REDZ SMART COMMUNICATION

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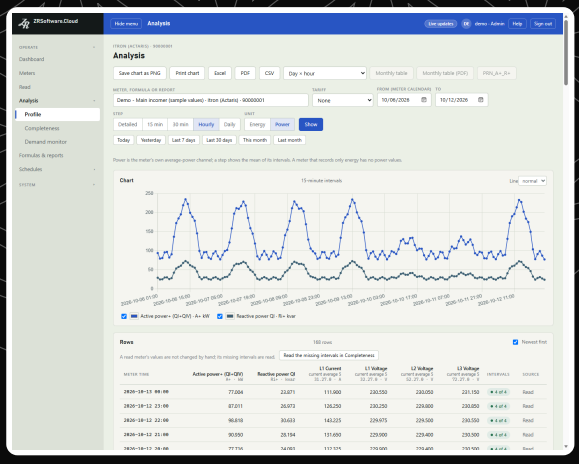
ZRSoftware.Cloud for Electricity Meters

Reads electricity meters and keeps their values on this PC.

Load profile analysis, tariffs, formulas and custom reports.

Schedules that read meters by themselves, and exports to a folder, by e-mail or to an FTP, FTPS or SFTP server.

A Windows service on this PC; you work with it in a web browser on the same PC.



Analysis: a week of hourly average power from the 15-minute load profile. The picture shows sample values.

The service runs and reads the meters on its schedules also when nobody is signed in to Windows and no browser is open, as long as the licence allows it.

Eight Functions

1. **Communication lines:** an optical probe or an RS-232 / RS-485 connection on a COM port of this PC, or a TCP gateway or modem.
2. **Meters and groups:** keep a list of the meters, sort them into groups and choose many of them at once.
3. **Reading:** read a meter's registers and its load profile, and follow the bytes exchanged with the meter.
4. **Analysis:** look at the load profile in steps from 15 minutes to a day, split the energy into tariff zones, and combine meters in formulas and reports, also a virtual meter, whose values are typed in or imported.
5. **Schedules:** a schedule reads a list of meters by itself at the times you set: the load profile, the registers, or only what is missing from the stored profile.
6. **Exports:** an export writes a file by itself at the times you set and delivers it to a folder, by e-mail or to an FTP, FTPS or SFTP server.
7. **Import:** bring in meters, schedules and exports from Excel or CSV files.
8. **Licence, updates and REDZ support:** a 30-day trial and a licence by request, by key or as a file; updates of the program from REDZ on the Settings page; REDZ support for a chosen time, with the rights of an Admin, and the support bundle.

Key Figures

7 meter types
read on real meters with the program's meter drivers (Supported Meters)

Windows on x64 PCs
a Windows version that .NET 10 supports (Technical Data); nothing else to install first

30-day trial
every feature is open and there is no meter limit

Up to four lines at once
one meter at a time on a line

366 days
The range can be at most 366 days on the Analysis page.

Three roles
Viewer, Operator and Admin

Main Features

Lines and meters

- The service reads one meter at a time on a line, in the order the reads were asked for; different lines are read at the same time, up to four lines at once.
- Groups are labels for meters; a meter can be in several groups.
- A meter cannot be deleted; archive it instead. The meter and its readings stay in the program, but it is no longer read; Restore brings it back with all its readings, unless the licence has no room for another meter.
- For a TCP line an admin can look for REDZ devices on the network.

Reading

- The Line log card shows the bytes between the PC and the meter as it happens; a DLMS login with a password is not recorded.
- When you read a load profile, the days you choose are in the meter's own calendar: the service asks the meter for these dates as the meter's clock counts them, even when that clock is far from the PC's.

Analysis, tariffs and formulas

- The Analysis page shows the load profile that is stored for a meter: as a chart, as a table of rows with minimum, maximum, average and sum, and as files you can save.
- A tariff divides the day into time-of-use zones, such as day, peak and night.
- A formula calculates a new load profile from the channels of several meters, for example a main meter minus its sub-meters.
- A custom report puts meter channels and formulas side by side in one table.
- Monthly table saves one month of a channel as a table of hours and days.

Schedules and exports

- A schedule runs Every 5 min, Every 15 min, Every hour, every day at a time, Monthly on day, or on a Custom (month / day / hour / minute) pattern.
- An export writes a file by itself at the times you set: the load profile or the billing values of a meter, or the result of a formula or a custom report, for a period such as yesterday or last month.
- The file goes into a folder, is sent by e-mail or is uploaded to an FTP server.
- If the PC or the service was off at a planned time, the missed run is made once, as soon as the service runs again, while the licence allows it.

Remote access

- The users you allow can work with the program from the ZRSoftware app on their phone when they are away from this network; this PC only opens an outgoing connection.

Your Data on This PC

- A meter's password: the service seals the password on this PC and never sends it back to a page, so no one can read it from the pages.
- The stored meter password never appears in the log.
- A stored password is sealed with Windows on this PC; a copy of the database on another PC cannot read it. Only the service, Windows itself and programs started with administrator rights can open the data folder; other Windows users of the PC cannot.
- The uninstaller deletes the update task, the program's Windows Firewall rules, the program files and the desktop shortcut; the data folder is not deleted: the database, its backups, the logs and a downloaded update setup stay in C:\ProgramData\REDZ\ZR Software.

Users

- There are three roles: Viewer, Operator and Admin. Each role can do everything the role before it can do.
- The program on this PC checks the role for every action, not only the pages in the browser: an action the role does not allow is refused.
- Every user can change their own password on the page My password.

Import

- Import first shows what each row would do; if any row has an error, nothing from the file is saved.
- **Can take over the meters, readings and lists of ZR Software 7.**

Good to know

- For an export, a scheduled run that fails is tried once more 15 minutes later.
- Updates: a version released on or before the last day of your maintenance can be installed. An admin, or REDZ support during a support session, can download and install an update.

Technical Data

Computer	A Windows version that .NET 10, which the program is built on, supports on x64 PCs.
Rights	A Windows account with administrator rights to run the setup.
Windows service	Windows service ZRSoftware, account NT SERVICE\ZRSoftware, Automatic (delayed start).
Address	The pages open at http://127.0.0.1:5080, or at the port chosen on the Options page.
Lines	Serial (COM port): optical probe or RS-232 / RS-485; or TCP (gateway or modem).
Protocols	IEC 62056-21 and DLMS, as the Supported Meters table shows for each meter type.
Users and roles	Viewer, Operator and Admin. The licence does not limit the number of users.
Export files	STANDARD (xlsx) or PRN_A+_R+.
E-mail	STARTTLS (the default; the card pairs it with port 587), SSL/TLS (465) or None.
FTP upload	FTPS (explicit TLS) (the default), SFTP or FTP (not encrypted), which sends the password and the files in clear text.
Import	Import page: Excel 97-2003 (.xls), .xlsx and .csv files of at most 2 MB and 2 000 rows.

Supported Meters

The meter types that have been read on real meters with the program's meter drivers.

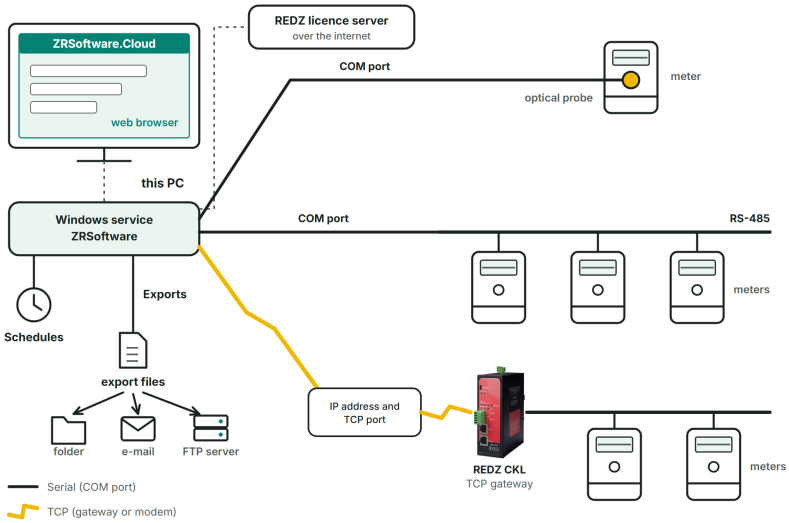
Meter type	Protocol	Registers	Load profile
EMH	IEC	Yes	Yes
Landis & Gyr (IEC)	IEC	Yes	Yes
Iskra (IEC)	IEC	Yes	No
Itron (Actaris)	DLMS	Yes	Yes
Iskra (DLMS)	DLMS	Yes	Yes
Cewe (Secure Meters)	DLMS	Yes	Yes
Landis & Gyr (DLMS)	DLMS	Yes	Yes

For the load profile of an Iskra meter that also speaks DLMS, choose the type Iskra (DLMS); it needs the meter's password.

Licence

- A licence works only on the PC it was made for. The meter limit counts active meters; virtual meters count toward the meter limit too. The program runs as a trial for 30 days, counting the day it first ran on this PC.
- **Request a licence:** your details and this PC's machine code go to REDZ; an approved request, with the details in it, stays on the licence server with the licence record.
- An online licence checks in with the REDZ licence server once a week, and on a virtual PC once a day. The check-in sends the licence number, this PC's machine code, the program version and the number of active meters, and also the check-in counter the licence server gave this PC last. The licence server keeps each check-in with the licence record: its time, the program version and the number of meters; and the record of this PC's seat: a code made from parts of the PC, the last version and the number of meters, with no time limit.
- When the trial or the licence ends, the PC clock is behind, the version was built after maintenance, the licence is for another PC, or the licence is withdrawn, the program stops reading meters, and schedules and automatic exports stop too; the import and the manual edit tools close as well. Your data stays.
- When the licence server says that the licence was withdrawn or moved, or that it does not know it on this PC, the program goes on reading meters for seven days and then stops. On a physical PC the same seven days follow for a copy of this PC, a second installation on it, or one put back from a backup. They also begin when an online licence has not reached the licence server for more than 60 days, on a virtual PC for more than 7 days.
- On a virtual PC the licence is activated online only. If a copy of the virtual PC, or one put back from a snapshot, checks in, the licence server answers "copied" to the original as well as to the copy, and meters are not read, without the seven days.
- If the PC clock was set forward and then put right, during the trial or with a licence that has an end date, meters are not read (Clock behind) until the PC clock is again less than 24 hours behind the latest time the program saw. A clock that was set back and is then put right does not stop the reading.
- When maintenance ends, the licence keeps working and meters are still read; a version built after maintenance ended, also one installed by hand, does not read meters with this licence.

Typical Application



A communication line is the way the program reaches meters: a COM port on this PC (an optical probe or an RS-232 / RS-485 connection) or a TCP address (a gateway or modem).

First Steps

1. The setup program installs the service and starts it; on a new installation, its Finish page opens a one-time setup link in your default browser, where you set the admin password.
2. Add the line through which this PC reaches the meters.
3. Add a meter on that line, then read it once on the Read page.

Help from REDZ Support

- An admin can send a support bundle to REDZ support, or let REDZ support work in the program for 4, 12 or 24 hours, from the Support page. It ends by itself at that time; End now here always ends it. A green window at the top right of every page says until when REDZ support is connected; there an admin can chat with REDZ and end the session.
- REDZ support works with the rights of an Admin. It can add users and give a new one-time password to a user who has no remote sign-in. It cannot change its own account or the support session, give or change a user's e-mail address or remote sign-in, reset the password of a user who has remote sign-in, or reset the password of the last enabled Admin. It cannot change or test the mail settings on the Mail card or change the remote access settings on the Remote access card. Settings that are not set here can still come in during the session.
- REDZ support can add users, Admins too, change their role, turn them on or off and reset a password; a user added this way stays after the session ends.
- Everything else an administrator may do stays open while the time runs, also what cannot be undone: for example loading, moving or removing the licence, changing the FTP settings and meter passwords, deleting lines, schedules, exports, adding an export that e-mails data to any address, installing an update, importing, or sending the support bundle.
- Jobs & events gets a row for each change REDZ support makes or tries to make, and for each file or reading trace it takes, also when it saves the chart as a picture or prints a page; what was typed, for example a password, is not in the row. Pages that REDZ support only looks at leave no row.
- The request sends the time chosen, the problem, your name, e-mail and telephone number, this PC's machine code, the licence number if there is one, and the program version to REDZ.
- Your details and the problem are seen by REDZ staff on the REDZ licence server. The licence server keeps the record of each support session and support bundle (who sent it, contact details, note) with no time limit; a support bundle's file is deleted after 90 days. The chat lines are kept with the support session, with no time limit. The name you type in the first request and the licence number become the name of this PC's connection at REDZ; later requests keep it.
- The bundle holds the program's lists without passwords (meter serial numbers and locations, the addresses of the lines, user names, the targets of the exports, the mail and FTP servers with their user names), the PC name, the licence, the event log of the last 90 days, the reading jobs of the last 30 days and the service's daily log files; meter readings and load profile values stay out.

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