



MARA-02 - Device for automatic monitoring of gas wells

Use

MARA-02 is used for automatic monitoring of ventilation deep wells. At the well it is used to monitor the concentration of methane (CH₄), speed and flow direction.

Description

MARA-02 consists of a switchboard RM1, solar panels and a lid flange for DN100. On the RM1 switchboard there are located glands, the antenna for GPRS communication, horn signaling opening of the cabinet door and tubing for the input/output of measured atmosphere from the well.

On the DN100 flange lid there are attached speed and flow direction sensor and tube for output of measured atmosphere.

Inside the RM1 switchboard, these components are placed: batteries, controller, time relay, relays, methane detector, modem, converters to evaluate speed and flow direction sensors, gas mixture pump, anti-explosion fuses and automat.

Device is powered by two batteries connected in series through fuses, main switch and controller, which provides the control of battery charging from solar panels.

From the controller there are time relays powered to provide regular switch on (switch off is provided via automat).

Also other devices are powered from the controller, circuits for monitoring the function of lid opening, temporary switch on and permanent switch on of the device.

To switch off the device, regular switch on, temporary switch on and permanent switch on is ensured by control relay (second relay contact).

The second contact also powers the automat, which, based on the implemented software, switches the relay to power the modem, methane sensor, speed and flow direction sensors and also gas mixture pump.

Technical parameters of MARA-02:

Sizes	1000 x 650mm
Nominal supply voltage	2 x 12VDC (80Ah)
Power consumpt.	Max. 15W
Connect. cables cross-section	0,08 to 4,00mm ²
Ambient temperature	0°C to +50°C
Relative humidity	95% max. without condensation
Protection	IP 65

Sensor CH4 IR24:

Measurement range	0% to 100%
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Speed sensor AN-01:

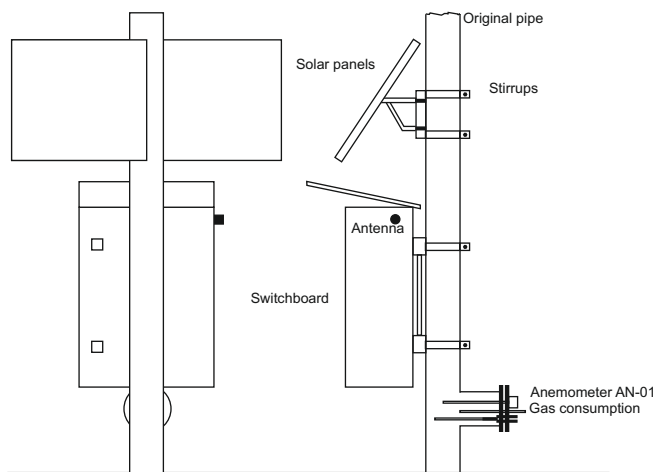
Measurement range	0,4 to 15m/s
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Converter IM1-22Ex-T for AN-01:

Intrinsically safe parameters	
U _o	9,6VDC
I _o	11mA
P _o	26mW
C _o	0,83uF
L _o	5mH

Source MK72-S03-Ex for AN-01:

Intrinsically safe parameters	
U _o	10,5VDC
I _o	32,2mA
P _o	0,34W
C _o	1,7uF
L _o	7mH



Assembly of MARA-02 device

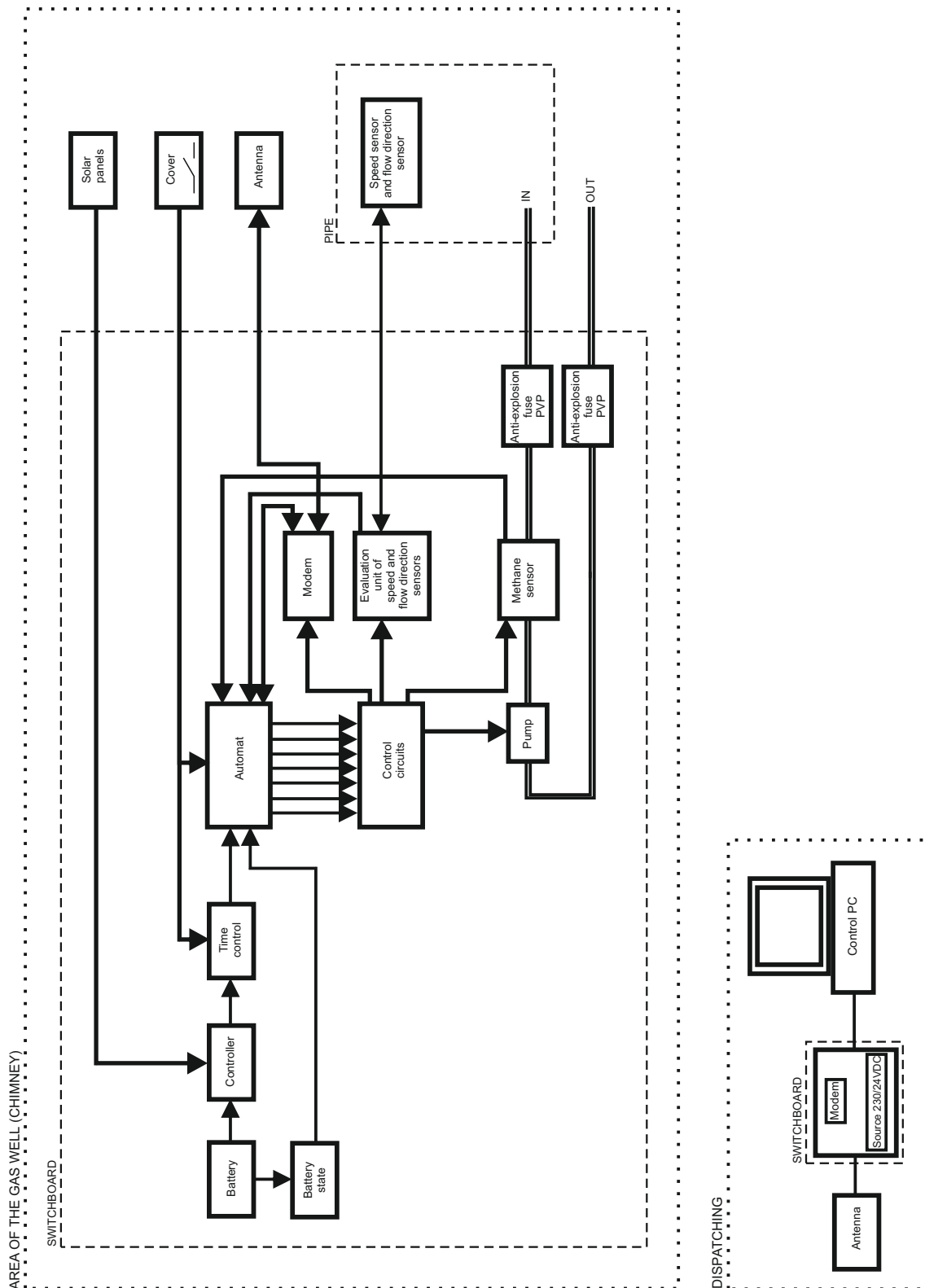


Placement of MARA-02 device

The catalogue has only those selected important parameters for your final decision. For project designs always ask for the user's guide for this product and any engineering consultation about possible uses.



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Block diagram of MARA-02 device

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