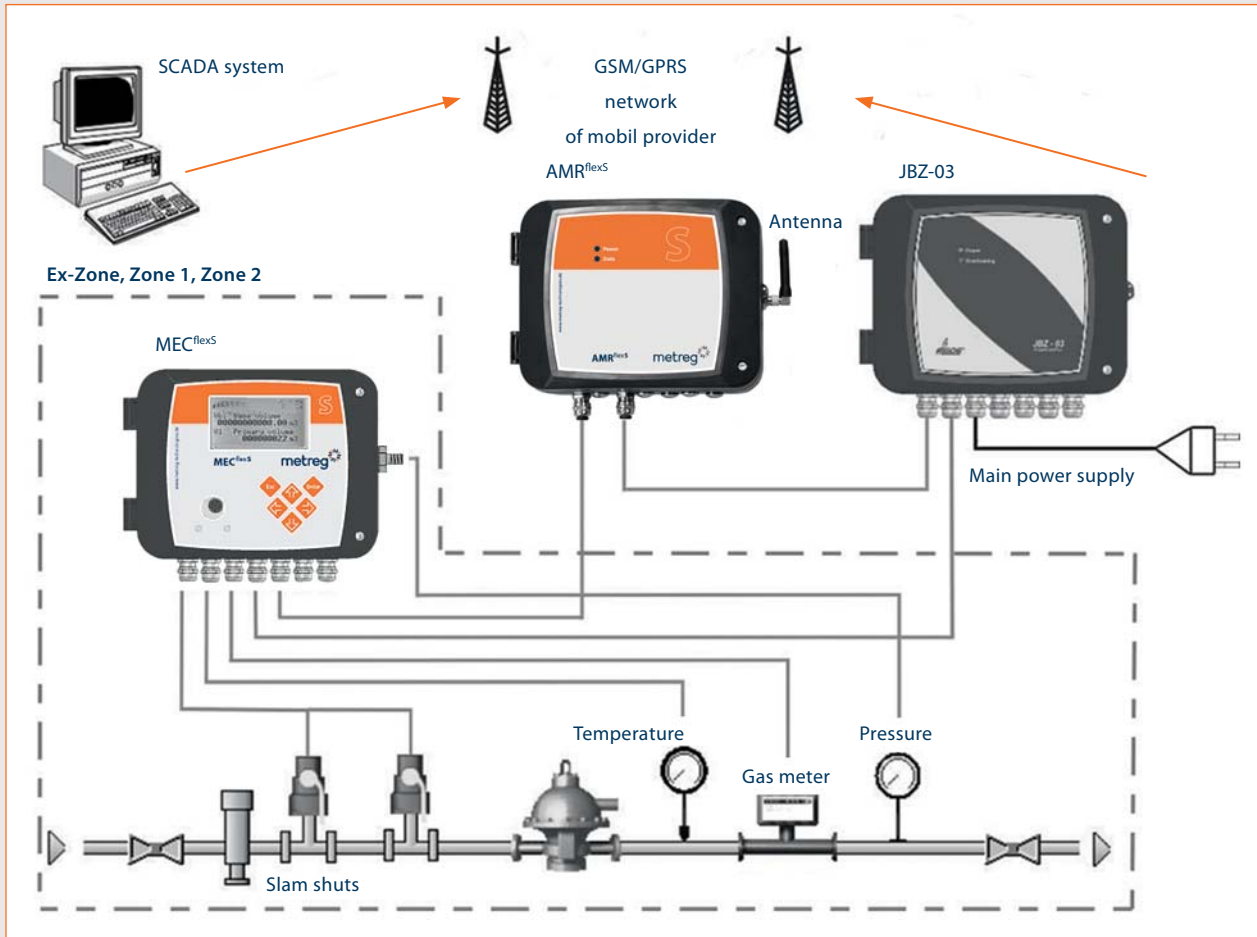
The GPRS communication device AMR^{flexS} is an automatic meter reading device. The AMR^{flexS} meets the customer's needs for data reading from the meters and transmitting the data to the external billing or supervisory system. The device is designed to be installed in a non-hazardous (safe) area.

The AMR^{flexS} automatic meter reading system is determined for remote data transfer from electronic volume correctors MEC^{flexS}, miniELCOR, ELCOR-2 and their alternative types. The equipment is placed in an environmentally and mechanically robust enclosure made of high grade engineered polymer.

An integrated GSM modem provides for communication with the external billing or supervisory system in mobile networks. It works in CSD mode (dial-in connection) or also GPRS modem.

The device is powered by a lithium battery. Due to the use of state of the art electronic components the energy consumption has been minimized. The battery lifetime depends on the operating conditions. Under the defined conditions it is typically 5 years.

Application example



Functionality

- Communication

Correctors may be connected to the device using the serial interface. Only correctors produced by Metreg Technologies GmbH (MEC^{flexS}) or ELGAS, s.r.o. (miniElcor and ELCOR-2) may be used.

- Digital output

The Device is equipped with one digital output ensured by a safety barrier. This gives the possibility to connect the volume corrector installed in a hazardous area (Ex-Zone) to be connected through the AMR^{flexS} device installed in a safe area via a digital output to other systems.

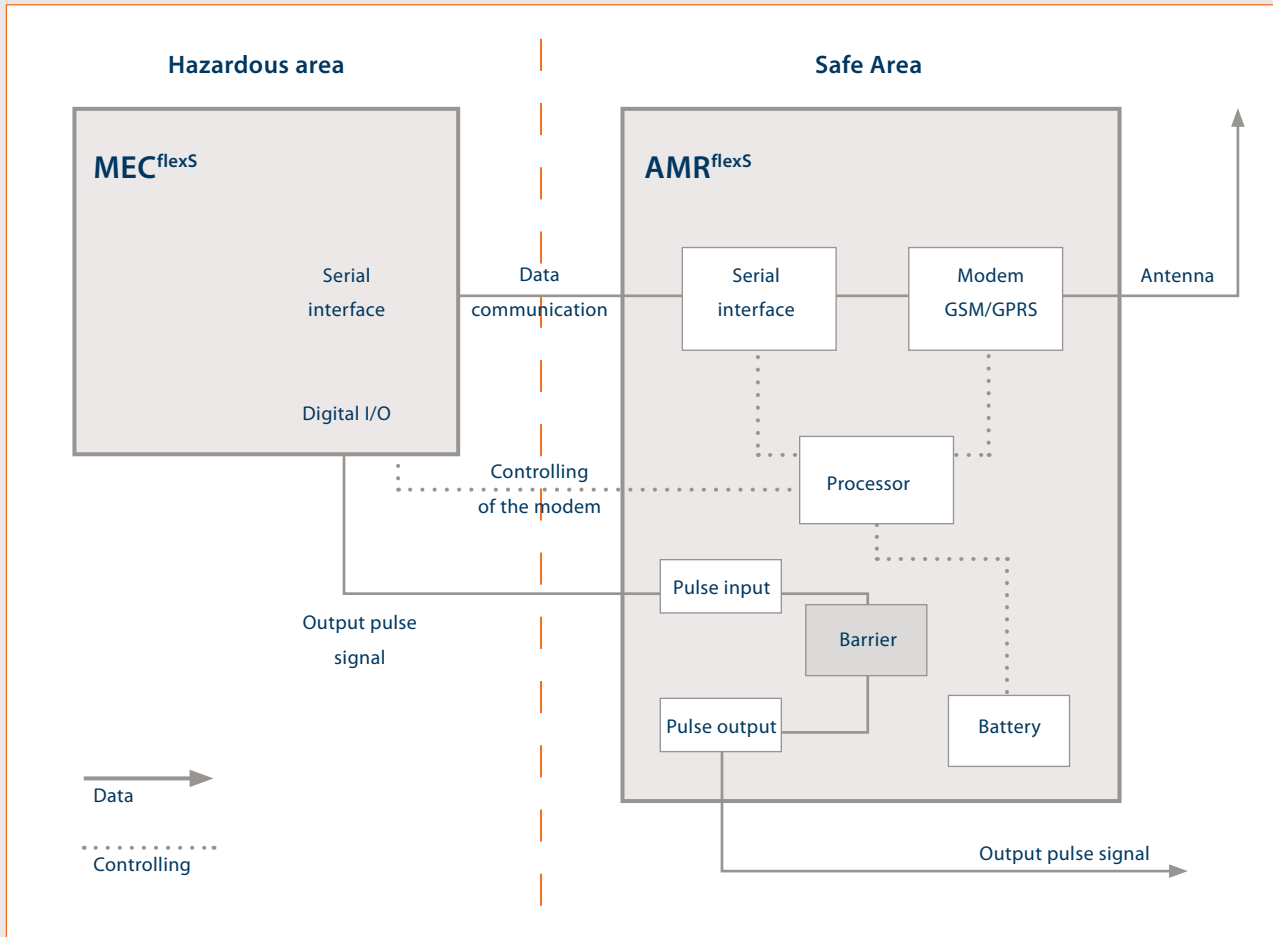
- Power supply

The power supply of the AMR^{flexS} is ensured by two lithium cells placed inside of the battery pack in the enclosure ensuring 5 years life time under defined operational conditions.

- Software

All parametrization and controlling of the AMR^{flexS} is realized via the connected volume corrector using the included TELVES software.

Schematic diagramm of the device



Technical specification

Mechanical parameters	dimensions (w x h x d)	(193 x 160 x 73) mm
	weight	0.9 kg
	housing	Engineered polycarbonate, UV stabilized
Environment	protection class	IP66 according to EN 60529
	ambient temperature	-25°C to +60°C
	storage temperature	-30°C to +85°C
Intrinsic safety	ATEX approval, classification	associated apparatus, non -hazardous area
Power supply	type of battery	Lithium battery pack (two D-size cells 3,6V / 13 Ah)
	battery lifetime	5 years in defined operating conditions
Digital output		
(ensured by safety barrier)	1 digital output	pulse output
Interface for connections	serial interface RS-485	
Communication in GSM network	GSM modem	
	<ul style="list-style-type: none"> 900 MHz, 1800 MHz, GPRS - standard (850 MHz, 1900 MHz as option) 	

AMR^{flexM} / GPRS Communicator (Automatic Meter Reading)

Key features

- Automatic Meter Reading system
- Communication in GSM/GPRS network
- Optionally to be installed in hazardous area
- Battery power supplied with management of energy consumption
- Option to connect gas volume corrector through serial interface
- 6 digital inputs (impulse, binary)
- 1 digital output
- Communication through IR interface
- High capacity of data storage due to the size of the memory
- Easy installation and easy maintenance



Device features

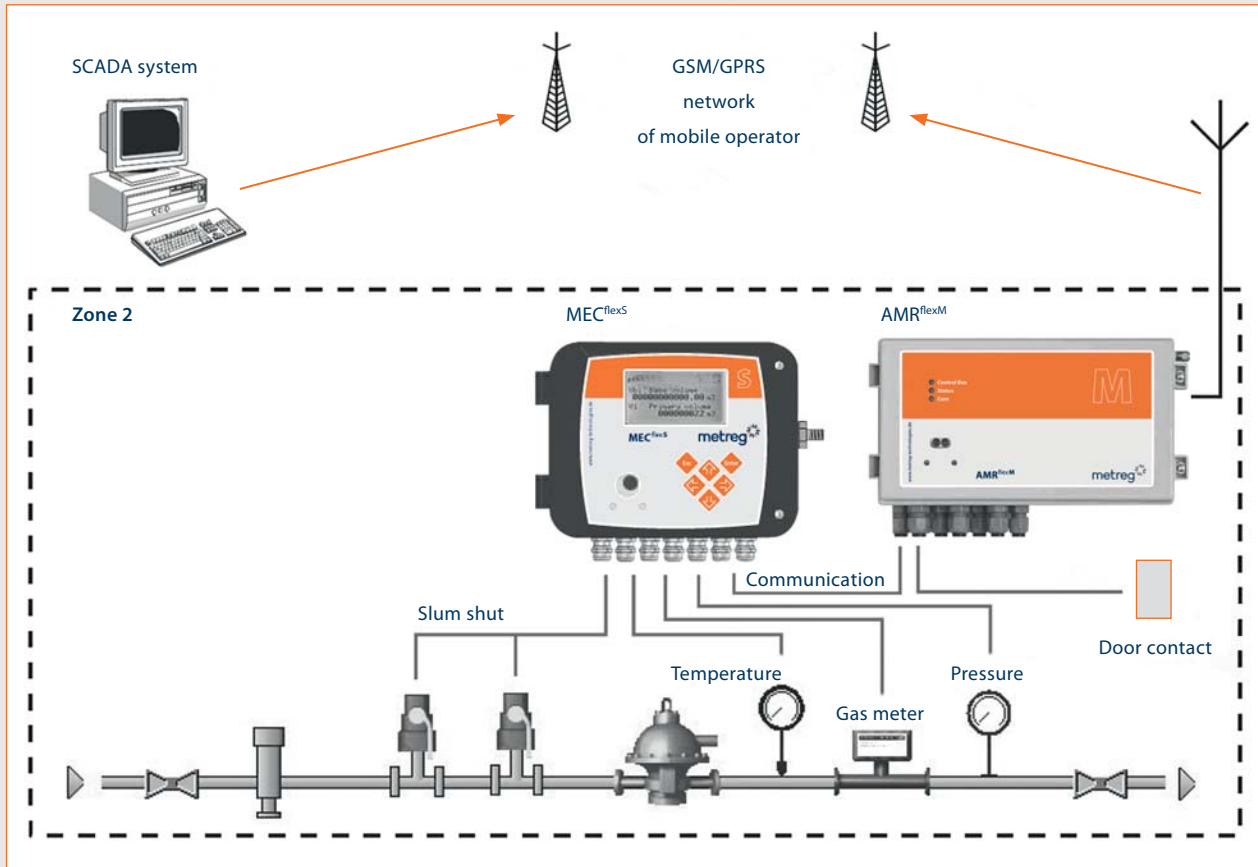
GPRS communicator AMR^{flexM} belongs to category of Automatic Meter Reading devices. AMR^{flexM} device meets the customer's needs for frequent data reading from the meters and following data transmission to the superior system.

AMR^{flexM} realizes two main functions - communication with superior system and collecting of data from connected correctors, impulse and state inputs. There is an inbuilt GSM modem for communication with superior systems, in mobile networks. The device works in CSD regime (dial connection) and also as GPRS modem.

The device is powered from lithium batteries, which are inbuilt into a battery pack. Using most modern components was the basis for minimization of energy consumption. In defined operational modes the device will operate for 5 years without battery exchange.

It is also possible to exchange the battery in the hazardous area. In case of battery disconnecting or changing the data and pulse inputs are saved through the back up battery.

Application example



Functionality

Correctors may be connected to the device using an interface RS-232, RS-485 or current. Communication interface is realized via exchangeable modules. Correctors produced by Metreg Technologies (such as MEC^{flexS}, MEC^{flexM}, or MEC^{flexV}) may be connected to the device as well as correctors made by other manufacturers.

The device is equipped with 6 digital inputs and one digital output. These inputs may be configured as a binary (e.g. for scanning of door contact or safety slam shut valves, etc.), or as pulse input (directly connecting a gas meter or corrector output signal). Maximum number of pulse inputs is 4. Digital output is configurable either as a binary or as pulse output.

Data from correctors and binary or pulse outputs are periodically read and saved to the archive. Also the operational status of the device is monitored. Alarm statuses are evaluated according to the configuration of the device. The content of the archive is transmitted through the GSM/GPRS communication to the master system.

The communication may also be parameterized in "transparent regime". The Master system may in that regime communicate directly with the corrector(s) which are connected to the AMR^{flexM} communicator to read out actual or archive values.

There are two possibilities of data transmission between the AMR^{flexM} communicator and the supervisory system. Besides the classic way of communication, when the supervisory system calls the device (so-called “call from above”) it is also possible to initiate data transmission by the device itself (so called “call underneath”).

During this type of communication the device may initiate the data transmission either because of an alarm status or periodically in set time intervals.

Technical specifications

Mechanical parameters

- dimensions (w x h x d) (225 x 125 x 75) mm, except connector and bushings
- weight 0,8 kg
- box material Engineering polymer composite, ABS, UV stabilized

Environment

- protection class IP65, according to EN 60529
- ambient temperature -20 °C - +60 °C
- storage temperature -30 °C - +85 °C
- climatic resistance suitable for installation in outdoor surroundings

Intrinsic safety

- classification Ex II 2G Ex ib IIA T3 Gb
Zone 1, Zone 2

Power supply

- type of battery lithium (Battery pack)
- battery lifetime 5 years, measuring of battery lifetime
- type of back-up battery lithium

Digital inputs

- 6 inputs, may be set as a pulse or binary:
- binary inputs – max. 6 inputs, connecting of reed contact or non-potential output
 - LF pulse inputs- max. 4 inputs, connecting of reed contact or nonpotential output, WIEGAND

Digital outputs

1 output, pulse and binary output (according to parametrization)

Interface for connection of corrector

by definition of changeable modules (specify in order):

- serial interface RS-232,
- serial interface RS485
- current interface

Communication in GSM network

- GSM modem
- 900 MHz, 1800 MHz, GPRS – standard
 - 850 MHz, 1900 MHz – option



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