ELEMENTS OF REMOTE METERING

Two-way radio communication with remote water meters

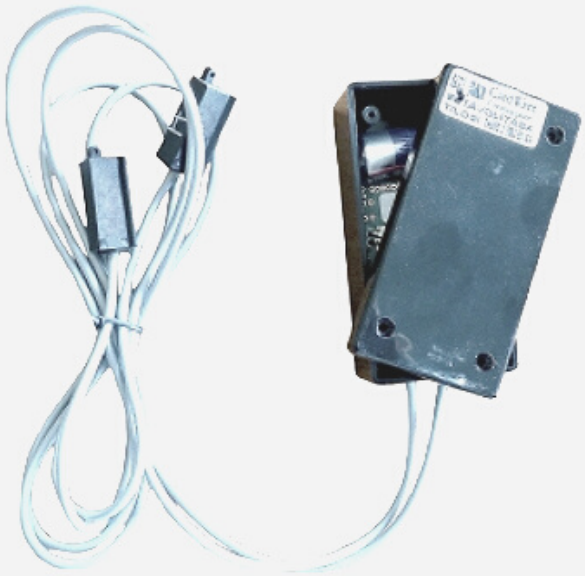
All water meters with standard pulse output can be connected to the CardWare's remote meter-reading system.

The pulse output of the water meters is connected to the RF transciever. We offer two types of radio frequency units to our customers. A local area network (LAN) device operating in the ISM frequency band (433/869 MHz) and the NB-IoT WAN unit. The NB-IoT device has its own SIM and uploads the consumption data directly to the central database. In contrast, the ISM device communicates with the database via the data gateway which is installed in the building. The gateway unit uses the 4G network of the GSM system for data upload.

A two-way connection is established between the water meters and the central server. This allows the service provider to manage certain firmware parameters remotely. The upload interval can be set without the need to visit the site and reprogram the units. The default setting is one consumption data every two hours, but this interval can be set remotely within wide limits. (The minimum adjustable interval is 2 minutes).

The power supply is a 3V primary battery. Battery life is a function of the communication frequency. Using default settings, eight years of operation can be achieved. Battery change is possible. After a new battery is installed, the device will continue to operate without any need for reprogramming.

At installation sites where there are two water meters (cold / hot) on two nearby backbone pipelines, the reading of the two meters can be achieved with a two-input radio device, thus increasing the cost-effectiveness of the system.



A two input RF unit for remote meter-reading of water meters.

MAIN PARAMETERS

- MULTIPLE WATER METERS ON ONE RF UNIT
- TWO-WAY DATA COMMUNICATION
- ISM FRENQUENCY BAND
- 3G/4G or NB-IoT
- PRIMARY BATTERY, 3V/1500mAh

- LONG BATTERY LIFE
- REAL TIME CONSUMPTION DATA
- AUTOMATIKUS MŰKÖDÉS
- ONLINE SYSTEM
- REMOTE MONITORING
- ALARMS, NOTIFICATIONS

APPLICATION SOFTWARE

The system is made really flexible by its internet based software

CardWare's remote meter reading system is bcked up with an Internet-based software. The program runs in any browser, no application installation is required and the inconveniences associated with it are eliminated. An unique password ensure access security.

The program manages multiple user-levels and permissions. The user is given the right authority for the task he is performing with the necessary insight into the database. The user groups are:

- **End user (the apartment owner)**
- **Administrator**
- **Technical supervisor**

The apartment owner can only view his / her own data in tabular and graphical form.

The administrator handles the consumption data, uploads it to the waterworks and prepares reports and data analysis.

The technical supervisor inspects the operation of the system, the communication platform, handles the error messages and the availability of the IT system.

The system prepares the consumption data for the automatic upload to the waterworks.

Consumption data can be displayed, printed and downloaded for later processing.

MAIN PARAMETERS

- KÉT VÍZMÉRŐ KEZELÉSE EGY RÁDIÓS ESZKÖZZEL
- TWO-WAY DATA COMMUNICATION
- ISM FRENQUENCY BAND
- 3G/4G or NB-IoT
- PRIMARY BATTERY, 3V/1500mAh
- LONG BATTERY LIFE
- REAL TIME CONSUMPTION DATA
- AUTOMATIC SERVICE
- ONLINE SYSTEM
- REMOTE MONITORING
- ALARMS, NOTIFICATIONS

Hidegvíz mérőóra kezdőértéke	Melegvíz mérőóra kezdőértéke	Hideg mérőóra állás	m
28,720 m³	14,920 m³	28,890 m³	15
140,850 m³	67,470 m³	144,090 m³	69
240,110 m³	151,050 m³	244,430 m³	154
46,460 m³	36,820 m³	46,840 m³	37
128,860 m³	78,450 m³	131,970 m³	80
77,750 m³	70,120 m³	79,200 m³	71
18,980 m³	15,170 m³	19,150 m³	15
162,490 m³	74,110 m³	164,990 m³	75
86,880 m³	48,230 m³	87,820 m³	48
95,640 m³	104,300 m³	97,550 m³	106
73,580 m³	103,530 m³	73,620 m³	103
189,510 m³	148,250 m³	194,050 m³	151
116,770 m³	55,800 m³	119,930 m³	57
173,940 m³	121,250 m³	176,630 m³	123
121,660 m³	85,540 m³	123,880 m³	86
71,350 m³	33,870 m³	73,100 m³	34
139,160 m³	40,890 m³	142,470 m³	41
118,750 m³	60,410 m³	120,990 m³	61
161,990 m³	85,100 m³	164,520 m³	86
149,350 m³	95,020 m³	152,050 m³	96
9,410 m³	4,810 m³	9,670 m³	4
57,420 m³	20,300 m³	58,360 m³	20
142,440 m³	82,630 m³	144,860 m³	84
90,010 m³	58,950 m³	91,190 m³	59
148,540 m³	124,390 m³	152,280 m³	129
40,670 m³	30,430 m³	41,120 m³	30
145,140 m³	128,230 m³	148,550 m³	130
115,310 m³	142,850 m³	117,490 m³	145